



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

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## Foreword

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### Stakeholder Consultation on Progressive Management Pathway (PMP) to Improve Aquaculture Biosecurity

Organized by Food and Agriculture Organization of the United Nations (FAO), Mississippi State University (MSU) and World Bank (WB), the consultation was held on 10-12 April 2018 at World Bank Headquarters, Washington DC. The consultation was participated by around 50 participants representing international and regional organizations, donor agencies, government and private sectors. Asia-Pacific was represented by NACA, SEAFDEC, WorldFish and ShrimpVet.



*List of organizations and institutes represented during the Consultation.*



*Participants of the Consultation.*

Dr. Arni Mathiesen (FAO), Dr. Mark Lawrence (MSU) and Dr. Xavier Vincent (WB) delivered the opening remarks and formally opened the Consultation. Important topics were presented on aquatic animal health management and biosecurity, and the need for progressive management pathway (PMP) for aquaculture biosecurity. These include:

- Drivers and pathways of aquatic animal disease emergence (Melba Reantaso)
- Health management in small-scale aquaculture: opportunities for the progressive management pathway (PMP) approach (Rohana Subasinghe)
- Effective extension services to support biosecurity systems (Larry Hanson)
- Introduction to progressive management pathway (PMP) to improve aquatic biosecurity (Keith Sumption)
- Socio-economic impacts of aquatic diseases and economic drivers (Franck Asche)

Country presentations from Chile, Norway, Philippines and South Africa (representing the government sectors) and from ABCC Brasil, Merck USA, NAQUA KSA and ShrimpVet Vietnam (representing the private sectors) were also delivered. The presentations cover topics on the implementation of aquatic biosecurity and improved aquatic animal health management.

Working group discussions were also undertaken to try to answer the following questions relating to the application of PMP in aquaculture biosecurity:

- Do the ideas of progressive management of aquatic biosecurity and a pathway for improvement meet your expectation of a system that could help to promote improvement?
- Is the principle of co-regulation (stakeholder engagement from the bottom-up) supported?
- Is the balance between public and private roles and responsibilities well captured in risk ownership?
- When is self-assessment of stages sufficient?
- When would joint assessment (country and external review) or an external assessment be valuable/advisable?
- Should countries be required to demonstrate that they fulfill the evidence of the loser stages (in the PMP)? Who should evaluate their position?
- What tools or support are needed for the national task force to apply PMP, assess progress, or undertake scientific activities?

The group was then tasked to formulate a global plan of action (GPA) including:

- Vision statement
- Develop the timescale, scope, and priorities for the GPA;
- Discuss and develop recommendation for the co-ordination arrangements, governance and oversight, and technical and scientific support;
- Discuss and develop recommendations for mobilization of funding and engagement of donors for supporting the GPA and the PMP application at national levels;
- Develop indicative timelines for the GPA.

The PMP for Aquaculture Biosecurity (PMP-AB), an extension of the "Progressive Control Pathways" (PCP), used for controlling major livestock and zoonotic diseases, focuses on building management capacity through a combined bottom-up/top-down approaches with strong stakeholder engagement to promote application of risk management at producer level as part of the national approach. The PMP-AB consists of 4 Stages which lead to a sustainable and resilient national aquaculture system. Moving from one stage to another should meet a set of minimum entry requirements and a detailed plan for implementation in the following stage must be prepared. 'Gateway passes' are usually in the form of Biosecurity Action Plan. (<http://www.fao.org/fishery/nems/41063/en>)

The consensus reached was that the PMP-AB is a useful tool. Refinement and implementation should actively engage governance authorities and industry stakeholders to ensure buy-in, best-fit for country, but a template that provides a degree of consistency between participating countries or regions. Further work includes: further development of the technical aspects of the PMP-AB, wider consensus building, initial application, and resource mobilization. A second follow-up consultation is planned. (<http://www.fao.org/fishery/nems/41063/en>)

## **Reports Received by the NACA and OIE-RRAP**

**(Officially prepared by OIE National Focal Points for Aquatic Animals/NACA National Coordinator, and submitted by OIE Delegate)**

Country: AUSTRALIA\*Period: October - December 2017

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	October	November	December		
<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)	-(2017)	-(2017)	-(2017)		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	-(2017)	-(2017)	-(2017)		3
10. Enteric septicaemia of catfish	-(2014)	-(2014)	-(2014)		4
11. Carp edema virus disease	***	***	***		
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	-(2017)	-(2017)	+?	III	5
2. Infection with <i>Perkinsus olseni</i>	+	+?	-(2017)	I	6
3. Infection with abalone herpesvirus	-(2011)	-(2011)	-(2011)		7
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. 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)	-(S.E.QLD 2017)	-(S.E.QLD 2017)	-(S.E.QLD 2017)		8
3. Yellowhead disease (YHD)	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	+	+	-(2017)	III	9
5. Infectious myonecrosis (IMN)	0000	0000	0000		
6. White tail disease (MrNV)	-(2008)	-(2008)	-(2008)		10
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	0000	0000	0000		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		
12. <i>Spiroplasma eriocheiris</i> infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	-(2008)	-(2008)	-(2008)		11
2. Infection with <i>Batrachochytrium dendrobatidis</i>	-(2016)	-(2016)	-(2016)		12
<b>ANY OTHER DISEASES OF IMPORTANCE</b>					
1. <i>Hepatopancreatitis</i> in prawns	-(2017)	-(2017)	-(2017)		13
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	<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> was not reported this period despite passive surveillance in New South Wales (last reported July 2017) and the Northern Territory (last reported May 2017), Queensland (last reported 2014), Western Australia (last reported 2013), Victoria (last reported 2012), and South Australia (last reported 2008). Passive surveillance and never reported in Tasmania. No information available this period in the Australian Capital Territory.

3	<p><b>Viral encephalopathy and retinopathy (VER)</b> was not reported this period despite passive surveillance in Queensland (last reported in September 2017) and the Northern Territory (last reported 2013), Western Australia (last reported 2013), South Australia (last reported 2010) and Tasmania (last reported 2000). Targeted surveillance and not reported this period in New South Wales (last reported 2016). Passive surveillance and never reported in Victoria. No information available this period in the Australian Capital Territory.</p>
4	<p><b>Enteric septicaemia of catfish (<i>E. ictaluri</i>)</b> was not reported this period despite passive surveillance. It was reported from clinically normal fish from a single river in Queensland (October 2014), 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 a 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.</p>
5	<p><b>Infection with <i>Bonamia exitiosa</i></b>  1. <b>Reported in</b> South Australia in December 2017, targeted surveillance;  2. <b>Species affected</b> – flat oyster (<i>Ostrea angasi</i>);  3. <b>Clinical signs</b> – none;  4. <b>Pathogen</b> – <i>Bonamia exitiosa</i>;  5. <b>Mortality rate</b> – none;  6. <b>Economic loss</b> – none;  7. <b>Geographic extent</b> – one oyster farm;  8. <b>Containment measures</b> – none;  9. <b>Laboratory confirmation</b> – qPCR, tissue smears;  10. <b>Publications</b> – nil.</p> <p><i>Bonamia exitiosa</i> is known to have occurred previously in Western Australia (last reported February 2017) and Victoria (last reported 2016). Passive surveillance and never reported in Queensland, New South Wales, Tasmania and Northern Territory. No information available for the Australian Capital Territory (no marine water responsibility).</p>
6	<p><b>Infection with <i>Perkinsus olseni</i></b>  1. <b>Reported in</b> Western Australia and South Australia in October and Western Australia in November 2017, passive surveillance;  2. <b>Species affected</b> – black lipped pearl oyster (<i>Pinctada margaritifera</i>), blacklip abalone (<i>Haliotis rubra</i>) and greenlip abalone (<i>H. laevigata</i>);  3. <b>Clinical signs</b> – light infection with Perkinsus-like organisms observed in digestive glands, weak oysters, mildly retracted mantles in Western Australia; clinical and sub-clinical signs in South Australia;  4. <b>Pathogen</b> – <i>Perkinsus olseni</i>;  5. <b>Mortality rate</b> – N/A;  6. <b>Economic loss</b> – N/A;  7. <b>Geographic extent</b> – Abrolhos Island (WA) and Taylor Island (SA);  8. <b>Containment measures</b> – none;  9. <b>Laboratory confirmation</b> – histopathology, RFTM;  10. <b>Publications</b> – nil.</p> <p><i>Perkinsus olseni</i> is known to occurred previously in Victoria (last reported 2015), Queensland (last reported 2014), and New South Wales (last reported 2005). Passive surveillance and never reported in the Northern Territory and Tasmania. No information available for the Australian Capital Territory (no marine water responsibility).</p>

7	<p><b>Infection with abalone herpesvirus (abalone viral ganglioneuritis)</b> was not reported this period despite passive surveillance in Tasmania (last reported 2011), 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 in the Australian Capital Territory (no marine water responsibility).</p>
8	<p><b>White spot disease</b> was confirmed on a farm on 1 December 2016. By February 2017, seven properties, all along the Logan River in South East Queensland, were confirmed as being affected by white spot disease. Containment was immediately implemented for all affected farms. In May 2017, destruction of stock, disposal and decontamination of ponds on all affected farms were complete, and all ponds on the affected farms will lay fallow until May 2018 to assist with the eradication of WSSV. As a result of detection of WSSV in wild crustacean movement and fishing restrictions in the Moreton Bay region have been in place to contain white spot disease and prevent new outbreaks. Surveillance outside of the movement restricted area in Queensland returned no positive test results for the last eight months. White spot disease has never been reported despite active and passive surveillance in New South Wales, South Australia, Western Australia and Northern Territory. Never reported in Victoria and Tasmania despite passive surveillance. No information available for the Australian Capital Territory (no marine water responsibility).</p>
9	<p><b>Infectious hypodermal and haematopoietic necrosis</b></p> <ol style="list-style-type: none"> <li>1. <b>Reported in</b> Queensland in October and November 2017, passive surveillance;</li> <li>2. <b>Species affected</b> – black tiger prawn (<i>Penaeus monodon</i>);</li> <li>3. <b>Clinical signs</b> – moribund prawns;</li> <li>4. <b>Pathogen</b> – IHHNV;</li> <li>5. <b>Mortality rate</b> – variable rates of mortality;</li> <li>6. <b>Economic loss</b> – N/A;</li> <li>7. <b>Geographic extent</b> – 2 farms in Northern Queensland;</li> <li>8. <b>Containment measures</b> – no water discharge, minimum 96 h water withholding period post-harvest;</li> <li>9. <b>Laboratory confirmation</b> – RT-PCR, histopathology;</li> <li>10. <b>Publications</b> – nil.</li> </ol> <p>Infectious hypodermal and haematopoietic necrosis virus is known to occur previously in 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 water responsibility) and Tasmania (susceptible species not present).</p>
10	<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>
11	<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 and New South Wales. No information available this period in the Australian Capital Territory, South Australia, Victoria and Western Australia.</p>
12	<p><b>Infection with <i>Batrachochytrium dendrobatidis</i></b> was not reported this period despite passive surveillance in Victoria (last reported October 2016), Tasmania (last reported 2013), New South Wales (last reported 2012), Western Australia (last reported 2008) and Queensland (last reported 2004). Passive surveillance and never reported from the Northern Territory. No information available this period in the Australian Capital Territory and South Australia.</p>

13	<p><b>Hepatopancreatitis</b> in prawns was not reported this period despite passive surveillance in Queensland (last reported March 2017). Passive surveillance and never reported in New South Wales. No information available in the Australian Capital Territory, Victoria, Northern Territory, South Australia, Western Australia and Tasmania.</p>
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**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Under the Biosecurity Act 2015 a Biosecurity Advice (2017/12) was announced on 30 June 2017 that trade in uncooked prawns (including marinated prawns and Australian prawns processed overseas in a non-Australian government audited supply chain) would resume under the enhanced import conditions from 7 July 2017. These prawns will be subject to strict testing requirements to ensure biosecurity risks are managed.

Queensland has implemented a new white spot biosecurity regulation that maintains movement restrictions for high-risk animals such as prawns, yabbies and marine worms out of the white spot movement restriction area. Under the new regulation an exemption now exists for low-risk species such as crabs, lobster and bugs. Fishing is also prohibited near land-based prawn farms and waterways within the movement restriction area.

