



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

**July – September 2015**

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## Foreword

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### AGM-14 and Changes to the Asia-Pacific QAAD Report

The Fourteenth Meeting of the Asia Regional Advisory Group on Aquatic Animal Health (AGM-14) was held in KU Home, Kasetsart University Campus, Bangkok, Thailand on 23-25 November 2015. This annual meeting was attended by AG members including representatives from partner organizations (FAO, OIE and SEAFDEC AQD), aquatic animal health experts in the region (Australia, China, and Thailand), and the private sector (Aquafuture Norway). Co-opted members include the private sector (MSD Animal Health, Fish Vet Group Asia). This year, representative from Chinese Taipei was also invited as Observer. Dr. Kjersti Gravningen (Aquafuture, Norway) and Dr. Rolando Pakingking, Jr (SEAFDEC AQD) served as Chairperson and Vice-Chairperson, respectively.



**The 14<sup>th</sup> Asia Regional Advisory Group on Aquatic Animal Health.**

***Back Row (From Left to Right)***

**Dr. Andy Shinn** (FishVet Group, Thailand), **Dr. Ingo Ernst** (OIE-AAHSC and DA, Australia), **Mr. Simon Wilkinson** (NACA), **Mr. Kah Hui How** (OIE-RRAP, Japan), **Dr. Siow Foong Chang** (MSD Animal Health, Singapore), **Dr. Huang-Lin Kao** (Observer, BAPHIQ, Chinese Taipei)

***Front Row (From Left to Right)***

**Dr. Eduardo Leño** (NACA), **Dr. Hong Liu** (AQSIQ, P.R. China), **Dr. Rolando Pakingking, Jr.** (SEAFDEC AQD, Philippines), **Dr. Hirofumi Kugita** (OIE-RRAP, Japan), **Dr. Puttharat Baoprasertkul** (IAAHRI, Thailand), **Prof. Timothy Flegel** (Centex Shrimp, Thailand), **Dr. Kjersti Gravningen** (Aquafuture, Norway), **Mr. Weimin Miao** (FAO-RAP, Thailand), **Dr. Derun Yuan** (NACA)

The group discussed current concerns and issues on aquatic animal health as well as other health-related topics such as antimicrobial resistance, aquaculture certification and diseases of reptiles among others. Progress reports from NACA and other partner agencies (including OIE [AAHSC and RRAP], FAO, SEAFDEC AQD, DA Australia, AAHRI Thailand, and Peoples Republic of China were also presented. Updates were made on aquatic animal diseases in the region, status of disease reporting in the Asia-Pacific, and list of diseases for QAAD reporting for 2016.

One very important issue discussed was on the printing of hard copy of QAAD Reports, which was recommended to be stopped since AGM 13 (2014). There is also considerable overlap/duplication between the OIE-RAP and NACA systems of disease reporting. As such, the following steps are, therefore, proposed:

- 1) Create only one QAAD Report for Asia, by streamlining and consolidating the necessary work separately operated by OIE and NACA in the past. Member's burden of overlapped reporting must be minimized at the same time.
- 2) Develop mutually compatible information system between QAAD Report and WAHIS/WAHID. The idea of WAHIS Regional Core, which has long been on the table, have to be revisited and refined for better and reasonable solution.

In the absence of WAHIS Regional Core, NACA has suggested the possibility of moving to electronic data entry of national QAAD reports. This would facilitate export of records to the WAHIS system in the future (once the Regional Core becomes operational).

With this proposed changes, this issue (3<sup>rd</sup> Quarter 2015) will be the LAST PRINTED ISSUE of this report. The next issue will be published online which can be accessed and downloaded at NACA website for free ([www.enaca.org](http://www.enaca.org)). Merging of NACA and OIE QAAD Report for Asia-Pacific will also commence starting the first quarter of 2016.

In the meantime, it is also crucial for OIE member countries to recognise their obligation of immediate notification as well as regular reports to the OIE World Animal Health Information System (WAHIS), apart from QAAD report.

**This issue is the last printed (hard copy) of QAAD Report for Asia and the Pacific. Future issues will be published electronically which can be accessed for free download at NACA website.**

**Merging of OIE and NACA QAAD Report for Asia and the Pacific will also commence in the First Quarter Report for 2016.**

## **Reports Received by the NACA Secretariat**

Country: AUSTRALIAPeriod: July - September 2015

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	July	August	September		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	-(2012)	-(2012)	-(2012)		1
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with <i>Aphanomyces invadans</i> (EUS)	-(2014)	-(2014)	-(2014)		2
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	-(2015)	-(2015)	-(2015)		3
10. Enteric septicaemia of catfish	-(2014)	(2014)	(2014)		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>	+()	+()	+()	III	5
3. Infection with abalone herpesvirus	-(2011)	-(2011)	-(2011)		6
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
5. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
6. Acute viral necrosis (in scallops)	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	0000	0000	0000		
3. Yellowhead disease (YHD)	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-(2014)	-(2014)	-(2014)		7
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	-(2008)	-(2008)	-(2008)		8
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
8. <i>Monodon</i> slow growth syndrome	0000	0000	0000		
9. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	-(2008)	-(2008)	-(2008)		9
2. Infection with <i>Batrachochytrium dendrobatidis</i>	-(2013)	-(2013)	-(2013)		10
<b>ANY OTHER DISEASES OF IMPORTANCE</b>					
1.					
2.					

**DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup>  
LISTED BY THE OIE**

**Finfish:** Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.

**Molluscs:** Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.

**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).

**NOT LISTED BY THE OIE**

**Finfish:** Channel catfish virus disease

a/ Please use the following symbols:

<p>+ Disease reported or known to be present</p> <p>+? Serological evidence and/or isolation of causative agent but no clinical diseases</p> <p>? Suspected by reporting officer but presence not confirmed</p> <p>+() Occurrence limited to certain zones</p> <p>+?() Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease</p>	<p>?() Presence of the disease suspected but not confirmed in a zone</p> <p>*** No information available</p> <p>0000 Never reported</p> <p>- Not reported (but disease is known to occur)</p> <p>(year) Year of last occurrence</p>
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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	<b>Epizootic haematopoietic necrosis</b> was not reported this period despite passive surveillance in Victoria (last reported 2012), the Australian Capital Territory (last reported 2011), New South Wales (last reported 2009) and South Australia (last reported 1992). Passive surveillance and never reported in the Northern Territory, Queensland, Tasmania and Western Australia.
2	<b>Infection with <i>Aphanomyces invadans</i> (EUS)</b> is known to have occurred previously in Queensland (last reported 2014), Western Australia (last reported 2013), New South Wales (last reported 2012), the Northern Territory (last reported 2012), Victoria (last reported 2012), and South Australia (last reported 2008). Passive surveillance and never reported in Tasmania. No information available in the Australian Capital Territory.
3	<b>Viral encephalopathy and retinopathy</b> is known to have occurred previously in the Queensland (last reported in May 2015), Northern Territory (last reported 2013), Western Australia (last reported 2013), New South Wales (last reported 2010), South Australia (last reported 2010) and Tasmania (last reported 2000). Passive surveillance and never reported in Victoria. No information available in the Australian Capital Territory.
4	<b>Enteric septicaemia of catfish (<i>Edwardsiella ictaluri</i>)</b> has been reported from clinically normal fish from a single river in Queensland (October 2014). This is the only occurrence of <i>E. ictaluri</i> in wild fish populations in Australia. Active surveillance throughout Northern Australia has found no evidence of <i>E. ictaluri</i> in any other wild fish populations. <i>E. ictaluri</i> has been detected previously in association with imported ornamental fish including: Northern Territory in closed aquarium (last reported 2011) and in PC2 containment facilities in Tasmania (last reported 2001) and Queensland (last reported 2008). Passive surveillance and never reported in New South Wales, South Australia, Victoria or Western Australia. No information available this period in the Australian Capital Territory.



5	<p><b>Infection with <i>Perkinsus olseni</i></b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in Western Australia</b> in July, August and September; active surveillance;</li> <li>2. <b>Species affected</b> – greenlip abalone (<i>Haliotis laevis</i>);</li> <li>3. <b>Clinical signs</b> – most infections subclinical, some animals exhibited blisters;</li> <li>4. <b>Pathogen</b> – <i>Perkinsus olseni</i>;</li> <li>5. <b>Mortality rate</b> – nil;</li> <li>6. <b>Economic loss</b> – N/A;</li> <li>7. <b>Geographic extent</b> – N/A;</li> <li>8. <b>Containment measures</b> – N/A;</li> <li>9. <b>Laboratory confirmation</b> – RFTM, conventional PCR as described by the OIE (<i>Perkinsus</i> genus and <i>P. olseni</i> specific ITS assays), qPCR (Gauthier 2006);</li> <li>10. <b>Publications</b> – None.</li> </ol> <p><i>Perkinsus olseni</i> was not reported this period despite passive surveillance in Victoria (last reported 2015), Queensland (last reported 2014), South Australia (last reported 2013) New South Wales (last reported 2005) and Western Australia (last reported 2003). Passive surveillance and never reported in the Northern Territory and Tasmania. No information available for the Australian Capital Territory (susceptible species not present and no marine water responsibility).</p>
6	<p><b>Infection with abalone herpesvirus (abalone viral ganglioneuritis)</b> was not reported this period despite targeted surveillance in Tasmania (last reported 2011) and passive surveillance in New South Wales (last reported 2011 and eradicated following detection in contained commercial live-holding facilities), and Victoria (last reported 2010). Passive surveillance and never reported in the Northern Territory, Queensland, South Australia and Western Australia. No information available this period for the Australian Capital Territory (no marine water responsibility).</p>
7	<p><b>Infectious hypodermal and haematopoietic necrosis virus</b> was not reported this period but is known to have occurred previously in Queensland (last reported 2014) and the Northern Territory (last reported 2003). Passive surveillance and never reported in New South Wales, South Australia, Victoria and Western Australia. No information available this period in the Australian Capital Territory (no marine responsibility) and Tasmania (susceptible species not present).</p>
8	<p><b>White tail disease</b> was not reported this period despite passive surveillance in Queensland (last reported 2008). Passive surveillance and never reported from the Australian Capital Territory, New South Wales, the Northern Territory, South Australia, Victoria and Western Australia. No information available this period in Tasmania (susceptible species not present).</p>
9	<p><b>Infection with ranavirus</b> was not reported this period despite passive surveillance in the Northern Territory (last reported 2008, prior to official reporting for ranavirus). Suspected but not confirmed through passive surveillance in Queensland. Passive surveillance and never reported in Tasmania. No information available this period in the Australian Capital Territory, New South Wales, South Australia, Victoria and Western Australia.</p>
10	<p><b>Infection with <i>Batrachochytrium dendrobatidis</i></b> was not reported this period despite passive surveillance in Tasmania (last reported 2013), Victoria (last reported 2011) and Western Australia (last reported 2008). Suspected but not confirmed through passive surveillance in Queensland. No information available this period in the Australian Capital Territory, New South Wales, the Northern Territory, and South Australia.</p>

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

The Australian Aquatic Veterinary Emergency Plan (AQUAVETPLAN) disease strategy manuals for Ostereid herpesvirus-1 microvariant (April), and the revised Enterprise Manual (May) were published on the Department of Agriculture website in 2015 (<http://www.agriculture.gov.au/aquavetplan>).

Country: **HONG KONG SAR, CHINA**Period: **July - September 2015**

Item	Disease status <sup>at</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	July	August	September		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000	II	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp (SVC)	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000	III	
5. Infection with <i>Aphanomyces invadans</i> (EUS)	0000	0000	0000	III	
6. Red seabream iridoviral disease (RSID)	-	-	-	III	
7. Koi herpesvirus disease (KHV)	-	-	-	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	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. Infection with abalone herpesvirus	0000	0000	0000	II	
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000	II	
<b>Non OIE-listed diseases</b>					
5. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000	II	
6. Acute viral necrosis (in scallops)	0000	0000	0000	II	
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000	III	
2. White spot disease (WSD)	-	-	-	III	
3. Yellowhead disease (YHD)	0000	0000	0000	III	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000	II	
5. Infectious myonecrosis (IMN)	0000	0000	0000	II	
6. White tail disease (MrNV)	0000	0000	0000	II	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	II	
<b>Non OIE-listed diseases</b>					
8. <i>Monodon</i> slow growth syndrome	0000	0000	0000	II	
9. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	II	
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	0000	0000	0000	II	
2. Infection with <i>Batrachochytrium dendrobatidis</i>	0000	0000	0000	II	
<b>ANY OTHER DISEASES OF IMPORTANCE</b>					
1.					
2.					

**DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup>  
LISTED BY THE OIE**

**Finfish:** Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.

**Molluscs:** Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.

**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).

**NOT LISTED BY THE OIE**

**Finfish:** Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	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
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	
2	
3	

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

Country: **INDIA**Period: **July - September 2015**

Item	Disease status <sup>at</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	July	August	September		
<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 (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with <i>Aphanomyces invadans</i> (EUS)	-	-	-		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	0000	0000	0000		
<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>	+	+	+		1
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
5. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
6. Acute viral necrosis (in scallops)	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	+	+	+	III	2
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	+	-	-	III	3
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
8. <i>Monodon</i> slow growth syndrome	-	-	-		
9. Acute hepatopancreatic necrosis disease (AHPND)	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.					

**DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup>  
LISTED BY THE OIE**

**Finfish:** Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.

**Molluscs:** Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.

**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).

**NOT LISTED BY THE OIE**

**Finfish:** Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	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
+()	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?()	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	Infection with <i>Perkinsus olseni</i> was observed in wild <i>Paphia malabarica</i> from Kozhikode and Kasaragod District of Kerala.
2	WSSV was detected in <i>Litopenaeus vannamei</i> from Nellore, Guntur and Krishna districts in Andhra Pradesh; East Medinapur, North 24- and South 24 Pargana districts of West Bengal; Bhadrak district of Odisha; Kanchipuram, Thanjavur, Nagapattinam and Thoothukudi districts of Tamil Nadu; Dakhsin Kannada and Udupi districts of Karnataka; and in <i>Penaeus monodon</i> from Bhadrak district of Odisha; East Midnapur, North 24- and South 24 Paraganas districts of West Bengal on basis of level III diagnosis.
3	IHHNV was reported from <i>Penaeus monodon</i> in Nagapattinam district of Tamil Nadu.

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

The Prevention and Control of Infectious and Contagious Diseases in Animals Act, 2009 has been suitably amended to cover aquatic animal diseases vide the Government of India Notifications No. S.O. 995(E) and No. S.O. 996(E) dated 1<sup>st</sup> April, 2014.

Country: JAPANPeriod: July - September 2015

Item	Disease status <sup>at</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	July	August	September		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000	I	
2. Infectious haematopoietic necrosis	+	+	+	I,II,III	1
3. Spring viraemia of carp (SVC)	0000	0000	0000	I	
4. Viral haemorrhagic septicaemia (VHS)	-(2015)	-(2015)	-(2015)	I	
5. Infection with <i>Aphanomyces invadans</i> (EUS)	-(2014)	-(2014)	-(2014)	I	
6. Red seabream iridoviral disease (RSID)	+	+	+	II,III	2
7. Koi herpesvirus disease (KHV)	+	+()	+	III	3
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	0000	0000	0000	I	
9. Viral encephalopathy and retinopathy	-(2015)	-(2015)	+	III	4
10. Enteric septicaemia of catfish	-(2010)	-(2010)	-(2010)	I	
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	0000	0000	0000	I	
2. Infection with <i>Perkinsus olseni</i>	-(2007)	-(2007)	-(2007)	I	
3. Infection with abalone herpesvirus	0000	0000	0000	I	
4. Infection with <i>Xenohaliotis californiensis</i>	+?()	+?()	-(2015)	III	5
<b>Non OIE-listed diseases</b>					
5. Infection with <i>Marteilioides chungmuensis</i>	-(2014)	-(2014)	-(2014)	I	
6. Acute viral necrosis (in scallops)	0000	0000	0000	I	
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000	I	
2. White spot disease (WSD)	+()	+()	-(2015)	III	6
3. Yellowhead disease (YHD)	0000	0000	0000	I	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000	I	
5. Infectious myonecrosis (IMN)	0000	0000	0000	I	
6. White tail disease (MrNV)	0000	0000	0000	I	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	I	
<b>Non OIE-listed diseases</b>					
8. <i>Monodon</i> slow growth syndrome	0000	0000	0000	I	
9. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	I	
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	-(2012)	-(2012)	-(2012)	I	
2. Infection with <i>Batrachochytrium dendrobatidis</i>	-(2009)	-(2009)	-(2009)	I	
<b>ANY OTHER DISEASES OF IMPORTANCE</b>					
1.					
2.					

**DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup>  
LISTED BY THE OIE**

**Finfish:** Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.

**Molluscs:** Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.

**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).

**NOT LISTED BY THE OIE**

**Finfish:** Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	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
+()	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	<p><b>Infectious haematopoietic necrosis (IHN)</b></p> <ol style="list-style-type: none"> <li><b>Reported in</b> 11 prefectures;</li> <li><b>Species affected</b> – Amago (<i>Onchorynchus rhodorus</i>), masou (<i>O. masou</i>), rainbow trout (<i>O. mykiss</i>), rainbow trout (4n) x brown trout (<i>Salmo trutta</i>), Iwana (<i>Salvelinus leucomaensis</i>);</li> <li><b>Disease characteristics</b> – mortality; pale gills, liver and kidney (anemia); threadbare fins; exophthalmia; petechial haemorrhages internally and externally; enlargement of pancreas and kidney; ulcer;</li> <li><b>Pathogen</b> – Infectious haematopoietic necrosis virus;</li> <li><b>Mortality rate</b> – 0.9-30%;</li> <li><b>Economic loss</b> –;</li> <li><b>Geographic extent</b> – Honshu;</li> <li><b>Preventive/control measures</b> – disinfection of equipment; early harvest; feed restriction; movement control; isolation of infected fish;</li> <li><b>Laboratory confirmation</b> – gross clinical observation, histopathology, PCR and/or isolation of the virus by prefectural research laboratories or Hokkaido University;</li> <li><b>Publications</b> – None.</li> </ol>