Country: **CHINESE TAIPEI**

 Period: **October - December 2017**

Item	Disease status <sup>at</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<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)	-	+	+	LDCCs	1
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	+	+	+	LDCCs	2
9. Viral encephalopathy and retinopathy	+	+	+	LDCCs	3
10. Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease	***	***	***		
<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>	***	***	***		
5. Infection with <i>Bonamia ostreae</i>	***	***	***		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	***	***	***		
7. Acute viral necrosis (in scallops)	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	-	-	-		
2. White spot disease (WSD)	+	-	+	LDCCs	4
3. Yellowhead disease (YHD)	-	-	-		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-	+	-	LDCCs	5
5. Infectious myonecrosis (IMN)	***	***	***		
6. White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis (NHP)	***	***	***		
8. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
9. Crayfish plague	-	-	-		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		
12. <i>Spiroplasma eriocheiris</i> infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		

AMPHIBIAN DISEASES					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	-	-	-		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	***	***	***		
<b>ANY OTHER DISEASES OF IMPORTANCE</b>					

<b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>			
<b>LISTED BY THE OIE</b>			
<b>Finfish:</b> Infection with 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			
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	1. Changhua County, Pingtung County, Yunlin County. 3 outbreak reports from 3 farms. 2. Date: (1) Nov 30, (2) Dec 8, (3) Dec 11. 3. Species: (1), (2), (3) <i>Cyprinus carpio</i> . 4. Mortality rate: low. 5. Total number of death: (1) 100/100; (2) 0/1000; (3) 150/300.

2	<p>1. Kaohsiung City, Pingtung County, Chiayi County. 42 outbreak reports from 28 farms.</p> <p>2. Date: (1), (2) Oct 1; (3) Oct 12; (4) Oct 14; (5), (6), (7), (8), (9) Oct 29; (10), (11) Oct 31; (12), (13) Nov 1; (14), (15) Nov 2; (16) Nov 9; (17) Nov 11; (18) Nov 21; (19), (20), (21), (22), (23) Nov 23; (24), (25) Nov 25; (26) Dec 1; (27) Dec 2; (28) Dec 8; (29) Dec 12; (30) Dec 14; (31), (32) Dec 19; (33), (34), (35) Dec 21; (36), (37), (38), (39), (40) Dec 24; (41), (42) Dec 26.</p> <p>3. Species: (1), (2), (3), (4), (9), (10), (12), (18), (21), (39), (40) <i>Epinephelus malabaricus</i>; (5), (6), (11), (13), (15), (16), (19), (23), (25), (27), (29), (30), (31), (32), (33), (34), (35), (36), (37), (38), (42) <i>Lates calcarifer</i>; (7), (8), (20), (24), (41) <i>Epinephelus fuscoguttatus</i> x <i>Epinephelus lanceolatus</i>; (14), (17), (22), (26), (28) <i>Epinephelus lanceolatus</i>.</p> <p>4. Mortality rate: low.</p> <p>5. Total number of death: (1), (2), (3), (7), (8), (12), (18), (24), (25), (28), (39), (40), (41) 0/10000; (4), (21) 0/12000; (5), (6), (11), (13), (16), (23), (31), (32), (33) 0/40000; (9) 0/20000; (10) 0/45000; (14), (22) 0/500; (15), (29), (34), (36) 0/30000; (17) 0/800; (19) 0/35000; (20), (26) 0/1000; (27), (42) 0/25000; (30) 0/100000; (35) 0/36000; (37) 0/26000; (38) 0/31000.</p>
3	<p>1. Kaohsiung City, Pingtung County, Yilan County. 46 outbreak reports from 33 farms.</p> <p>2. Date: (1), (2), (3) Oct 4; (4) Oct 13; (5) Oct 14; (6), (7) Oct 21; (8) Oct 27; (9) Oct 29; (10) Oct 31; (11) Nov 1; (12), (13), (14) Nov 2; (15) Nov 3; (16) Nov 9; (17) Nov 21; (18), (19), (20), (21), (22) Nov 23; (23), (24), (25), (26), (27), (28), (29) Nov 25; (30), (31) Dec 1; (32), (33) Dec 2; (34) Dec 9; (35), (36), (37), (38), (39) Dec 19; (40), (41) Dec 21; (42) Dec 23; (43) Dec 24; (44), (45), (46) Dec 26.</p> <p>3. Species: (1), (5), (6), (7), (12), (19), (20), (24), (41) <i>Epinephelus malabaricus</i>; (2), (3), (8), (9), (10), (11), (14), (16), (17), (18), (21), (23), (25), (26), (27), (28), (29), (30), (31), (32), (33), (34), (35), (37), (38), (39), (42), (44), (45) <i>Epinephelus fuscoguttatus</i> x <i>Epinephelus lanceolatus</i>; (4) <i>Epinephelus coioides</i>; (13) <i>Lates calcarifer</i>; (15) <i>Cromileptes altivelis</i>; (22), (36), (40), (43) <i>Epinephelus lanceolatus</i>; (46) <i>Micropterus salmoides</i>.</p> <p>4. Mortality rate: low.</p> <p>5. Total number of death: (1), (2), (5), (7), (8), (14), (16), (18), (20), (21), (23), (24), (25), (26), (27), (28), (34), (35), (37), (41), (45), (46) 0/10000; (3), (11) 0/8000; (4) 0/250000; (6), (17), (22), (36), (38), (40) 0/1000; (9), (31) 0/20000; (10), (30) 0/50000; (12) 0/15000; (13) 0/25000; (15) 100/3000; (19) 0/11000; (29) 0/700; (32) 0/800; (33), (43) 0/500, (39) 0/1500; (42) 0/1200; (44) 0/40000.</p>
4	<p>1. Chiayi County, Pingtung County. 2 outbreak reports from 2 farms.</p> <p>2. Date: (1) Oct 19; (2) Dec 9.</p> <p>3. Species: (1) <i>Litopenaeus vannamei</i>; (2) Ornamental shrimps.</p> <p>4. Mortality rate: low.</p> <p>5. Total number of death: (1) 0/1000000; (2) 0/10000.</p>
5	<p>1. Changhua County. 1 outbreak reports from 1 farm.</p> <p>2. Date: (1) Nov 30.</p> <p>3. Species: (1) <i>Litopenaeus vannamei</i>.</p> <p>4. Mortality rate: high.</p> <p>5. Total number of death: (1) 1000000/1000000.</p>

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

Country: **HONG KONG SAR, CHINA\***

 Period: **October - December 2017**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<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	
11. Carp edema virus disease	***	***	***		
<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	
5. Infection with <i>Bonamia ostreae</i>	***	***	***		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000	II	
7. 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 (IHNN)	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)	***	***	***	II	
8. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***	II	
9. Crayfish plague	0000	0000	0000	II	
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		
12. <i>Spiroplasma eriocheiris</i> infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	(1 Apr 2017)	(1 Apr 2017)	(1 Apr 2017)	III	
2. Infection with <i>Batrachochytrium dendrobatidis</i>	0000	0000	0000	III	
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> 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	
2	
3	

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

Country: **INDIA\***

 Period: **October - December 2017**

Item	Disease status <sup>at</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<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		
11. Carp edema virus disease	-	-	-		
<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>	+	+	+	II,III	1
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. 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)	0000	0000	0000		3
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-	-	-	III	
5. Infectious myonecrosis (IMN)	-	-	-		
6. White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	+	+	+	III	4
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		
12. <i>Spiroplasma eriocheiris</i> infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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. Infection with Tilapia Lake Virus	+( )	-	+( )	III	5
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>																													
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<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>Infection with <i>Perkinsus olseni</i></b> was reported in farmed samples of <i>Perna viridis</i> from Kasaragod district of Kerala. It is also reported in wild samples of <i>P. viridis</i> from Kannur and Kasaragod districts of Kerala; Kundapura district of Karnataka; South Goa district of Goa; Ratnagiri district of Maharashtra; and <i>Pinctada fucata</i> from Tuticorin district of Tamil Nadu; <i>Gefrarium tumidum</i> in Tuticorin district of Tamil Nadu; <i>Paphia malabarica</i> from Alappuzha and Kasaragode districts of Kerala, Tuticorin district in Tamil Nadu, Kundapura and Karwar districts of Karnataka, Ratnagiri district of Maharashtra; <i>Saccostrea cucullata</i> in Kundapura district of Karnataka; <i>Crassostrea madrasensis</i> from South Goa district of Goa; <i>Placuna placenta</i> in Tuticorin district of Tamil Nadu, South Goa district of Goa.</p>
2	<p><b>White spot disease</b> was reported in <i>Litopenaeus vannamei</i> from Nagapattinam and Villupuram districts of Tamil Nadu; Srikakulam, Vizianagram, Visakhapatnam, East Godavari and West Godavari districts of Andhra Pradesh; Raigad district of Maharashtra; Dakshina Kannada district of Karnataka and Navsari district of Gujarat.</p>

3	<b>Infection with yellow head virus</b> genotype 1 has never been reported from India.
4	<b>Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i></b> was reported in <i>Litopenaeus vannamei</i> from East Godavari, West Godavari and Vizianagram districts of Andhra Pradesh; Nagapattinam, Thoothukudi, Thanjavur, Villupuram and Pudukkottai districts of Tamil Nadu; Thane district of Maharashtra; Navsari district of Gujarat; Udupi and Uttara Kannada districts of Karnataka.
5	<b>Tilapia lake virus</b> disease was reported from Thrissur district of Kerala.

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

Country: **INDONESIA\***

 Period: **January - March 2017**

Item	Disease status <sup>al</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		
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)	***	***	***		
7. Koi herpesvirus disease (KHV)	+()	-	+()	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	-	-	+()	II	4
11. Carp edema virus disease	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. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	-	-	-		
2. White spot disease (WSD)	+()	+()	+()	III	5
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	+()	-	+()	III	6
5. Infectious myonecrosis (IMN)	+()	-	+()	III	7
6. White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	0000	0000	0000		
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		
12. <i>Spiroplasma eriocheiris</i> infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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> 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>																											
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**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 (KHV)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> January-West Java (Sukabumi City, Cikole subdistrict); March-West java (Sukabumi City, Cikole amd Purwakarta District, Jatihulur Subdistrict)</li> <li>2) <b>Species affected:</b> Common carp and Koi carp (<i>Cyprinus carpio</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Gill necrosis, lethargy, ulcers on fish body.</li> <li>4) <b>Pathogen (isolated,sero-typed):</b> Koi herpesvirus</li> <li>5) <b>Mortality rate (high,low; decreasing/increasing):</b> 30-60%</li> <li>6) <b>Death toll (economic loss, etc.):</b></li> <li>7) <b>Size of infected areas or names of infected areas:</b> West Java</li> <li>8) <b>Preventive/Control measures taken:</b> Immunostimulant (Vitamin C), vaccination, water quality management, early harvest.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Freshwater Aquaculture, Sukabumi</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

<p>2</p>	<p><b>Grouper iridoviral disease (GIV)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> January-Riau Island (Batam City, Bulang Subdistrict); February-Riau Island (Batam City, Galang Subdistrict)</li> <li>2) <b>Species affected:</b> groupers.</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Open operculum (deformity), mass mortality.</li> <li>4) <b>Pathogen (isolated.sero-typed):</b> Iridovirus</li> <li>5) <b>Mortality rate (high.low; decreasing/increasing):</b> 10-30%</li> <li>6) <b>Death toll (economic loss, etc.):</b></li> <li>7) <b>Size of infected areas or names of infected areas:</b> Riau Island</li> <li>8) <b>Preventive/Control measures taken:</b> Immunostimulant (Vitamin C), vaccination, water quality management, biosecurity.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Freshwater Aquaculture, Batam.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>
<p>3</p>	<p><b>Viral encephalopathy and retinopathy (VER)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> January-Riau Island (Batam City: Bulang Subdistrict; Natuna District: Pulau Tiga Subdistrict); February-NTB Island (Lombok District: Sekotong Subdistrict), West Java (Karawang District: Cilebar Subdistrict); March-Lampung (Pesawaran District: Teluk Pandan Subdistrict; South Lampung: Kalianda Subdistrict), Maluku (Ambon City: Baguala Subdistrict)</li> <li>2) <b>Species affected:</b> groupers, barramundi (larvae and juveniles).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Open operculum, mass mortality, pale liver, hypertrophied kidney.</li> <li>4) <b>Pathogen (isolated.sero-typed):</b> Nodavirus</li> <li>5) <b>Mortality rate (high.low; decreasing/increasing):</b> 30-60%</li> <li>6) <b>Death toll (economic loss, etc.):</b></li> <li>7) <b>Size of infected areas or names of infected areas:</b> Riau Island, NTB Island, West Java, Lampung and Maluku</li> <li>8) <b>Preventive/Control measures taken:</b> Immunostimulant (Vitamin C), biosecurity, water quality management.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Freshwater Aquaculture, Batam, Lombok and Lampung.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