<p>2</p>	<p><b>Red seabream iridoviral disease (RSID)</b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in</b> 8 prefectures;</li> <li>2. <b>Species affected</b> – Greater amberjack (<i>Seriola dumerili</i>), chicken grunt (<i>Parapristipoma trilineatum</i>), red sea bream (<i>Pagrus major</i>), striped jack (<i>Pseudocaranx dentex</i>), North Pacific Bluefin tuna (<i>Thunnus orientalis</i>);</li> <li>3. <b>Disease characteristics</b> – mortality; lethargy; enlargement of spleen; pale gills; petechial haemorrhages in the gills; threadbare body;</li> <li>4. <b>Pathogen</b> – Red seabream iridovirus;</li> <li>5. <b>Mortality rate</b> – 0.08-36%;</li> <li>6. <b>Economic loss</b> –;</li> <li>7. <b>Geographic extent</b> – Honshu, Shikoku and Kyushu;</li> <li>8. <b>Preventive/control measures</b> – removal of dead fish, feed restriction, early harvest, movement control;</li> <li>9. <b>Laboratory confirmation</b> – histopathology, PCR or immunofluorescence antibody test by prefectural or fisheries cooperative research laboratory;</li> <li>10. <b>Publications</b> – None.</li> </ol>
<p>3</p>	<p><b>Koi herpesvirus disease (KHV)</b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in</b> 5 prefectures;</li> <li>2. <b>Species affected</b> – Koi carp and common carp (<i>Cyprinus carpio</i>);</li> <li>3. <b>Disease characteristics</b> – mortality, pale gills, exophthalmia;</li> <li>4. <b>Pathogen</b> – Koi herpesvirus;</li> <li>5. <b>Mortality rate</b> – 18-69%;</li> <li>6. <b>Economic loss</b> –;</li> <li>7. <b>Geographic extent</b> – Honshu;</li> <li>8. <b>Preventive/control measures</b> – movement control, culling of infected fish, disinfection of ponds, suspension of release of rearing water;</li> <li>9. <b>Laboratory confirmation</b> – PCR by National Research Institute of Aquaculture, Japan Fisheries Resource Conservation Association and/or prefectural research laboratories;</li> <li>10. <b>Publications</b> – website of Ministry of Agriculture, Forestry and Fisheries (MAFF) and prefectures.</li> </ol>
<p>4</p>	<p><b>Viral encephalopathy and retinopathy</b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in</b> 2 prefectures;</li> <li>2. <b>Species affected</b> – seven-band grouper (<i>Epinephelus septemfasciatus</i>), North Pacific Bluefin tuna (<i>Thunnus orientalis</i>);</li> <li>3. <b>Disease characteristics</b> – mortality, distended abdomen;</li> <li>4. <b>Pathogen</b> – Betanodavirus;</li> <li>5. <b>Mortality rate</b> – 1-80%;</li> <li>6. <b>Economic loss</b> –;</li> <li>7. <b>Geographic extent</b> – Honshu;</li> <li>8. <b>Preventive/control measures</b> – movement control;</li> <li>9. <b>Laboratory confirmation</b> – PCR or RT-PCR by prefectural research laboratory;</li> <li>10. <b>Publications</b> – None.</li> </ol>



5	<p><b>Infection with <i>Xenohaliotis californiensis</i></b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in</b> 2 prefectures;</li> <li>2. <b>Species affected</b> – <i>Haliotis discus hannai</i>, <i>Haliotis diversicolor diversicolor</i>;</li> <li>3. <b>Disease characteristics</b> – none;</li> <li>4. <b>Pathogen</b> – <i>Xenohaliotis californiensis</i>;</li> <li>5. <b>Mortality rate</b> – 0%;</li> <li>6. <b>Economic loss</b> –;</li> <li>7. <b>Geographic extent</b> – Honshu;</li> <li>8. <b>Preventive/control measures</b> – culling infected broodstock;</li> <li>9. <b>Laboratory confirmation</b> – PCR by National Research Institute of Aquaculture, Japan Fisheries Resource Conservation Association or the prefectural research laboratory;</li> <li>10. <b>Publications</b> – None.</li> </ol>
6	<p><b>White spot disease (WSD)</b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in</b> 2 prefectures;</li> <li>2. <b>Species affected</b> – Kuruma prawn (<i>Marsupenaeus japonicus</i>);</li> <li>3. <b>Disease characteristics</b> – none;</li> <li>4. <b>Pathogen</b> – White spot syndrome virus;</li> <li>5. <b>Mortality rate</b> – 0.2-29%;</li> <li>6. <b>Economic loss</b> –;</li> <li>7. <b>Geographic extent</b> – Honshu and Kyushu;</li> <li>8. <b>Preventive/control measures</b> – culling of infected shrimps; disinfection of ponds, removal of dead shrimps;;</li> <li>9. <b>Laboratory confirmation</b> – PCR by prefectural research laboratories;</li> <li>10. <b>Publications</b> – None.</li> </ol>

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

Country: **KOREA, REPUBLIC OF**

 Period: **July - September 2015**

Item	Disease status <sup>at</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	July	August	September		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	-	-	-	III	
3. Spring viraemia of carp (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	-	-	-	III	
5. Infection with <i>Aphanomyces invadans</i> (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease (RSID)	-	+	+	III	1
7. Koi herpesvirus disease (KHV)	+	-	-	III	2
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	0000	0000	0000		
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>	-	-	-	III	
3. Infection with abalone herpes-like virus	0000	0000	0000		
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
5. Infection with <i>Marteilioides chungmuensis</i>	-	-	-	III	
6. Acute viral necrosis (in scallops)	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	-	-	-	III	
3. Yellowhead disease (YHD)	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-	-	-	III	
5. Infectious myonecrosis (IMN)	-	-	-	III	
6. White tail disease (MrNV)	0000	0000	0000		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
8. <i>Monodon</i> slow growth syndrome	0000	0000	0000		
9. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
<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.					

<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infectious salmon anaemia; Infection with <i>Gyrodactylus salaris</i>.  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</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>			
+	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>RSID</b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in:</b> Tongyeong-si, Geoje-si, Gyeongsandam-do/Yeosu-si and Jeollanam-do from Augst to September;</li> <li>2. <b>Species affected</b> – Rock bream (<i>Oplegnathus fasciatus</i>), seabass (<i>Lateolabrax japonicus</i>);</li> <li>3. <b>Clinical signs</b> – severe anaemia, enlargement of spleen;</li> <li>4. <b>Pathogen</b> – Red seabream iridovirus;</li> <li>5. <b>Mortality rate</b> – low to high,</li> <li>6. <b>Economic loss</b> – 30/farm to 130,000/farm;</li> <li>7. <b>Geographic extent</b> – limited to few areas;</li> <li>8. <b>Control measures</b> – prohibition of movement, disinfection of equipment and facilities;;</li> <li>9. <b>Laboratory confirmation</b> – PCR and sequencing by National Fisheries Research and Development Institute (NFRDI);</li> <li>10. <b>Publications</b> – None.</li> </ol>
2	<p><b>KHV</b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in:</b> Kimcheon-si and Gyeongsangbuk-do in July;</li> <li>2. <b>Species affected</b> – crucian carp (<i>Carassius carassius</i>);</li> <li>3. <b>Clinical signs</b> –;</li> <li>4. <b>Pathogen</b> – Koi herpesvirus;</li> <li>5. <b>Mortality rate</b> –,</li> <li>6. <b>Economic loss</b> –</li> <li>7. <b>Geographic extent</b> – limited to one farm;</li> <li>8. <b>Control measures</b> – prohibition of movement, disinfection of equipment and facilities;;</li> <li>9. <b>Laboratory confirmation</b> – PCR method and sequencing by National Fisheries Research and Development Institute (NFRDI);</li> <li>10. <b>Publications</b> – None.</li> </ol>

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

Country: **MYANMAR**

 Period: **July - September 2015**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	July	August	September		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	***	***	***		
4. Viral haemorrhagic septicaemia (VHS)	***	***	***		
5. Infection with <i>Aphanomyces invadans</i> (EUS)	***	***	***		
6. Red seabream iridoviral disease (RSID)	***	***	***		
7. Koi herpesvirus disease (KHV)					
<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. Infection with abalone herpesvirus	/	/	/		
4. Infection with <i>Xenohaliotis californiensis</i>	/	/	/		
<b>Non OIE-listed diseases</b>					
5. Infection with <i>Marteilioides chungmuensis</i>	/	/	/		
6. Acute viral necrosis (in scallops)	/	/	/		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	-	-	-	III	1
2. White spot disease (WSD)	-	-	-	III	
3. Yellowhead disease (YHD)	-	-	-	III	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	***	***	***		
5. Infectious myonecrosis (IMN)	***	***	***		
6. White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis (NHP)	***	***	***		
<b>Non OIE-listed diseases</b>					
8. <i>Monodon</i> slow growth syndrome	***	***	***		
9. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
<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. Parasitic disease					2
2. Bacterial disease					2

**DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup>  
LISTED BY THE OIE**

**Finfish:** Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.

**Molluscs:** Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.

**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).

**NOT LISTED BY THE OIE**

**Finfish:** Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	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
+()	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	During this period, we have received 6 samples of crustaceans (2 frozen shrimp and 1 soft shell crab for export, and 3 live shrimps for import) for testing, and found that all samples were negative for WSSV, YHV and TSV.
2	Visited some fish farms in Yangon, Mandalay and Ayeyarwaddy regions during this period. Parasitic infestations ( <i>Dactylogyrus</i> spp; <i>Trichodina</i> spp., and <i>Sporozoa</i> .) and bacterial disease ( <i>Streptococcus</i> sp.) were found in some farms due to poor water quality.
3	

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

Country: **PHILIPPINES**

 Period: **July - September 2015**

Item	Disease status <sup>at</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	July	August	September		
<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 (SVC)	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with <i>Aphanomyces invadans</i> (EUS)	-(2002)	-(2002)	-(2002)	I	1
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	0000	0000	0000	III	
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	-(2008)	-(2008)	-(2008)	III	
9. Viral encephalopathy and retinopathy	+	+	+	III	2
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. Infection with abalone herpesvirus	****	****	****		
4. Infection with <i>Xenohaliotis californiensis</i>	****	****	****		
<b>Non OIE-listed diseases</b>	0000	0000	0000		
5. Infection with <i>Marteilioides chungmuensis</i>					
6. Acute viral necrosis (in scallops)	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>	****	****	****		
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000	III	3
2. White spot disease (WSD)	+	+	+	III	4
3. Yellowhead disease (YHD)	-(1999)	-(1999)	-(1999)	III	5
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	+	+	+	III	6
5. Infectious myonecrosis (IMN)	0000	0000	0000	III	7
6. White tail disease (MrNV)	0000	0000	0000	III	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	III	8
<b>Non OIE-listed diseases</b>					
8. <i>Monodon</i> slow growth syndrome	****	****	****		
9. Acute hepatopancreatic necrosis disease (AHPND)	+ ( )	+ ( )	+ ( )	III	9
<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> Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with <i>Gyrodactylus salaris</i>.  <b>Molluscs:</b> Infection with <i>Bonamia ostreae</i>; <i>Marteilia refringens</i>; <i>Perkinsus marinus</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>			
+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	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
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	Three hundred sixty one (361) samples of <i>Anguilla spp.</i> were negative for <b>Infection with <i>Aphanomyces invadans</i> (EUS)</b> by gross morphological examination. Samples were from Laguna, Butuan, Agusan del Norte, Antipolo City and Bulacan. Examinations were conducted by the Bureau of Fisheries and Aquatic Resources (BFAR), Central Office Fish Health Laboratory.
2	Sixty five (65) samples of <i>Epinephelus spp.</i> , <i>Trachinotus spp.</i> , <i>T.blochii</i> and <i>L.calcarifer</i> were analyzed using PCR test. Twenty (18 <i>Epinephelus spp.</i> , 1 <i>T.blochii</i> and 1 <i>L.calcarifer</i> ) samples showed positive results for <b>Viral Encephalopathy and Retinopathy</b> . The positive samples were collected from Camarines Norte and Iloilo. Examinations were conducted by BFAR Central Office and SEAFDEC/AQD Laboratories.
3	Two hundred sixty seven (267) samples (201 <i>P.vannamei</i> , 57 <i>P.monodon</i> and 9 crabs) of different stages were analyzed using PCR test. All samples showed negative results for <b>Taura Syndrome</b> . The samples were collected from Davao del Sur, Misamis Occidental, Lanao del Norte, Pangasinan, Batangas, Bataan, Camarines Sur, Oriental Mindoro, Cagayan, Sarangani Province, Iloilo, Aklan, Negros Oriental, Cebu, Davao Oriental, Zambales, Maguindanao, Zamboanga Sibugay, Zamboanga del Norte, Zamboanga del Sur, Pagadian City and Bohol. Examinations were conducted by BFAR Central Office and BFAR Region V Laboratories.
4	Nine hundred seventy seven (977) samples of <i>P.vannamei</i> , <i>P.monodon</i> , crab, annelids and oysters of different stages (fry, juvenile, adult and brood stock) were tested using PCR. Forty four (44) were positive for <b>White Spot Syndrome Virus</b> . The positive samples were from Lanao del Norte, Iloilo, Misamis Occidental, Camarines Sur, Davao del Sur, Cagayan, Cebu, Sarangani Province, Davao Oriental, Zamboanga Sibugay, Bohol, Cebu and Zamboanga City. Examinations were conducted by BFAR Central Office, BFAR Region III, BFAR Region V, BFAR Region VII, BFAR Region X, BFAR Region XI, SEFDEC/AQD and Negros Prawn Producers Cooperative (NPPC) Laboratories.