<p>4</p>	<p><b>Enteric septicaemia of catfish</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> March-Sumatera (Ogan District: Belitang Subdistrict), Kalimantan (Banjar District: Martapura Subdistrict)</li> <li>2) <b>Species affected:</b> Catfish (<i>Pangasius</i> sp.).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Mass mortality, abnormal swimming behaviour, anorexia, lethargy and haemorrhage.</li> <li>4) <b>Pathogen (isolated.sero-typed):</b> <i>Edwardsiella ictaluri</i></li> <li>5) <b>Mortality rate (high.low; decreasing/increasing):</b> up to 50%</li> <li>6) <b>Death toll (economic loss, etc.):</b></li> <li>7) <b>Size of infected areas or names of infected areas:</b> Sumatera and Kalimantan</li> <li>8) <b>Preventive/Control measures taken:</b> Immunostimulant (Vitamin C), vaccination, water quality management.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Center for Freshwater Sei Galam; Center for Freshwater Mandiangin</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>
<p>5</p>	<p><b>White spot disease (WSD)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> January-Central Java (Jepara District; Kendal District:Cepiring Subdistrict), NTB Island (Sumbawa District: Sumbawa Subdistrict), West Java (Karawang District: Cilebar Subdistrict), Banten (Serang District: Pontang Subdistrict); February-Central Java (Jepara District: Jepara Subdistrict), South Sulawesi (Takalar District: Sanrobone Subdistrict), East Java (Situbondo District: Kendit Subdistrict), West Java (Karawang District: Cilebar Subdistrict); March-South Sulawesi (Bone District: Tanete Riattang Subdistrict); West Java (Karawang District: Cilebar Subdistrict), Banten (Pandeglang District: Carita Subdistrict).</li> <li>2) <b>Species affected:</b> Shrimp (<i>Penaeus vannamei</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Loss of appetite, gill necrosis, white patches in carapace (observed phytoplankton bloom and dead fish on ponds).</li> <li>4) <b>Pathogen (isolated.sero-typed):</b> White spot baculovirus complex</li> <li>5) <b>Mortality rate (high.low; decreasing/increasing):</b> up to 60%</li> <li>6) <b>Death toll (economic loss, etc.):</b> Central Java (Jepara District=US\$4,998.00; Kendal District=US\$1,345.00), West Java (Karawang District=US\$1,922.00), East Java (Situbondo Distrit=US\$22.00)</li> <li>7) <b>Size of infected areas or names of infected areas:</b> Central Java, NTB Island, West Java, East Java, South Sulawesi, Banten.</li> <li>8) <b>Preventive/Control measures taken:</b> Water quality management, early harvest, eradication.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Brackishwater Aquaculture Jepara; Center for Brackishwater Aquaculture Situbondo; Center for Brackishwater Aquaculture Takalar; Center for Mariculture Lombok; BLUPPB Karawang; Center for Fish Disease and Environmental Investigation Serang, Banten.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

6	<p><b>Infectious hypodermal and haematopoietic necrosis (IHHN)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> January-East Java (Situbondo District: Banyuputih Subdistrict), West Java (Subang District: Patokbeusi Subdistrict); March-Central Java (Tegal District: Warureja Subdistrict)</li> <li>2) <b>Species affected:</b> Shrimp (<i>Penaeus vannamei</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Loss of appetite, gill necrosis, white patches in carapace (observed phytoplankton bloom and dead fish on ponds).</li> <li>4) <b>Pathogen (isolated, sero-typed):</b> Parvovirus</li> <li>5) <b>Mortality rate (high, low; decreasing/increasing):</b> 30-70%</li> <li>6) <b>Death toll (economic loss, etc.):</b> East Java: Situbondo district=US\$615.</li> <li>7) <b>Size of infected areas or names of infected areas:</b> East Java, West Java, Central Java</li> <li>8) <b>Preventive/Control measures taken:</b> Biosecurity, water quality management, feed quality management.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Center for Brackishwater Situbondo; Center for Fish Disease and Environmental Investigation Serang, Banten; BPIU2K Karangasem.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>
7	<p><b>Infectious myonecrosis (IMN)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> January-NTB Island (Sumbawa District), West Java (Subang District: Patokbeusi Subdistrict); March-East Java (Situbondo District), Banten (Pandeglang District: Carita Subdistrict)</li> <li>2) <b>Species affected:</b> Shrimp (<i>Penaeus vannamei</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Loss of appetite, gill necrosis, white patches in carapace (observed phytoplankton bloom and dead fish on ponds).</li> <li>4) <b>Pathogen (isolated, sero-typed):</b> Totiviridae</li> <li>5) <b>Mortality rate (high, low; decreasing/increasing):</b> &lt; 30%</li> <li>6) <b>Death toll (economic loss, etc.):</b> -.</li> <li>7) <b>Size of infected areas or names of infected areas:</b> NTB Island, West Java, East Java</li> <li>8) <b>Preventive/Control measures taken:</b> Imunostimulant (Vitamin C), vaccination, water quality management.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Freshwater Aquaculture (Sukamundi, Lombok, Karangasem and Serang).</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

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

Country: **INDONESIA\***

 Period: **April - June 2017**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	April	May	June		
<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)	***	***	***		
7. Koi herpesvirus disease (KHV)	+()	-	+()	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	+()	-	+()	II	4
11. Carp edema virus disease	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. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with <i>Xenohalictis californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	-	-	-		
2. White spot disease (WSD)	+()	+()	+()	III	5
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-	-	-		
5. Infectious myonecrosis (IMN)	+()	-	+()	III	6
6. White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	0000	0000	0000		
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		
12. <i>Spiroplasma eriocheiris</i> infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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> 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> <table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 15%; text-align: center;">+</td> <td style="width: 45%;">Disease reported or known to be present</td> <td style="width: 10%; text-align: center;">?()</td> <td style="width: 30%;">Presence of the disease suspected but not confirmed in a zone</td> </tr> <tr> <td style="text-align: center;">+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td style="text-align: center;">***</td> <td>No information available</td> </tr> <tr> <td style="text-align: center;">?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td style="text-align: center;">0000</td> <td>Never reported</td> </tr> <tr> <td style="text-align: center;">+()</td> <td>Occurrence limited to certain zones</td> <td style="text-align: center;">-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td style="text-align: center;">+?()</td> <td>Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease</td> <td style="text-align: center;">(year)</td> <td>Year of last occurrence</td> </tr> </tbody> </table>				+	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
+	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	<p><b>Koi herpesvirus disease (KHV)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> April-West Java (Sukabumi City, Cikole subdistrict), South Kalimantan (Kotabaru District: Pulausembilan Subdistrict; Balangan District: Lampihong Subdistrict; Banjar District: Karang Intan Subdistrict; BPBAT Mandiangin); June-South Kalimantan (Hulu District: Banjar Subdistrict; Banjar District: Karang Intan Subdistrict)</li> <li>2) <b>Species affected:</b> Common carp and Koi carp (<i>Cyprinus carpio</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Haemorrhage, skin ulcerations, gill necrosis, lethargy, fish swim on the water surface, loss of appetite, irregular movement, mass mortality for 1-5 days.</li> <li>4) <b>Pathogen (isolated,sero-typed):</b> Koi herpesvirus</li> <li>5) <b>Mortality rate (high,low; decreasing/increasing):</b> &gt;60%</li> <li>6) <b>Death toll (economic loss, etc.):</b> West java=US\$38.46; South Kalimantan=US\$11,847.00</li> <li>7) <b>Size of infected areas or names of infected areas:</b> West Java, South Kalimantan</li> <li>8) <b>Preventive/Control measures taken:</b> Immunostimulant (Vitamin C), vaccination, environmental/water quality management, disinfection of farm after harvest.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Freshwater Aquaculture Sukabumi, Mandiangin</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

<p>2</p>	<p><b>Grouper iridoviral disease (GIV)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> April-Banten (Pandeglang District: Panimbang Subdistrict), NTB (West Lombok District: Sekotong Subdistrict; East Lombok District: Jerowaru Subdistrict), Maluku (Ambon City: Baguala Subdistrict, floating cages); May-Lampung (Pesawaran District: Teluk Pandan Subdistrict); June-Lampung (Lampung City: Ketapang Subdistrict), NTB (East Lombok District: Jerowaru Subdistrict)</li> <li>2) <b>Species affected:</b> groupers.</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Surface swimming, lethargy, loss of appetite, hepatosplenomegaly, haemorrhage, ulcer on peduncle.</li> <li>4) <b>Pathogen (isolated sero-typed):</b> Iridovirus, Megalocytivirus and Ranavirus</li> <li>5) <b>Mortality rate (high/low; decreasing/increasing):</b> 10-30%</li> <li>6) <b>Death toll (economic loss, etc.):</b> Maluku=US\$77.00.</li> <li>7) <b>Size of infected areas or names of infected areas:</b> Banten, NTB, Maluku, Lampung</li> <li>8) <b>Preventive/Control measures taken:</b> Immunostimulant (Vitamin C), vaccination, water quality management.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Station of Investigation Fish Health and Environment Serang, Main Center for Mariculture Lampung, Center for Mariculture Lombok, Center for Mariculture Ambon.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>
<p>3</p>	<p><b>Viral encephalopathy and retinopathy (VER)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> April-Lampung (Pesawaran District: Teluk Pandan Subdistrict; Lampung District: Ketapang Subdistrict), Maluku (Ambon City: Baguala Subdistrict), NTB (Lombok District: Sekotong Subdistrict); May-Lampung (Pesawaran District: Teluk Pandan Subdistrict; Lampung District: Kalianda and Ketapang Subdistricts), Maluku (Ambon City: Baguala Subdistrict); June- Lampung (Pesawaran District: Teluk Pandan and Padang Cermin Subdistricts; Lampung District: Kalianda and Ketapang Subdistricts), Maluku (Ambon City: Baguala Subdistrict), West Java (Karawang District: Cilebar Subdistrict).</li> <li>2) <b>Species affected:</b> groupers, <i>Epinephelus fuscoguttatus</i> (eggs).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Loss of appetite, injuries on body, lethargic swimming on water surface, swollen body, pale liver.</li> <li>4) <b>Pathogen (isolated sero-typed):</b> Nodavirus, Iridovirus (enlarged cell)</li> <li>5) <b>Mortality rate (high/low; decreasing/increasing):</b> 10%</li> <li>6) <b>Death toll (economic loss, etc.):</b> Maluku=US\$55.00</li> <li>7) <b>Size of infected areas or names of infected areas:</b> Lampung, Maluku, NTB, West Java</li> <li>8) <b>Preventive/Control measures taken:</b> Immunostimulant (Vitamin C), biosecurity, probiotics, sanitation &amp; hygiene, early harvest, eradication.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Mariculture Lampung, Center for Mariculture Lombok and Ambon.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

<p>4</p>	<p><b>Enteric septicaemia of catfish</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> April-South Kalimantan (Banjar District: Martapura and Krang Intan Subdistricts); June South Kalimantan (Banjar District: Krang Intan Subdistrict)</li> <li>2) <b>Species affected:</b> Catfish (<i>Pangasius</i> sp.).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Swimming on water surface, lethargy, haemorrhage, mass mortality.</li> <li>4) <b>Pathogen (isolated.sero-typed):</b> <i>Edwardsiella ictaluri</i>, <i>Aeromonas hydrophila</i></li> <li>5) <b>Mortality rate (high.low; decreasing/increasing):</b> up to 50%</li> <li>6) <b>Death toll (economic loss, etc.):</b> US\$3,922.00</li> <li>7) <b>Size of infected areas or names of infected areas:</b> South Kalimantan</li> <li>8) <b>Preventive/Control measures taken:</b> Immunostimulant (Vitamin C), water quality management, eradication.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Freshwater Aquaculture Mandiangin</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>
<p>5</p>	<p><b>White spot disease (WSD)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> April-Aceh (Bireun District: Jangka Subdistrict), Central Java (Kendal District: Kaliwungu Subdistrict), West Java (Karawang District: Cilebar Subdistrict); May- Central Java (Jepara District: Keling Subdistrict); June-Aceh (Aceh Besar District: Mesjid Raya Subdistrict), Central Java (Kendal District: Kendal Subdistrict).</li> <li>2) <b>Species affected:</b> Shrimp (<i>Penaeus vannamei</i>, <i>P. monodon</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Swimming on water surface, loss of appetite, lethargy, irregular movement, sudden death or mass die off.</li> <li>4) <b>Pathogen (isolated.sero-typed):</b> White spot baculovirus complex</li> <li>5) <b>Mortality rate (high.low; decreasing/increasing):</b> &gt;60%</li> <li>6) <b>Death toll (economic loss, etc.):</b> Aceh=US\$6,011.00; Central Java=US\$5,008.00.</li> <li>7) <b>Size of infected areas or names of infected areas:</b> Aceh, Central Java, West Java.</li> <li>8) <b>Preventive/Control measures taken:</b> Biosecurity, feed reduction by 50%, immunosimulant (Vitamin C and probiotics), vaccination, water quality management, early harvest, eradication.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Center for Brackishwater Aquaculture Ujung Batee, BPLUPPB Karawang and BPPIU2K Karangasem-Bali.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

6	<p><b>Infectious myonecrosis (IMN)</b></p> <p>11) <b>Origin of the disease or pathogen (history of the disease):</b> April-Central Java (Kendal District: Kaliwungu Subdistrict), South Sulawesi (Jenepono District: Turatea Subdistrict), Bali Island (Karangasem District: Kubu Subdistrict), Banten (Pandeglang District: Carita Subdistrict); June- Central Java (Kendal District: Kendal Subdistrict)</p> <p>12) <b>Species affected:</b> Shrimp (<i>Penaeus vannamei</i>).</p> <p>13) <b>Disease characteristics (unusual clinical signs or lesions):</b> Lethargy, white spot in carapace, red tail, loss of appetite, mass die off.</p> <p>14) <b>Pathogen (isolated.sero-typed):</b> Totiviridae</p> <p>15) <b>Mortality rate (high.low; decreasing/increasing):</b> 10-60%</p> <p>16) <b>Death toll (economic loss, etc.):</b> Central Java=US\$4,615.00</p> <p>17) <b>Size of infected areas or names of infected areas:</b> Central Java, South Sulawesi, Bali Island, Banten</p> <p>18) <b>Preventive/Control measures taken:</b> Feed reduction by 30-40%, environmental management, Imuunostimulant (Vitamic C), probiotics, biosecurity and eradication.</p> <p>19) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Brackishwater Aquaculture Jepara, Station of Investigation Fish Health and Environment Serang, Center for Brackishwater Aquaculture Tekalar.</p> <p>20) <b>Published paper (articles in journals/website, etc.):</b> -</p>
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**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **INDONESIA\***

 Period: **July - September 2017**

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	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)	***	***	***		
7. Koi herpesvirus disease (KHV)	-	-	+()	I	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	-	+()	-	II	4
11. Carp edema virus disease	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. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	-	-	-		
2. White spot disease (WSD)	+()	+()	+()	III	5
3. Yellowhead disease (YHD)	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-	+()	-	III	6
5. Infectious myonecrosis (IMN)	-	+()	-	III	7
6. White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	0000	0000	0000		
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		
12. <i>Spiroplasma eriocheiris</i> infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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> 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> <table style="width: 100%; border: none;"> <tr> <td style="width: 15%; text-align: center;">+</td> <td style="width: 45%;">Disease reported or known to be present</td> <td style="width: 10%; text-align: center;">?()</td> <td style="width: 30%;">Presence of the disease suspected but not confirmed in a zone</td> </tr> <tr> <td style="text-align: center;">+?</td> <td>Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td style="text-align: center;">***</td> <td>No information available</td> </tr> <tr> <td style="text-align: center;">?</td> <td>Suspected by reporting officer but presence not confirmed</td> <td style="text-align: center;">0000</td> <td>Never reported</td> </tr> <tr> <td style="text-align: center;">+()</td> <td>Occurrence limited to certain zones</td> <td style="text-align: center;">-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td style="text-align: center;">+?()</td> <td>Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease</td> <td style="text-align: center;">(year)</td> <td>Year of last occurrence</td> </tr> </table>				+	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
+	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	<p><b>Koi herpesvirus disease (KHV)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> September-West Java (Kota Sukabumi District, Cikole and Cissat Subdistricts).</li> <li>2) <b>Species affected:</b> Common carp and Koi carp (<i>Cyprinus carpio</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Gill necrosis, some fish with no clinical signs.</li> <li>4) <b>Pathogen (isolated,sero-typed):</b> Koi herpesvirus</li> <li>5) <b>Mortality rate (high,low; decreasing/increasing):</b> &lt;10%</li> <li>6) <b>Death toll (economic loss, etc.):</b></li> <li>7) <b>Size of infected areas or names of infected areas:</b> West Java</li> <li>8) <b>Preventive/Control measures taken:</b> Water quality management.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Freshwater Aquaculture, Sukabumi</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

<p>2</p>	<p><b>Grouper iridoviral disease (GIV)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> September-Maluku (Ambon City: Baguala Subdistrict), Banten (Serang District: Pulo Ampel Subdistrict)</li> <li>2) <b>Species affected:</b> groupers.</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Abnormal swimming, lethargy, loss of appetite.</li> <li>4) <b>Pathogen (isolated.sero-typed):</b> Iridovirus, megalocytivirus and ranavirus</li> <li>5) <b>Mortality rate (high.low; decreasing/increasing):</b> 30-60%</li> <li>6) <b>Death toll (economic loss, etc.):</b> Maluku=US\$77.00</li> <li>7) <b>Size of infected areas or names of infected areas:</b> Maluku, Banten</li> <li>8) <b>Preventive/Control measures taken:</b> Immunostimulant (Vitamin C), vaccination, sanitation of tools, repair of water circulation.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Center for Mariculture Ambon, Maluku, Station of Investigation Fish health and Environment Serang, Banten.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>
<p>3</p>	<p><b>Viral encephalopathy and retinopathy (VER)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> July-Lampung (Pesawaran District: Teluk pandan Subdistrict), Maluku (Ambon City: Baguala Subdistrict); August- Lampung (Pesawaran District: Teluk pandan Subdistrict; Lampung City: Kalianda Subdistrict), DKI Jakarta (Adm. Kep. Seribu: Seribu Selatan Island), Maluku (Ambon City: Baguala Subdistrict), NTB (Lombok District: Pujut and Sekotong Subdistricts); September- Lampung (Pesawaran District: Teluk pandan Subdistrict), Maluku (Ambon City: Baguala Subdistrict), NTB (Lombok District: Pujut and Sekotong Subdistricts).</li> <li>2) <b>Species affected:</b> groupers, seabass (<i>Lates calcarifer</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Open operculum, mass mortality, pale liver, hypertrophied kidney.</li> <li>4) <b>Pathogen (isolated.sero-typed):</b> Iridovirus, Iridomegalocytivirus</li> <li>5) <b>Mortality rate (high.low; decreasing/increasing):</b> 10%</li> <li>6) <b>Death toll (economic loss, etc.):</b> Maluku=US\$107.70</li> <li>7) <b>Size of infected areas or names of infected areas:</b> Lampung, Maluku, DKI Jakarta, NTB</li> <li>8) <b>Preventive/Control measures taken:</b> Biosecurity, Immunostimulant (Vitamin C), probiotics, sanitation and hygiene, early harvest, eradication.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Mariculture Lampung, Center for Mariculture Lombok, Ambon.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

<p>4</p>	<p><b>Enteric septicaemia of catfish</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> August-South Kalimantan (Banjar District: Martapura Subdistrict)</li> <li>2) <b>Species affected:</b> Catfish (<i>Pangasius</i> sp.).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Lethargy and haemorrhage.</li> <li>4) <b>Pathogen (isolated.sero-typed):</b> <i>Edwardsiella ictaluri</i> (with <i>Trichodina</i> and <i>Dactylogyrus</i> infestations)</li> <li>5) <b>Mortality rate (high.low; decreasing/increasing):</b> 50%</li> <li>6) <b>Death toll (economic loss, etc.):</b> South Kalimantan=US\$77.00</li> <li>7) <b>Size of infected areas or names of infected areas:</b> South Kalimantan</li> <li>8) <b>Preventive/Control measures taken:</b> Probiotics, water quality management.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Center for Freshwater Aquaculture Mandiangin</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>
<p>5</p>	<p><b>White spot disease (WSD)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> July- West Java (Karawang District: Cilebar Subdistrict), August-Central Java (Jepara District: Jeapara Subdistrict), West Java (Karawang District: Cilebar Subdistrict); September-East Java (Tuban District: Jenu, Situbondo and Mangaran Subdistricts), South Sulawesi (Barru District: Tanete Riaja Subdistrict), West Java (Karawang District: Cilebar Subdistrict).</li> <li>2) <b>Species affected:</b> Shrimp (<i>Penaeus vannamei</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Reddish coloration, surface swimming, lethargy, loss of appetite, irregular movement, sudden death, mass die off, white spot in carapace.</li> <li>4) <b>Pathogen (isolated.sero-typed):</b> White spot baculovirus complex</li> <li>5) <b>Mortality rate (high.low; decreasing/increasing):</b> up to 60%</li> <li>6) <b>Death toll (economic loss, etc.):</b> East Java=US\$25,615.00</li> <li>7) <b>Size of infected areas or names of infected areas:</b> West Java, Central Java, East Java, South Silawesi.</li> <li>8) <b>Preventive/Control measures taken:</b> Probiotics, vitamins, feed reduction, biosecurity, water quality management, early harvest and eradication.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Center for Brackishwater Aquaculture Situbondo; Station of Investigation Fish Health and Environment Serang, Main Center for Brackishwater Aquaculture Jepara.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

<p>6</p>	<p><b>Infectious hypodermal and haematopoietic necrosis (IHHN)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> August-South Sulawesi (Pinrang District: Lansirang and Duampanua Subdistricts)</li> <li>2) <b>Species affected:</b> Shrimp (<i>Penaeus vannamei</i>, <i>P.monodon</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> Mass die off, some do not have clinical signs.</li> <li>4) <b>Pathogen (isolated, sero-typed):</b> Parvovirus</li> <li>5) <b>Mortality rate (high, low; decreasing/increasing):</b> 10%</li> <li>6) <b>Death toll (economic loss, etc.):</b> -</li> <li>7) <b>Size of infected areas or names of infected areas:</b> South Sulawesi</li> <li>8) <b>Preventive/Control measures taken:</b> Probiotics, water quality management.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Center for Brackishwater Aquaculture Takalar; Center for Freshwater Aquaculture Mandiangin.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>
<p>7</p>	<p><b>Infectious myonecrosis (IMN)</b></p> <ol style="list-style-type: none"> <li>1) <b>Origin of the disease or pathogen (history of the disease):</b> August-Central Java (Jepara District: Jepara Subdistrict), Bali Island (Jembrana District: Negara Subdistrict); Banten (Pandeglang District: Panimbang Subdistrict; Serang District: Cinangka Subdistrict)</li> <li>2) <b>Species affected:</b> Shrimp (<i>Penaeus vannamei</i>).</li> <li>3) <b>Disease characteristics (unusual clinical signs or lesions):</b> gradual mortality, reddish tail, loss of appetite, white spot in carapace, swimming on water surface.</li> <li>4) <b>Pathogen (isolated, sero-typed):</b> Totiviridae</li> <li>5) <b>Mortality rate (high, low; decreasing/increasing):</b> 20%</li> <li>6) <b>Death toll (economic loss, etc.):</b> Central Java=US\$1,923.00; Bali Island=US\$11,538.00</li> <li>7) <b>Size of infected areas or names of infected areas:</b> Central Java, Bali Island, Banten.</li> <li>8) <b>Preventive/Control measures taken:</b> Feed reduction by 30-40%, immunostimulant, water circulation, biosecurity, eradication.</li> <li>9) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Main Center for Brackishwater Aquaculture Jepara, Station of Investigation Fish Health and Environment Serang, Center for Brackishwater Aquaculture Sitobondo.</li> <li>10) <b>Published paper (articles in journals/website, etc.):</b> -</li> </ol>

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

Country: I.R. IRAN\*Period: July - September 2017

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	1
3. Spring viraemia of carp (SVC)	-	-	-		
4. Viral haemorrhagic septicaemia (VHS)	+()	+()	+()	III	2
5. Infection with <i>Aphanomyces invadans</i> (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	(2015)	(2015)	(2015)		
<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	***	***	***		
11. Carp edema virus disease	***	***	***		
<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	0000	0000	0000		
4. Infection with <i>Xenohalotis californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	<b>0000</b>	<b>0000</b>	<b>0000</b>		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. 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
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		
8. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
9. Crayfish plague	***	***	***		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		
12. <i>Spiroplasma eriocheiris</i> infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;"></td> <td style="width: 50%;"></td> <td style="width: 10%;"></td> <td style="width: 30%;"></td> </tr> <tr> <td>+</td> <td>Disease reported or known to be present</td> <td>?()</td> <td>Presence of the disease suspected but not confirmed in a zone</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>Occurrence limited to certain zones</td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td>+?()</td> <td>Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease</td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </table>								+	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
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**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</b> was reported in two provinces, two farm in Chaharmahal&amp;Bakhtiari and two farms in Kermanshah.</p> <p>1 – The isolates were related to the genogroup E and near to Italian isolates and Origin of the disease is under study.</p> <p>2 – The affected species was <i>Oncorhynchus mykiss</i></p> <p>3 – The disease occurred in July-August 2017.</p> <p>4 – Clinical signs were mass mortality, lethargy, swimming with intermittent bouts of frenzied, abnormal activity, pinpoint haemorrhages in visceral organs and pale gills.</p> <p>5 – The pathogen was detected by histopathology, nested-PCR and cell culture in CVL and genetic sequencing in OIE reference laboratory in Denmark.</p> <p>6 – Morbidity rate was unknown.</p> <p>7 – Mortality rate was around 2/1 %</p> <p>8 – Age of affected fishes were 2-5 months</p> <p>9 – Economic loss has not been calculated yet.</p> <p>10 – Emergency harvest, stamping out of juvenile and fallowing were carried out.</p>