5	<p>One hundred nineteen (119) samples (71 <i>P.vannamei</i>, 48 <i>P.monodon</i>) of different stages were analyzed using PCR test. All samples showed negative results for <b>Yellowhead Disease</b>. The samples were collected from Davao del Sur, Misamis Occidental, Lanao del Norte, Pangasinan, Batangas, Camarines Sur, Oriental Mindoro, Cagayan, Sarangani Province, Iloilo, Aklan, Cebu, Zambales, Maguindanao, Pagadian City, Zamboanga Sibugay, Zamboanga del Norte, Zamboanga del Sur, Ormoc City, Leyte, Bohol, Bataan and Negros Oriental. Examinations were conducted by BFAR Central Office and SEAFDEC/AQD Laboratories.</p>
6	<p>Three hundred seventy nine (379) samples of <i>P.vannamei</i>, <i>P.monodon</i>, <i>S. Serrata</i>, crab, annelids and oysters of different stages (broodstock, adult, fry and juvenile) were analyzed using PCR test. Thirty seven (16 <i>P.monodon</i>, 20 <i>P.vannamei</i> and 1 <i>S.serrata</i>) samples showed positive results for <b>Infectious hypodermal and haematopoietic necrosis (IHHN)</b>. The samples were collected from Antique, Misamis Occidental, Lanao del Norte, Batangas, Camarines Sur, Davao del Sur, Pangasinan, Cebu, Zambales, Maguindanao and Zamboanga del Norte. Examinations were conducted by BFAR Central Office, BFAR Region III and BFAR Region VII, BFAR Region X, BFAR Region XI and SEAFDEC/AQD Laboratories.</p>
7	<p>Two hundred thirty seven (237) samples (194 <i>P.vannamei</i>, 43 <i>P.monodon</i>) of different stages were analyzed using PCR test. All samples showed negative results for <b>Infectious myonecrosis (IMN)</b>. The samples were collected from Davao del Sur, Misamis Occidental, Lanao del Norte, Pangasinan, Batangas, Bataan, Camarines Sur, Oriental Mindoro, Cagayan, Sarangani Province, Iloilo, Aklan, Negros Oriental, Cebu, Davao Oriental, Zambales, Maguindanao, Zamboanga Sibugay, Zamboanga del Norte, Zamboanga del Sur, Pagadian City and Bohol. Examinations were conducted by BFAR Central Office and SEAFDEC/AQD Laboratories.</p>
8	<p>Two hundred sixty three (263) samples of <i>P.vannamei</i> and <i>P.monodon</i> of different stages were analyzed using PCR test. All samples showed negative results for <b>Necrotising hepatopancreatitis (NHP)</b>. The samples were collected from Davao del Sur, Misamis Occidental, Lanao del Norte, Pangasinan, Batangas, Bataan, Camarines Sur, Oriental Mindoro, Cagayan, Sarangani Province, Iloilo, Aklan, Negros Oriental, Cebu, Davao Oriental, Zambales, Maguindanao, Zamboanga Sibugay, Zamboanga del Norte, Zamboanga del Sur, Pagadian City and Bohol. Examinations were conducted by BFAR Central Office and Region VII, BFAR Region XI Laboratories.</p>
9	<p>Seven hundred sixty nine (769) samples of <i>P.vannamei</i>, and <i>P.monodon</i> of different stages (fry, juvenile and adult) were tested using PCR.. Sixteen (16) samples of <i>P.vannamei</i> were positive for <b>Acute Hepatopancreatic Necrosis Disease (AHPND)</b>. The positive samples were from Pampanga, Cagayan and Cebu. Examinations were conducted by BFAR Central Office, BFAR Region III, BFAR Region V, BFAR Region VII, BFAR Region X, BFAR Region XI, SEAFDEC/AQD and NPPC Laboratories.</p>

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



Country: **SINGAPORE**Period: **July - September 2015**

Item	Disease status <sup>at</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	July	August	September		
<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 (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with <i>Aphanomyces invadans</i> (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease (RSID)	(2015)	(2015)	(2015)	III	
7. Koi herpesvirus disease (KHV)	(2012)	(2012)	(2012)	III	1
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	(2014)	(2014)	(2014)	III	
9. Viral encephalopathy and retinopathy	+	(2015)	+	III	2
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. Infection with abalone herpesvirus	***	***	***		
4. Infection with <i>Xenohaliotis californiensis</i>	***	***	***		
<b>Non OIE-listed diseases</b>					
5. Infection with <i>Marteilioides chungmuensis</i>	***	***	***		
6. Acute viral necrosis (in scallops)	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	(2013)	(2013)	+	III	3
3. Yellowhead disease (YHD)	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000		
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
8. <i>Monodon</i> slow growth syndrome	***	***	***		
9. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	II	4
<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	***	***	***		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	(2015)	(2015)	+	III	5
<b>ANY OTHER DISEASES OF IMPORTANCE</b>					
1. Infectious spleen and kidney necrosis virus (ISKNV) (marine and ornamental fish)	+	(2015)	+	III	6
2. <i>Aeromonas salmonicida</i> (in goldfish)	0000	0000	0000	III	7

**DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup>**

**LISTED BY THE OIE**

**Finfish:** Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.

**Molluscs:** Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.

**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).

**NOT LISTED BY THE OIE**

**Finfish:** Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?()	Presence of the disease suspected but not confirmed in a zone
+?	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
+()	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?()	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	<p><b>Koi herpesvirus (KHV)</b> was detected in September by qPCR in diseased ornamental koi from ponds containing a mixed population of koi, tilapia and arowanas. These ponds were part of an avian exhibit within a designated quarantine premise. There were daily mortalities of 20 to 30 koi, and clinical signs included lethargy, discoloured skin, and pale, necrotic gills, with elevated ectoparasites on the fish gills observed. All 158 remaining koi and in-contact tilapia in the ponds were humanely euthanized. The exhibit owner requested to keep the remaining arowanas, which were removed into a different water body. The owner objected to drying and disinfection of the affected pond as it would cause considerable stress to the birds in the exhibit. The ponds were left empty of fish for one week, and subsequently restocked with non-susceptible species of fish.</p> <p>KHV was not detected in 45 batches of imported and local ornamental koi this quarter by qPCR. The last detection of KHV in local koi was in September 2012.</p>
2	<p><b>Viral nervous necrosis virus (VNNV)</b> was detected via RT-PCR in 1 batch of grouper in July and 2 batches of Asian seabass in September. The virus was not detected in 13 other batches of diseased marine food fish submitted this quarter.</p>
3	<p><b>Vibrio parahaemolyticus</b> was not isolated on specialised bacteria culture and lesions suggestive of Acute hepatopancreatic necrosis disease (AHPND) were not detected on histopathological examination of 13 batches of <i>Litopenaeus vannamei</i> submitted weekly by a local shrimp broodstock farm this quarter.</p>

4	<p><b>White spot syndrome virus (WSSV)</b> was detected by qPCR in a batch of imported ornamental crayfish in September from an exporter's premise. Subsequent investigations found had been exported (to Canada and the Netherlands). WSSV was also detected by qPCR in two out of three of the crayfish samples collected as part of the investigation. Affected trading partners were informed of the detection. The infected batches of crayfish were humanely culled, equipment cleaned and disinfected, before the isolation order was lifted on the premise.</p> <p>WSSV was not detected in 25 batches of shrimp and crayfish submitted from targeted surveillance programs, and in 305 <i>Litopeneus vannamei</i> submitted from a local broodstock farm this quarter.</p>
5	<p><b>Batrachochytrium dendrobatidis (Bd)</b> was detected in a batch of imported food frogs (American bull frogs) from Taiwan in September. Bd was last detected at the same farm in May 2015. The farm was advised to carry out an emergency harvest and slaughter of the frogs. The Taiwan veterinary authorities and local Importers were informed of this positive detection from the affected suppliers. All the bull frogs were humanely euthanised for food.</p>
6	<p><b>Infectious spleen and kidney necrosis virus (ISKNV)</b> was detected by PCR and histology examination in Asian Seabass, marine Tilapia and Gouper from four coastal fish farms and one off-shore land based nursery in July and September. Aquaculture extension officers have provided farmer with feedback on the viral detecton and are working with affected farms to explore options of vaccination against Iridovirus in susceptible fish species.</p>
7	<p><b>Aeromonas salmonicida</b> was not detected in 9 batches of goldfish submitted under a targeted surveillance program to meet Australia's import requirements this quarter.</p>

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

Country: VIETNAM

Period: July - September 2015

Item	Disease status <sup>at</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	July	August	September		
<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 (SVC)	0000	0000	0000		
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with <i>Aphanomyces invadans</i> (EUS)	-	-	-		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	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>	-	-	-		
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
5. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
6. Acute viral necrosis (in scallops)	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000		
2. White spot disease (WSD)	+	+	+	I, III	2
3. Yellowhead disease (YHD)	-	-	-		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000		
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
8. <i>Monodon</i> slow growth syndrome	-	-	-		
9. Acute hepatopancreatic necrosis disease (AHPND)	+	+	+	I, III	3
<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>					

**DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup>  
LISTED BY THE OIE**

**Finfish:** Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.

**Molluscs:** Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.

**Crustaceans:** Crayfish plague (*Aphanomyces astaci*).

**NOT LISTED BY THE OIE**

**Finfish:** Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	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
+()	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(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	<p><b>Enteric Septicaemia of Catfish (<i>Edwardsiella ictaluri</i>)</b></p> <p>Infection found in intensive catfish (<i>Pangasius micronema</i>, <i>P. hypophthalmus</i>) farms. The disease occurred in An Giang, Dong Thap and Hau Giang provinces.</p>
2	<p><b>White Spot Disease (WSD)</b></p> <p><b>Pathogen:</b> White spot syndrome virus (WSSV)  <b>Species affected:</b> <i>Penaeus monodon</i> and <i>Litopenaeus vannamei</i> (10-100 DOC)  <b>Name of affected area:</b> reported in 15 provinces (total area 981 ha) including Nge Anh, Ha Tinh, Quang Tri, Phu Yen, Ninh Thuan, Khanh Hoa, Ho Chi Minh, Long An, Tien Giang, Ben Tre, Tra Vinh, Kien Giang, Soc Trang, Bac Lieu and Ca Mau.  <b>Mortality rate:</b> average to high, 100% in some cases within 10 d.  <b>Clinical signs:</b> lethargic or moribund shrimps aggregated at pond surface and edges, slow to erratic swimming behavior, overall body color often reddish, minute to large (0.5-2.0 mm diameter) white inclusions embedded in the cuticle;  <b>Control measures:</b> early harvest, strict isolation of infected ponds from movement, strengthened control of transportation, disinfection of infected ponds using Calcium hypochlorite (chlorine).</p>