2	<p><b>Viral haemorrhagic septicaemia</b> was reported in two provinces, 2 fish farm in Chaharmahal&amp;Bakhtiari and two farms in Mazandaran.</p> <p>1 – The isolates were related to the genogroup Ia-2 and Origin of the disease were exotic.</p> <p>2 – The affected species was <i>Oncorhynchus mykiss</i>.</p> <p>3 – The disease occurred in July-September 2017.</p> <p>4 – Clinical signs were pinpoint haemorrhages in visceral organs and pale gills, ascite and 'pop eye' exophthalmia, bleeding under skin around base of pectoral and pelvic fins.</p> <p>5 – The pathogen was detected by real time-PCR, ELISA, histopathology, nested-PCR and virus culture in CVL and Mashhad PCR Laboratories.</p> <p>6 – Morbidity rate was unknown.</p> <p>7 – Mortality rate were under 10 %.</p> <p>8 – Age of affected fishes were different.</p> <p>9 – Economic loss has not been calculated yet.</p> <p>10 – Emergency harvest, stamping out of juvenile and fallowing were carried out.</p>
3	<p>By implementation of active surveillance system in shrimp farms, <b>White spot disease</b> was reported in two provinces: one propagation center and one farm in Bushehr Province; and one farm in Khuzestan Province.</p> <p>1 – The Origin of disease is still unknown, but it is under study.</p> <p>2 – Affected species were <i>Penaeus vannamei</i>.</p> <p>3 – The disease occurred in July 2017.</p> <p>4 – Clinical signs were sudden decrease in feeding, swimming near the edge of pond, reddish body and white spot on the cephalothorax and sudden death .</p> <p>5 – The pathogen was detected by nested-PCR and confirmed by national shrimp laboratory in Boushehr.</p> <p>6 – Morbidity rate was near to 1% .</p> <p>7 – Mortality rate was very low (0.06 %).</p> <p>8 – Age of affected shrimps were post larva and juveniles.</p> <p>9 – Economic loss undetermined.</p> <p>10 – Affected ponds was disinfected with 40 ppm calcium chloroxide and all of infected shrimps were eradicated.</p>

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

Country: **I.R. IRAN\***

 Period: **October - December 2017**

Item	Disease status <sup>at</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	+()	-	-	3	1
3. Spring viraemia of carp (SVC)	-	-	-		
4. Viral haemorrhagic septicaemia (VHS)	+()	-	+()	3	2
5. Infection with <i>Aphanomyces invadans</i> (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	(2015)	(2015)	(2015)		
<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	***	***	***		
11. Carp edema virus disease	***	***	***		
<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	0000	0000	0000		
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	<b>0000</b>	<b>0000</b>	<b>0000</b>		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. 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)	+()	-	-	3	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		
8. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
9. Crayfish plague	***	***	***		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		
12. <i>Spiroplasma eriocheiris</i> infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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>																											
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<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>Infectious haematopoietic necrosis</b> was reported in two provinces, one farm in West - Azarbaijan and one farm in Mazandaran.</p> <p>1 – The isolates were related to the genogroup E and near to Italian isolates and Origin of the disease is under study.</p> <p>2 – The affected species was <i>Oncorhynchus mykiss</i></p> <p>3 – The disease occurred in October 2017.</p> <p>4 – Clinical signs were mass mortality, lethargy, swimming with intermittent bouts of frenzied, abnormal activity, pinpoint haemorrhages in visceral organs and pale gills.</p> <p>5 – The pathogen was detected by nested-PCR and cell culture in CVL and genetic sequencing in university in partnership with CVL.</p> <p>6 – Morbidity rate was unknown.</p> <p>7 – Mortality rate was around 99 %</p> <p>8 – Age of affected fishes were 2-5 months</p> <p>9 – Economic loss has not been calculated yet.</p> <p>10 – Emergency harvest, stamping out of juvenile and fallowing were carried out.</p>

2	<p><b>Viral haemorrhagic septicaemia</b> was reported in two provinces, 2 fish farms in Chaharmahal&amp;Bakhtiari and two farms in Lorestan.</p> <p>1 – The isolates were related to the genogroup Ia-2 and Origin of the disease were exotic.</p> <p>2 – The affected species was <i>Oncorhynchus mykiss</i>.</p> <p>3 – The disease occurred in October and December 2017.</p> <p>4 – Clinical signs were pinpoint haemorrhages in visceral organs and pale gills, ascite and 'pop eye' exophthalmia, bleeding under skin around base of pectoral and pelvic fins.</p> <p>5 – The pathogen was detected by real time-PCR, ELISA, histopathology, nested-PCR and virus culture in CVL and Mashhad PCR Laboratories.</p> <p>6 – Morbidity rate was unknown.</p> <p>7 – Mortality rate were near to 11.5 %.</p> <p>8 – Age of affected fishes were different.</p> <p>9 – Economic loss has not been calculated yet.</p> <p>10 – Emergency harvest, stamping out of juvenile and fallowing were carried out.</p>
3	<p>By implementation of active surveillance system in shrimp farms, <b>White spot disease</b> was reported in 11 farms in Bushehr Province.</p> <p>1 – The Origin of disease is still unknown, but it is under study.</p> <p>2 – Affected species were <i>Penaeus vannamei</i>.</p> <p>3 – The disease occurred in October 2017.</p> <p>4 – Clinical signs were sudden decrease in feeding, swimming near the edge of pond, reddish body and white spot on the cephalothorax and sudden death.</p> <p>5 – The pathogen was detected by nested-PCR and confirmed by National Shrimp Laboratory in Boushehr.</p> <p>6 – Morbidity rate was near to 1% .</p> <p>7 – Mortality rate was low (26.4 %).</p> <p>8 – Age of affected shrimps were 4 months.</p> <p>9 – Economic loss undetermined.</p> <p>10 – Affected ponds was disinfected with 40 ppm calcium chloroxide and all of infected shrimps were eradicated.</p>

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

Country: **JAPAN\***

 Period: **October - December 2017**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<b>FINFISH DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Epizootic haematopoietic necrosis	0000	0000	0000	I	
2. Infectious haematopoietic necrosis	+	+	+	III	1
3. Spring viraemia of carp (SVC)	0000	0000	0000	I	
4. Viral haemorrhagic septicaemia (VHS)	-(2017)	+	+	III	2
5. Infection with <i>Aphanomyces invadans</i> (EUS)	-(2015)	-(2015)	-(2015)	I	
6. Red seabream iridoviral disease (RSID)	+	+	+	II III	3
7. Koi herpesvirus disease (KHV)	+	-(2017)	-(2017)	III	4
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	0000	0000	0000	I	
9. Viral encephalopathy and retinopathy	+	+	+	III	5
10. Enteric septicaemia of catfish	-(2010)	-(2010)	-(2010)	I	
11. Carp edema virus disease	0000	0000	0000	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)	-(2015)	-(2015)	I	
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000	I	
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	-(2014)	-(2014)	-(2014)	I	
7. 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)	-(2017)	-(2017)	-(2017)	I	
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	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	I	
9. Crayfish plague	0000	0000	0000	I	
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	0000	0000	0000	I	
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000	I	
12. <i>Spiroplasma eriocheiris</i> infection	0000	0000	0000	I	
13. Iridovirus in crayfish	0000	0000	0000	I	

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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.					

<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	<p><b>Infectious haematopoietic necrosis (IHN)</b></p> <p>1) <b>Reported in</b> 12 prefectures                  2) <b>Species affected:</b> Amago (<i>O. masou ishikawae</i>), Rainbow trout (<i>O. mykiss</i>)                  3) <b>Disease characteristics:</b> Mortality, Anemia, Bleeding, Exophthalmos, Anemia of gills and kidney, Anemia of viscera, Threadbare fins, Petechial haemorrhages, Unusual swimming                  4) <b>Pathogen:</b> Infectious haematopoietic necrosis virus                  5) <b>Mortality rate:</b> 1-31%                  6) <b>Economic loss:</b> –                  7) <b>Names of infected areas:</b> Honshu, Shikoku, Hokkaido                  8) <b>Preventive/control measures taken:</b> Feed restriction, disinfection of facilities and tools, notification to concerned authorities, culling of infected fish, movement control.                  9) <b>Laboratories for confirmation:</b> Cell culture, PCR, Isolation of the virus by prefectural research laboratories                  10) <b>Publications:</b> None</p>

<p>2</p>	<p><b>Viral haemorrhagic septicaemia (VHS)</b></p> <p>1) <b>Reported in</b> 2 prefectures                  2) <b>Species affected:</b> Japanese flounder (<i>Paralichthys olivaceus</i>)                  3) <b>Disease characteristics:</b> Mortality, ascites, brown spots on the gills                  4) <b>Pathogen:</b> Viral haemorrhagic septicaemia virus                  5) <b>Mortality rate:</b> 2-66%                  6) <b>Economic loss:</b> –                  7) <b>Names of infected areas:</b> Kyushu                  8) <b>Preventive/control measures taken:</b> Culling of infected fish, disinfection of facilities and tools                  9) <b>Laboratory confirmation:</b> PCR by the prefectural research laboratory                  10) <b>Publications:</b> None</p>
<p>3</p>	<p><b>Red seabream iridoviral disease (RSIVD)</b></p> <p>1) <b>Reported in</b> 8 prefectures                  2) <b>Species affected:</b> Red seabream (<i>Pagrus major</i>), Great amberjack (<i>Seriola dumerili</i>), Amberjack (<i>Seriola quinqueradiata</i>), Bluefin tuna (<i>Thunnus orientalis</i>), Barred knifejaw (<i>Oplegnathus fasciatus</i>), hybrid of grouper, Trevally (<i>Pseudocaranx dentex</i>)                  3) <b>Disease characteristics:</b> Mortality, Enlargement of the spleen, Erosion, Black spot on the gills                  4) <b>Pathogen:</b> Red seabream iridovirus                  5) <b>Mortality rate:</b> 1-77%                  6) <b>Economic loss:</b> –                  7) <b>Names of infected areas:</b> Shikoku, Kyushu, Honsyu, Okinawa                  8) <b>Preventive/control measures taken:</b> Feed restriction, Removing dead fish, Movement control, Notification to concerns.                  9) <b>Laboratory confirmation:</b> PCR by the prefectural research laboratory, Indirect immunofluorescence, Histopathological observation                  10) <b>Publications:</b> None</p>
<p>4</p>	<p><b>Koi herpesvirus disease (KHV)</b></p> <p>1) <b>Reported in</b> 4 prefectures                  2) <b>Species affected:</b> Koi carp (<i>Cyprinus carpio</i>)                  3) <b>Disease characteristics:</b> Mortality, unusual swimming, enophthalmus                  4) <b>Pathogen:</b> Koi herpesvirus                  5) <b>Mortality rate:</b> 0-83%                  6) <b>Economic loss:</b> –                  7) <b>Names of infected areas:</b> Honshu                  8) <b>Preventive/control measures taken:</b> Movement control, culling of infected fish, disinfection of ponds, notification to concerned authorities                  9) <b>Laboratory confirmation:</b> PCR by National Research Institute of Aquaculture                  10) <b>Publications:</b> Website of Ministry of Agriculture, Forestry and Fisheries (MAFF) and prefectures</p>

5	<p><b>Viral encephalopathy and retinopathy (VER)</b></p> <p>1) <b>Reported in</b> 2 prefectures</p> <p>2) <b>Species affected:</b> Grouper (<i>Epinephelus septemfasciatus</i>), Longtooth grouper (<i>E. bruneus</i>), hybrid grouper</p> <p>3) <b>Disease characteristics:</b> Mortality, unusual swimming</p> <p>4) <b>Pathogen:</b> Betanodavirus</p> <p>5) <b>Mortality rate:</b> 0-11%</p> <p>6) <b>Economic loss:</b> —</p> <p>7) <b>Names of infected areas:</b> Honshu, Kyusyu</p> <p>8) <b>Preventive/control measures taken:</b> Notification to concerned authority, vaccination</p> <p>9) <b>Laboratory confirmation:</b> PCR by the prefectural research laboratory</p> <p>10) <b>Publications:</b> None</p>
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**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Country: **MALAYSIA\***Period: **July - September 2017**