3	<p><b>Acute Hepatopancreatic Necrosis Disease (AHPND)</b></p> <p><b>Pathogen:</b> <i>Vibrio parahaemolyticus</i> with Phage A3</p> <p><b>Species affected:</b> <i>Penaeus monodon</i> and <i>Litopenaeus vannamei</i> (10-45 DOC)</p> <p><b>Name of affected area:</b> reported in 17 provinces and caused losses in total shrimp culture area of 3,775 ha. Affected provinces include Nghe An, Ha Tinh, Quang Binh, Quang Tri, Phu Yen, Khanh Hoa, Ho Chi Minh, Ba Ria-Vung Tau, Ninh Thuan, Long An, Tien Giang, Ben Tre, Tra Vinh, Kien Giang, Soc Trang, Bac Lieu and Ca Mau.</p> <p><b>Mortality rate:</b> could reach 95% in intensive and semi-intensive farms;</p> <p><b>Clinical signs:</b> shrimps become lethargic with soft, darkened shells, mottling of the carapace. Pathology is limited to hepatopancreas.</p> <p><b>Control measures:</b> strict isolation of infected ponds from movement and transport controls, disinfection of infected ponds using Calcium hypochlorite (chlorine).</p>
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2. New aquatic animal health regulations introduced within past six months (with effective date): None

## List of Diseases in the Asia-Pacific Quarterly Aquatic Animal Disease Report (Beginning 2015)

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 (SVC)	3. Enteric septicaemia of catfish
4. Viral haemorrhagic septicaemia (VHS)	
5. Infection with <i>Aphanomyces invadans</i> (EUS)	
6. Red seabream iridoviral disease (RSID)	
7. Koi herpesvirus disease (KHV)	
<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. Acute viral necrosis (in scallops)
3. Infection with abalone herpesvirus	
4. Infection with <i>Xenohalotis californiensis</i>	
<b>1.3 CRUSTACEAN DISEASES</b>	
<b>OIE-listed diseases</b>	<b>Non OIE-listed diseases</b>
1. Taura syndrome (TS)	1. Monodon slow growth syndrome
2. White spot disease (WSD)	2. Acute hepatopancreatic necrosis disease (AHPND)
3. Yellowhead disease (YHD)	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	
5. Infectious myonecrosis (IMN)	
6. White tail disease (MrNV)	
7. Necrotising hepatopancreatitis (NHP)	
<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>Bachtracochytrium 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. Infection with HPRdeleted or HPR0 salmon anaemia virus	1. Channel catfish virus disease
2. Infection with salmon pancreas disease virus	
3. Infection with <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>	
<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, 18<sup>th</sup> Edition, 2015.** The OIE Aquatic Animal Health Code (the Aquatic Code) sets out standards for the improvement of aquatic animal health and welfare and veterinary public health worldwide, including through standards for safe international trade in aquatic animals (amphibians, crustaceans, fish and molluscs) and their products. The health measures in the Aquatic Code should be used by the veterinary authorities of importing and exporting countries to provide for early detection, reporting and control of agents pathogenic to aquatic animals and, in the case of zoonotic diseases, for humans, and to prevent their transfer via international trade in aquatic animals and aquatic animal products, while avoiding unjustified sanitary barriers to trade. The health measures in the Aquatic Code have been formally adopted by the World Assembly of OIE Delegates, which constitutes the organisation's highest decision-making body. The 18th edition includes an updated version of the table of contents, user's guide and glossary, and revised text in the following chapters: diseases listed by the OIE, import risk analysis, control of pathogenic agents in aquatic animal feed, general obligations related to certification, certification procedures, infection with *Batrachochytrium dendrobatidis*, infection with ranavirus and infection with *Perkinsus olseni*. In addition, the text in Articles X.X.7. and X.X.11. of disease-specific chapters has been merged, and some amendments have been made in Articles 10.4.4. and 10.4.6. The 18th edition also includes two new chapters: Recommendations for surface disinfection of salmonid eggs (4.4.) and Risk analysis for antimicrobial resistance arising from the use of antimicrobial agents in aquatic animals (6.5.). The Aquatic Animal Health Code is available for free download <http://www.oie.int/en/international-standard-setting/aquatic-code/access-online/>

**OIE Manual of Diagnostic Tests for Aquatic Animals, 2015.** The purpose of this manual is to provide a uniform approach to the detection of the diseases listed in the OIE *Aquatic Animal Health Code*, so that the requirements for health certification in connection with trade in aquatic animals and aquatic animal products can be met. It includes bibliographical references and a list of the OIE Reference Laboratories for amphibian, crustacean, fish and mollusc diseases. The manual is available for free download at <http://www.oie.int/international-standard-setting/aquatic-manual/access-online/>

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Soto-Rodriguez, S.A., Gomez-Gil, B., Lozano-Olvera, R., Betancourt-Lozano, M. and Morales-Covarrubias, M.S., 2015. **Field and experimental evidence of *Vibrio parahaemolyticus* as the causative agent of acute hepatopancreatic necrosis disease of cultured shrimp (*Litopenaeus vannamei*) in Northwestern Mexico.** Applied and Environmental Microbiology, 81: 1-11.

Tran, L.H., Fitzsimmons, K., Lightner, D.V., 2014. **AHPND/EMS: From the academic science perspective to the production point of view.** Aquaculture Asia-Pacific, March/April 2014: 14-18.

Tran, L.H., Fitzsimmons, K., Lightner, D.V., 2014. **Tilapia could enhance water conditions, help control EMS in shrimp ponds.** Global Aquaculture Advocate, Jan/Feb 2014: 26-28

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**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.

+?() These symbols mean that confirmed infection/infestation is limited to one of more zones of the country, but no clinical disease.

?() These symbols mean the presence of the disease suspected but not confirmed in a zone.

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<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:

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## Notes

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