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	I,II,III	1
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with <i>Aphanomyces invadans</i> (EUS)	(1986)	(1986)	(1986)	I	2
6. Red seabream iridoviral disease (RSID)	-	-	-	I,III	3
7. Koi herpesvirus disease (KHV)	(2017)	(2017)	(2017)	I,III	4
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	-	-	-	I,II,III	5
9. Viral encephalopathy and retinopathy	(2015)	(2015)	(2015)	I,II,III	6
10. Enteric septicaemia of catfish	0000	0000	0000		
11. Carp edema virus disease	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>	?(2016)	?(2016)	?(2016)		7
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	-	-	-	III	8
2. White spot disease (WSD)	?(2016)	?(2016)	?(2016)	III	9
3. Yellowhead disease (YHD)	-	-	-	III	10
4. Infectious hypodermal and haematopoietic necrosis (IHNN)	(2016)	(2016)	(2016)	III	11
5. Infectious myonecrosis (IMN)	(2014)	(2014)	(2014)	III	12
6. White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	(2014)	(2014)	(2014)		13
9. Crayfish plague	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	(2016)	(2016)	(2016)		14
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		
12. <i>Spiroplasma eriocheiris</i> infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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. Enteric red mouth disease (ERD)	0000	0000	0000	I,II,III	15
2. Tilapia lake virus disease (TiLV)	+	(2017)	(2017)	II,III	16

<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			
<b>a/ Please use the following symbols:</b>			
+	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>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	<b>Spring viraemia of carp (SVC)</b> No positive case was detected (PCR) during DoF active surveillance programme.
2	<b>Infection with <i>Aphanomyces invadans</i> (EUS)</b> No positive case was detected (gross observation) during DoF active surveillance programme.
3	<b>Red seabream iridoviral disease (RSID)</b> No positive case was detected (PCR) during DoF active surveillance programme.
4	<b>Koi herpesvirus disease (KHV)</b> No positive case was detected (PCR) during DoF active surveillance programme.  Infection with KHV is known to have occurred previously in the state of Selangor (2017)
5	<b>Grouper iridoviral disease (GIV)</b> No positive case was detected (PCR) during DoF active surveillance programme.

6	<p><b>Viral encephalopathy and retinopathy (VER)</b> No positive case was detected (PCR) during DoF active surveillance programme.</p> <p>Infection with VER is known to have occurred previously in the state of Perak (2015) and Kelantan (2015).</p>
7	<p><b>Infection with <i>Perkinsus olseni</i></b> No positive case was detected (PCR) during DoF active surveillance programme.</p> <p>Infection with <i>Perkinsus olseni</i> was suspected to occur in 2016, but not confirmed in a zone.</p>
8	<p><b>Taura syndrome virus (TSV)</b> No positive case was detected (PCR) during DoF active surveillance programme.</p>
9	<p><b>White spot disease (WSD)</b> No positive case was detected (PCR) during DoF active surveillance programme.</p> <p>WSD was suspected to occur in 2016 but not confirmed in a zone.</p>
10	<p><b>Yellow head disease (YHD)</b> No positive case was detected (PCR) during DoF active surveillance programme.</p>
11	<p><b>Infectious hypodermal and haematopoietic virus (IHHNV)</b> No positive case was detected (PCR) during DoF active surveillance programme.</p> <p>IHHNV is known to have occurred previously in the state of Terengganu (2016).</p>
12	<p><b>Infectious myonecrosis (IMNV)</b> No positive case was detected (PCR) during DoF active surveillance programme.</p> <p>IMNV is known to have occurred previously in the state of Sabah (2014).</p>
13	<p><b>Acute hepatopancreatic necrosis disease (AHPND)</b> No positive case was detected (PCR) during DoF active surveillance programme.</p> <p>AHPND is known to have occurred previously in several states in Malaysia (2014)</p>
14	<p><b>Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)</b> No positive case was detected (PCR) during DoF active surveillance programme.</p> <p>HPM-EHP is known to have occurred previously in several states in Malaysia (2016)</p>
15	<p><b>Enteric redmouth disease (ERD)</b> No positive case was detected (biochemical test and PCR) during DoF active surveillance programme.</p>

16	<p><b>Tilapia lake virus (TiLV)</b></p> <p>11) <b>Origin of the disease or pathogen (history of the disease):</b> Caused by the Orthomyxoviridae-like Tilapia lake virus. A new emerging disease in Malaysia. Two (2) outbreaks were observed: a) Timah Tasoh, Kedah in June 2017; and b) Pial River, Perlis in July 2017.</p> <p>12) <b>Species affected:</b> wild black tilapia, <i>Oreochromis</i> spp.; hybrid red tilapia, <i>Oreochromis</i> spp.</p> <p>13) <b>Disease characteristics (unusual clinical signs or lesions):</b> Exophthalmia, abdominal distension, external haemorrhage.</p> <p>14) <b>Pathogen (isolated, sero-typed):</b> Orthomyxoviridae, Tilapia lake virus</p> <p>15) <b>Mortality rate (high, low; decreasing/increasing):</b> For both outbreaks, it was observed throughout the period with steady increasing pattern until a peak was achieved, and then decreasing until no more mortalities are observed.</p> <p>16) <b>Death toll (economic loss, etc.):</b> a) 0.71% (300 pcs) mortality was observed in open water; b) 15% (3,000 pcs; RM5,000.00) mortality was observed in a pond area.</p> <p>17) <b>Size of infected areas or names of infected areas:</b> a) outbreak happened in open water; b) outbreak happened in a closed pond area.</p> <p>18) <b>Preventive/Control measures taken:</b> Movement restriction, culling, slaughter, proper disposal.</p> <p>19) <b>Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):</b> Confirmation at National Fish Health Research Division (NaFiSH) laboratory.</p> <p>20) <b>Published paper (articles in journals/website, etc.):</b> published through OIE Immediate Notification (25 September 2017).</p>
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**2. New aquatic animal health regulations introduced within past six months (with effective date):**

Fisheries (Inland Fisheries Aquaculture)(Federal Territory of Kuala Lumpur and Federal Territory of Labuan) Rules 2017, effective 1<sup>st</sup> March 2017.

Country: **MALAYSIA\***

 Period: **October - December 2017**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<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	I,II,III	1
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000		
5. Infection with <i>Aphanomyces invadans</i> (EUS)	(1986)	(1986)	(1986)	I	2
6. Red seabream iridoviral disease (RSID)	-	-	-	I,III	3
7. Koi herpesvirus disease (KHV)	(2017)	(2017)	(2017)	I,III	4
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	-	-	-	I,II,III	5
9. Viral encephalopathy and retinopathy	(2015)	(2015)	(2015)	I,II,III	6
10. Enteric septicaemia of catfish	0000	0000	0000		
11. Carp edema virus disease	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>	?(2016)	?(2016)	?(2016)		7
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	-	-	-	III	8
2. White spot disease (WSD)	?(2016)	?(2016)	?(2016)	III	9
3. Yellowhead disease (YHD)	-	-	-	III	10
4. Infectious hypodermal and haematopoietic necrosis (IHNN)	(2016)	(2016)	(2016)	III	11
5. Infectious myonecrosis (IMN)	(2014)	(2014)	(2014)	III	12
6. White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	(2014)	(2014)	(2014)		13
9. Crayfish plague	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	(2016)	(2016)	(2016)		14
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		
12. <i>Spiroplasma eriocheiris</i> infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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. Enteric red mouth disease (ERD)	0000	0000	0000	I,II,III	15
2. Tilapia lake virus disease (TiLV)	(2017)	(2017)	(2017)	II,III	16

<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> <table border="0"> <tbody> <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>Presence of the disease suspected but not confirmed in a zone</td> </tr> <tr> <td style="padding-right: 20px;">+?</td> <td style="padding-right: 20px;">Serological evidence and/or isolation of causative agent but no clinical diseases</td> <td style="padding-right: 20px;">***</td> <td>No information available</td> </tr> <tr> <td style="padding-right: 20px;">?</td> <td style="padding-right: 20px;">Suspected by reporting officer but presence not confirmed</td> <td style="padding-right: 20px;">0000</td> <td>Never reported</td> </tr> <tr> <td style="padding-right: 20px;">+( )</td> <td style="padding-right: 20px;">Occurrence limited to certain zones</td> <td style="padding-right: 20px;">-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td style="padding-right: 20px;">+?( )</td> <td style="padding-right: 20px;">Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease</td> <td style="padding-right: 20px;">(year)</td> <td>Year of last occurrence</td> </tr> </tbody> </table>				+	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
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<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>Spring viraemia of carp (SVC)</b>                      No positive case was detected (PCR) during DoF active surveillance programme.</p>
2	<p><b>Infection with <i>Aphanomyces invadans</i> (EUS)</b>                      No positive case was detected (gross observation) during DoF active surveillance programme.</p>
3	<p><b>Red seabream iridoviral disease (RSID)</b>                      No positive case was detected (PCR) during DoF active surveillance programme.</p>
4	<p><b>Koi herpesvirus disease (KHV)</b>                      No positive case was detected (PCR) during DoF active surveillance programme.                       Infection with KHV is known to have occurred previously in the state of Selangor (2017)</p>
5	<p><b>Grouper iridoviral disease (GIV)</b>                      No positive case was detected (PCR) during DoF active surveillance programme.</p>

6	<p><b>Viral encephalopathy and retinopathy (VER)</b> No positive case was detected (PCR) during DoF active surveillance programme. Infection with VER is known to have occurred previously in the state of Perak (2015) and Kelantan (2015).</p>
7	<p><b>Infection with <i>Perkinsus olseni</i></b> No positive case was detected (PCR) during DoF active surveillance programme. Infection with <i>Perkinsus olseni</i> was suspected to occur in 2016, but not confirmed in a zone.</p>
8	<p><b>Taura syndrome virus (TSV)</b> No positive case was detected (PCR) during DoF active surveillance programme.</p>
9	<p><b>White spot disease (WSD)</b> No positive case was detected (PCR) during DoF active surveillance programme. WSD was suspected to occur in 2016 but not confirmed in a zone.</p>
10	<p><b>Yellow head disease (YHD)</b> No positive case was detected (PCR) during DoF active surveillance programme.</p>
11	<p><b>Infectious hypodermal and haematopoietic virus (IHHNV)</b> No positive case was detected (PCR) during DoF active surveillance programme. IHHNV is known to have occurred previously in the state of Terengganu (2016).</p>
12	<p><b>Infectious myonecrosis (IMNV)</b> No positive case was detected (PCR) during DoF active surveillance programme. IMNV is known to have occurred previously in the state of Sabah (2014).</p>
13	<p><b>Acute hepatopancreatic necrosis disease (AHPND)</b> No positive case was detected (PCR) during DoF active surveillance programme. AHPND is known to have occurred previously in several states in Malaysia (2014)</p>
14	<p><b>Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)</b> No positive case was detected (PCR) during DoF active surveillance programme. HPM-EHP is known to have occurred previously in several states in Malaysia (2016)</p>
15	<p><b>Enteric redmouth disease (ERD)</b> No positive case was detected (biochemical test and PCR) during DoF active surveillance programme.</p>
16	<p><b>Tilapia lake virus (TiLV)</b> No positive case was detected (PCR) during DoF active surveillance programme. TiLV is known to have occurred previously in Kedah (June 2017) and Perlis (July 2017).</p>

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

Fisheries (Inland Fisheries Aquaculture)(Federal Territory of Kuala Lumpur and Federal Territory of Labuan) Rules 2017, effective 1<sup>st</sup> March 2017.

Country: **MYANMAR\***

 Period: **October - December 2017**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	October	November	December		
<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	***	***	***		
11. Carp edema virus disease					
<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>	/	/	/		
5. Infection with <i>Bonamia ostreae</i>					
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	/	/	/		
7. 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 (IHNN)	-	-	-	III	
5. Infectious myonecrosis (IMN)	-	-	-	III	
6. White tail disease (MrNV)	-	+( )	-	III	
7. Necrotising hepatopancreatitis (NHP)	***	***	***		
8. Acute hepatopancreatic necrosis disease (AHPND)	-	-	-	III	
9. Crayfish plague	***	***	***		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		
12. <i>Spiroplasma eriocheiris</i> infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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.					

<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>					
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<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	During this period, we have received 33 samples of crustaceans (5 frozen shrimp and 4 soft shell crab for export, and live PL samples of <i>P. vannamei</i> (4 samples), <i>P. monodon</i> (2 samples), and <i>M. rosenbergii</i> (18 samples) for import and local use) for testing, and found that all samples were negative for WSSV, IHNV, MrNV, YHV, IMN, AHPND 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>Ergasilus</i> ) 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: **NEW CALEDONIA**

 Period: **October - December 2017**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<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	***	***	***		
11. Carp edema virus disease	***	***	***		
<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>Xenohalictis californiensis</i>	0000	0000	0000	II	
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000	II	
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	***	***	***		
7. Acute viral necrosis (in scallops)	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000	III	
2. White spot disease (WSD)	0000	0000	0000	III	
3. Yellowhead disease (YHD)	0000	0000	0000	III	
4. Infectious hypodermal and haematopoietic necrosis (IHNN)	2013	2013	2013	III	
5. Infectious myonecrosis (IMN)	0000	0000	0000	III	
6. White tail disease (MrNV)	0000	0000	0000	III	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	III	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	III	
9. Crayfish plague	0000	0000	0000	III	
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	0000	0000	0000	III	
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000	III	
12. <i>Spiroplasma eriocheiris</i> infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		

AMPHIBIAN DISEASES					
<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	First detection of nodavirus by PCR on <i>Cromileptes altivelis</i> in the experimental farm of New Caledonia. Further investigation to be done.
2	
3	

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

Country: **NEW ZEALAND**

 Period: **October - December 2017**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<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 (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)	0000	0000	0000	III	
7. Koi herpesvirus disease (KHV)	0000	0000	0000	III	
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	0000	0000	0000	III	
9. Viral encephalopathy and retinopathy	0000	0000	0000	III	
10. Enteric septicaemia of catfish	0000	0000	0000	III	
11. Carp edema virus disease	0000	0000	0000	III	
<b>MOLLUSC DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with <i>Bonamia exitiosa</i>	- (2017)	- (2017)	- (2017)	III	1
2. Infection with <i>Perkinsus olseni</i>	- (2017)	+	- (2017)	III	2
3. Infection with abalone herpesvirus	0000	0000	0000	III	
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000	III	
5. Infection with <i>Bonamia ostreae</i>	- (2017)	- (2017)	- (2017)	III	3
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000	III	
7. Acute viral necrosis (in scallops)	0000	0000	0000	III	
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000	III	
2. White spot disease (WSD)	0000	0000	0000	III	
3. Yellowhead disease (YHD)	0000	0000	0000	III	
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	0000	0000	0000	III	
5. Infectious myonecrosis (IMN)	0000	0000	0000	III	
6. White tail disease (MrNV)	0000	0000	0000	III	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	III	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	III	
9. Crayfish plague	0000	0000	0000	III	
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	0000	0000	0000	III	
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000	III	
12. <i>Spiroplasma eriocheiris</i> infection	0000	0000	0000	III	
13. Iridovirus in crayfish	0000	0000	0000	III	

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000	III	
2. Infection with <i>Batrachochytrium dendrobatidis</i>	-(2010)	-(2010)	-(2010)	III	4
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> 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>			
		?( )	Presence of the disease suspected but not confirmed in a zone
+	Disease reported or known to be present	***	No information available
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
+()	Occurrence limited to certain zones	(year)	Year of last occurrence
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease		
<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><i>Bonamia exitiosa</i> occurs in commercial oyster beds in Foveaux Strait, Southland where it is highly prevalent and associated with mortalities in mid to late summer. It occurs intermittently around the South Island and in Wellington Harbour (southern end of the North Island), and has been previously reported in <i>Ostrea chilensis</i> from Hauraki Gulf (Auckland region), Tauranga (Bay of Plenty region), the Marlborough Sounds and Wellington Harbour. Annual monitoring of the presence of <i>B. exitiosa</i> infection is undertaken in the flat oyster (<i>O. chilensis</i>) population in the Foveaux Strait.</p>

<p>2</p>	<p><b>Infection with <i>Perkinsus olseni</i></b>            1) <b>Reported in</b> Auckland region, New Zealand in November 2017 via passive surveillance            2) <b>Species affected</b> - Wild New Zealand scallops <i>Pecten novaezelandiae</i>            3) <b>Clinical signs</b> - Low level. Prevalence was 70% but not associated with significant pathology            4) <b>Pathogen</b> - Perkinsus olseni            5) <b>Mortality rate</b> - None reported            6) <b>Economic loss</b> - None reported            7) <b>Geographic extent</b> - Two sites within Kaipara Harbour, Auckland region: Shelly beach and Tauhoa channel            8) <b>Preventive/control measures taken</b> - None (not under active management)            9) <b>Laboratory confirmation</b> – Histopathology and RFTM, (Investigation and Diagnostic Centre - Wallaceville)            10) <b>Publications</b> - None</p> <p><i>Perkinsus olseni</i> was first detected in New Zealand in 1999, in wild wedge shells (<i>Macomona liliana</i>). It was then found in wild populations of New Zealand cockles (<i>Austrovenus stutchburyi</i>), ark shells (<i>Barbatia novaezelandiae</i>) and pipi (<i>Paphies australis</i>) in 2000-2001. In July 2013, <i>P. olseni</i> was detected for the first time in farmed black foot pāua (<i>Haliotis iris</i>), a type of abalone native to New Zealand. Further detections were made in wild <i>H. iris</i> populations in 2014. These mollusc species occur widely around the coast of New Zealand, but to date <i>P. olseni</i> has only been detected in these species from the Auckland region northwards. <i>P. olseni</i> was found for the first time on the South Island in New Zealand green lipped mussels (<i>Perna canaliculus</i>) in a land based aquaculture facility in September 2014, and then in wild New Zealand scallops (<i>Pecten novaezelandiae</i>) in November 2014. Both of these findings were in the Marlborough region, and were incidental and not associated with mortality events. In November 2017, passive surveillance detected <i>P. olseni</i> from New Zealand scallops in two sites within Kaipara harbour, Auckland region, and again was thought to be incidental and not associated with significant pathology in scallops.</p>
<p>3</p>	<p><i>Bonamia ostreae</i> was detected for the first time in New Zealand flat oysters (<i>Ostrea chilensis</i>) in January 2015. It was found on one land-based aquaculture facility in the Nelson region, and on two marine farms in the Marlborough region, both regions being in northern part of the South Island. Since that time, movement controls have been in place to regulate the movement of susceptible shellfish from the northern regions of the South Island and active surveillance has been conducted for the purposes of early detection of spread. In 2016, <i>B. ostreae</i> was detected in both farmed and wild flat oysters within the Marlborough region (the same region as initially reported), and was associated with pathology and mortality in the farmed population. In May 2017 surveillance detected <i>B. ostreae</i> in marine flat oyster farms in Big Glory Bay, Stewart Island (situated in the Southland region, at the southern end of the South Island). Following this detection, movement controls to manage risk movements from Stewart Island were issued, and depopulation of all flat oyster farms within areas where <i>B. ostreae</i> had been detected commenced. Depopulation of farms in Big Glory Bay commenced on the 19 June 2017 and was completed September 2017. Depopulation of farms in Marlborough Sounds commenced on the 11 July and is continuing. Active surveillance continues for the purposes of early detection of spread, with no <i>B. ostreae</i> detected in wild oysters in Big Glory Bay in the September 2017. No clinical signs or elevated mortality was observed in association with <i>B. ostreae</i> in farmed flat oysters in Big Glory Bay.</p>
<p>4</p>	<p>The first isolation of <i>Batrachochytrium dendrobatidis</i> was made in 1999 in New Zealand. Since then the fungus has been detected both on the North and South Islands in both native and introduced frog species. It is not certain what level of population decline if any, is associated with the presence of the fungus in native frogs.</p>

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

Following the detection of *Bonamia ostreae* in Big Glory Bay, Stewart Island in May 2017, the Controlled Area Notice issued under s131 of the Biosecurity Act 1993, that has been in place since 2015, was reissued to manage risk movements from Stewart Island by creating a Stewart Island Zone. Under s122 of the Biosecurity Act 1993, Notices of Direction to depopulate were also served on flat oyster farms within areas where *B. ostreae* had been detected. Depopulation of farms in Big Glory Bay commenced on the 19 June 2017 and was completed September 2017. Depopulation of farms in Marlborough Sounds commenced on the 11 July and is continuing.

Country: **PHILIPPINES\***

 Period: **October - December 2017**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<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)	-(2002)	-(2002)	-(2002)	I	1
6. Red seabream iridoviral disease (RSID)	0000	0000	0000	I, III	2
7. Koi herpesvirus disease (KHV)	0000	0000	0000	I, III	
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	-(2008)	-(2008)	-(2008)	I, III	3
9. Viral encephalopathy and retinopathy	-	-	-	I, III	4
10. Enteric septicaemia of catfish	****	****	****		
11. Carp edema virus disease	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. Infection with abalone herpesvirus	****	****	****		
4. Infection with <i>Xenohaliotis californiensis</i>	****	****	****		
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. Acute viral necrosis (in scallops)	****	****	****		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	0000	0000	0000	I, III	5
2. White spot disease (WSD)	+	+	+	I, III	6
3. Yellowhead disease (YHD)	-(1999)	-(1999)	-(1999)	I, III	7
4. Infectious hypodermal and haematopoietic necrosis (IHNN)	+	+	+	I, III	8
5. Infectious myonecrosis (IMN)	0000	0000	0000	I, III	9
6. White tail disease (MrNV)	0000	0000	0000	I, III	
7. Necrotising hepatopancreatitis (NHP)	0000	0000	0000	I, III	10
8. Acute hepatopancreatic necrosis disease (AHPND)	+	+	+	I, III	11
9. Crayfish plague	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	+	-	+	I, III	12
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		
12. <i>Spiroplasma eriocheiris</i> infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	****	****	****		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	****	****	****		
ANY OTHER DISEASES OF IMPORTANCE					
1 Tilapia Lake Virus (TiLV)	-	-	-	I, III	13
2.					

<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infection with 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> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <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> </td> <td style="width: 50%; vertical-align: top;"> <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> </td> </tr> </table>		<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>
<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>		
<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><i>Aphanomyces invadans</i> (EUS)</b>                      EUS was not detected by gross morphological examinations in <i>Anguilla</i> spp. and tilapia samples from the provinces of Agusan del Norte, General Santos, Antipolo, Bulacan, Zambales, Nueva Ecija, and Cotabato. Examinations were conducted by Bureau of Fisheries and Aquatic Resources (BFAR) Central Fish Health Laboratory.</p>
2	<p><b>Red Seabream Iridoviral Disease (RSID)</b>  <i>Chanos chanos</i>, Tilapia and grouper analyzed using PCR test showed negative results for Red seabream iridoviral disease. The samples were collected from Samar and Cagayan de Oro. Examination was conducted by BFAR Central Fish Health Laboratory.</p>
3	<p><b>Grouper iridoviral disease (GIV)</b>                      Grouper samples analyzed using PCR test showed negative results for Grouper iridoviral disease. The samples were collected from Samar. Examination was conducted by BFAR Central Fish Health Laboratory.</p>

4	<p><b>Viral Encephalopathy and Retinopathy (VER)</b>  <i>T. blochii</i>, <i>E. argentimaculatus</i> and grouper analyzed using PCR test showed negative results for Viral Encephalopathy and Retinopathy. The samples were collected from Iloilo and Samar. Examinations were conducted by BFAR Central and Southeast Asian Fisheries Development Center (SEAFDEC) Fish Health Laboratories.</p>
5	<p><b>Taura Syndrome (TS)</b>  <i>P.vannamei</i>, <i>P.monodon</i> and <i>P.merguensis</i> of different stages (broodstock, adult, fry and juvenile) analyzed using PCR test showed negative results for Taura Syndrome. Samples were collected from the provinces of Zambales, Pampanga, Quezon, Batangas, Negros Occidental, Cebu, Oriental Mindoro, Pasay City, Occidental Mindoro, Cotabato City, Camarines Sur, Zamboanga, Agusan del Norte, Ilocos Sur and Cagayan. Other samples examined were imported from Hawaii, USA. Examinations were conducted by BFAR Central and Regional Fish Health Laboratories.</p>
6	<p><b>White Spot Disease (WSD)</b>  <b>Origin of the disease or pathogen (history of the disease)</b>-19 farms affected  <b>Species affected:</b> <i>P. vannamei</i>, <i>P. indicus</i>, <i>P. monodon</i>, <i>S. serrata</i>, <i>P. merguensis</i>, and crab  <b>Pathogen:</b> White Spot Virus  <b>Size of infected areas or names of infected areas:</b> Oriental Mindoro, Iloilo, Cebu, Agusan del Norte, Butuan City, Surigao del Sur, Cagayan, Zambales  <b>Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):</b> Polymerase Chain Reaction Test (PCR) / BFAR Central, Regional and SEAFDEC Fish Health Laboratories</p>
7	<p><b>Yellow Head Virus (YHV)</b>  <i>P. vannamei</i>, <i>P. monodon</i>, <i>P. merguensis</i> and crab analyzed using PCR test showed negative results for Yellow Head Virus. Samples were collected from the provinces of Zambales, Oriental Mindoro, Batangas, Pasay City, Occidental Mindoro, Cotabato City, Camarines Sur, Zamboanga del Sur, Zamboanga del Norte, Pangasinan, Agusan del Norte, Oriental Mindoro, Ilocos Sur, Iloilo and Cagayan. Other samples examined were imported from Hawaii, USA. Examinations were conducted by BFAR Central and SEAFDEC Fish Health Laboratories.</p>
8	<p><b>Infectious Hypodermal and Hematopoietic Necrosis (IHHNV)</b>  <b>Origin of the disease or pathogen (history of the disease)</b>-9 farms  <b>Species affected:</b> <i>P. vannamei</i>, <i>P. indicus</i>, <i>M.mossambica</i> and <i>P. monodon</i>  <b>Pathogen:</b> Infectious Hypodermal and Hematopoietic Necrosis Virus  <b>Size of infected areas or names of infected areas:</b> Cebu, Oriental Mindoro, Pangasinan, Zamboanga del Norte, Pasay City, Iloilo,  <b>Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):</b> Polymerase Chain Reaction Test (PCR) / BFAR Central, Regional and SEAFDEC Fish Health Laboratories.</p>
9	<p><b>Infectious Myonecrosis (IMN)</b>  <i>P. vannamei</i>, <i>P.monodon</i> and <i>P.merguensis</i> of different stages (broodstock, adult, fry and juvenile) analyzed using PCR test showed negative for Infectious Myonecrosis. Samples were collected from the provinces of Batangas, Quezon, Negros Occidental, Cebu, Agusan del Norte, Cagayan, Ilocos Sur, Occidental Mindoro, Oriental Mindoro, Pangasinan, Zambales, Zamboanga del Norte, Zamboanga del Sur, Pasay City and Surigao del Sur. Some samples examined were imported from Hawaii, USA. Examinations were conducted by BFAR Central and Regional Fish Health Laboratories.</p>

10	<p><b>Necrotising Hepatopancreatitis (NHP)</b>  <i>P. vannamei</i>, <i>P. monodon</i> of different stages (broodstock, adult, juvenile and nauplii) and crab analyzed using PCR test showed negative results for Necrotising Hepatopancreatitis. Samples were collected from the provinces of Batangas, Agusan del Norte, Occidental Mindoro, Pangasinan, Zambales, Pasay City, Cotabato City, Camarines Sur, Zamboanga del Sur, Zamboanga del Norte, Ilocos Sur, Cagayan, Oriental Mindoro and Surigao del Sur. Examinations were conducted by BFAR Central and Regional Fish Health Laboratories.</p>
11	<p><b>Acute Hepatopancreatic Necrosis Disease (AHPND)</b>  <b>Origin of the disease or pathogen (history of the disease)</b>-12 farms affected  <b>Species affected:</b> <i>P. vannamei</i>, <i>P. monodon</i>, wild crabs  <b>Pathogen:</b> AHPND <i>Vibrio parahaemolyticus</i>  <b>Size of infected areas or names of infected areas:</b> Zambales, Batangas, Oriental Mindoro, Bohol, Cebu, Agusan del Norte, Iloilo  <b>Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):</b> Polymerase Chain Reaction Test (PCR) / BFAR Central, Regional and SEAFDEC Fish Health Laboratories.</p>
12	<p><b>Hepatopancreatic Microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)</b>  <b>Origin of the disease or pathogen (history of the disease)</b>-7 farms affected  <b>Species affected:</b> <i>P. monodon</i>, <i>P. vannamei</i>  <b>Pathogen:</b> <i>Enterocytozoon hepatopenaei</i>  <b>Size of infected areas or names of infected areas:</b> Oriental Mindoro, Agusan del Norte, Pangasinan, Zambales, Batangas, Surigao del Sur  <b>Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):</b> Polymerase Chain Reaction Test (PCR) / BFAR Central and Regional Fish Health laboratories.</p>
13	<p><b>Tilapia Lake Virus (TiLV)</b>  Tilapia samples analyzed using PCR test showed negative results for Tilapia Lake virus. The samples were collected from Nueva Ecija, Agusan del Norte, Cavite and Bulacan. Examinations were conducted by BFAR Central Fish Health Laboratory.</p>

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

Country: **SINGAPORE\***

 Period: **October - December 2017**

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<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)	(2017)	(2017)	(2017)		
7. Koi herpesvirus disease (KHV)	(2015)	(2015)	(2015)		
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	(2014)	(2014)	(2014)		
9. Viral encephalopathy and retinopathy	(2017)	(2017)	(2017)		
10. Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease	***	***	***		
<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>	***	***	***		
5. Infection with <i>Bonamia ostreae</i>	***	***	***		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	***	***	***		
7. 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)	(2016)	(2016)	(2016)		
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		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Crayfish plague	***	***	***		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		
12. <i>Spiroplasma eriocheiris</i> infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	***	***	***		
2. Infection with <i>Batrachochytrium dendrobatidis</i>	(2017)	(2017)	(2017)		
<b>ANY OTHER DISEASES OF IMPORTANCE</b>					
1 Megalocytivirus (marine & ornamental fish)	(2017)	+	(2017)	III	2
2 <i>Aeromonas salmonicida</i> (in goldfish)	0000	0000	0000		
3 <i>Streptococcus iniae</i> (Asian seabass)	(2017)	+	(2017)	II	1
4 <i>Nocardia</i> sp. (Threadfin)	(2017)	+	(2017)	II	2
5 Goldfish Herpesviral Haematopoietic Necrosis Virus (Goldfish)	0000	+	(2017)	III	3
6 Viral Nervous Necrosis Virus (VNNV)	(2017)	+	(2017)	III	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> <table style="width: 100%; border: none;"> <tbody> <tr> <td style="width: 15%;"></td> <td style="width: 45%;"></td> <td style="width: 15%; text-align: center;">?()</td> <td style="width: 25%;">Presence of the disease suspected but not confirmed in a zone</td> </tr> <tr> <td>+</td> <td>Disease reported or known to be present</td> <td></td> <td></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>Occurrence limited to certain zones</td> <td>-</td> <td>Not reported (but disease is known to occur)</td> </tr> <tr> <td>+?()</td> <td>Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease</td> <td>(year)</td> <td>Year of last occurrence</td> </tr> </tbody> </table>						?()	Presence of the disease suspected but not confirmed in a zone	+	Disease reported or known to be present			+?	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
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<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	Bacterial entities consistent with <i>Streptococcus</i> sp. were detected by histopathology and histochemical staining of lesions from the post-mortem examination of a batch of diseased Asian seabass from a commercial netcage farm; the bacteria was identified as <i>Streptococcus iniae</i> which was isolated from bacteriological culture of the lesions. The fish also had a significant ectoparasite burden (predominantly Trichodinids and fewer Dactylogyrids). The farm took precautions in view of the zoonotic potential of this pathogen, evaluated treatment options for the bacteria and ectoparasite burden, removed dead or moribund fish, and relocated his existing fish.

2	<p>Bacterial entities consistent with <i>Nocardia sp.</i> was detected by histopathology and histochemical staining of granulomatous lesions detected from post-mortem examination of a batch of diseased Threadfin from a commercial netcage farm. Concurrently, <i>Nocardia sp.</i> was isolated from bacteriological culture of the lesions. In addition, Megalocytivirus DNA and Viral Nervous Necrosis Virus (VNNV) RNA were detected from the pooled target organs by real-time PCR and real-time RT-PCR respectively. The farm isolated the affected batch, removed the dead or moribund fish, and identified potential predisposing environmental causes for the infection to prevent future occurrences.</p>
3	<p><b>Goldfish Herpesviral Haematopoietic Necrosis Virus (GFHNV)</b> DNA was detected by Real-time PCR in a batch of recently imported goldfish which experienced low-grade mortalities (up to 2%) while undergoing quarantine. The farm isolated affected fish, and removed moribund and dead fish from the tanks. The affected tanks of fish were placed under detainment which was subsequently lifted when the batch recovered from mortalities. Future exports of this batch are not permitted if GFHNV certification is required.</p>

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

Country: **THAILAND\***

 Period: **October - December 2017**

Item	Disease status <sup>a/</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
<b>DISEASES PREVALENT IN THE REGION</b>	October	November	December		
<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 (SVC)	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia (VHS)	0000	0000	0000	III	
5. Infection with <i>Aphanomyces invadans</i> (EUS)	(2009)	(2009)	(2009)	II	
6. Red seabream iridoviral disease (RSID)	0000	0000	0000	III	
7. Koi herpesvirus disease (KHV)	(2011)	(2011)	(2011)	III	
<b>Non OIE-listed diseases</b>					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	(2017)	(2017)	(2017)	III	
10. Enteric septicaemia of catfish	0000	0000	0000	II	
11. Carp edema virus disease	***	***	***		
<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	0000	0000	0000		
4. Infection with <i>Xenohalotus californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. Acute viral necrosis (in scallops)	***	***	***		
<b>CRUSTACEAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Taura syndrome (TS)	(2015)	(2015)	(2015)	III	
2. White spot disease (WSD)	-	+( )	+( )	III	1
3. Yellowhead disease (YHD)	-	+( )	+( )	III	2
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	-	+( )	+( )	III	3
5. Infectious myonecrosis (IMN)	0000	0000	0000	III	
6. White tail disease (MrNV)	(2017)	(2017)	(2017)	III	
7. Necrotising hepatopancreatitis (NHP)	-	-	-	III	
8. Acute hepatopancreatic necrosis disease (AHPND)	-	-	-	III	
9. Crayfish plague	0000	0000	0000	III	
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	-	-	-	III	
11. Viral covert mortality disease (VCMD) of shrimps	-	-	-	III	
12. <i>Spiroplasma eriocheiris</i> infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

<b>AMPHIBIAN DISEASES</b>					
<b>OIE-listed diseases</b>					
1. Infection with Ranavirus	(2016)	(2016)	(2016)	III	
2. Infection with <i>Batrachochytrium dendrobatidis</i>	0000	0000	0000		
<b>ANY OTHER DISEASES OF IMPORTANCE</b>					

<p><b>DISEASES PRESUMED EXOTIC TO THE REGION<sup>b</sup></b>  <b>LISTED BY THE OIE</b>  <b>Finfish:</b> Infection with 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> <table style="width: 100%; border: none;"> <tbody> <tr> <td style="width: 50%; vertical-align: top;"> <p>+ Disease reported or known to be present                      +? Serological evidence and/or isolation of causative agent but no clinical diseases                      ? Suspected by reporting officer but presence not confirmed                      +() Occurrence limited to certain zones                      +?() Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease</p> </td> <td style="width: 50%; vertical-align: top;"> <p>?() Presence of the disease suspected but not confirmed in a zone                      *** No information available                      0000 Never reported                      - Not reported (but disease is known to occur)                      (year) Year of last occurrence</p> </td> </tr> </tbody> </table>		<p>+ Disease reported or known to be present                      +? Serological evidence and/or isolation of causative agent but no clinical diseases                      ? Suspected by reporting officer but presence not confirmed                      +() Occurrence limited to certain zones                      +?() 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                      *** No information available                      0000 Never reported                      - Not reported (but disease is known to occur)                      (year) Year of last occurrence</p>
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<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 5,363 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance, 36 specimens or 0.67% recorded as PCR positive or carrying <b>WSSV</b> genes. Shrimp farm with positive testing results is subjected to health improvement, movement control, eradication and/or farm disinfection.
2	A total of 5,340 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance, 193 specimens or 3.61% recorded as PCR positive or carrying <b>YHV</b> genes. Shrimp farm with positive testing results is subjected to health improvement, movement control, eradication and/or farm disinfection.
3	A total of 5,363 shrimp samples from shrimp farms had been tested by PCR assay at the DOF's laboratories under active surveillance, 36 specimens or 0.67% recorded as PCR positive for <b>EHP</b> . Shrimp farms with positive testing results have been subjected to shrimp health management control and pond improvement.

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

Country: VIETNAM\*

Period: October - December 2017

Item	Disease status <sup>al</sup>			Level of diagnosis	Epidemiological comment numbers
	Month				
DISEASES PREVALENT IN THE REGION	October	November	December		
<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, III	1
11. Carp edema virus disease	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>	-	-	-		
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with <i>Xenohaliotis californiensis</i>	0000	0000	0000		
5. Infection with <i>Bonamia ostreae</i>	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
6. Infection with <i>Marteilioides chungmuensis</i>	0000	0000	0000		
7. 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		
8. Acute hepatopancreatic necrosis disease (AHPND)	+	+	+	I, III	3
9. Crayfish plague	0000	0000	0000		
<b>Non OIE-listed diseases</b>					
10. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)	0000	0000	0000		
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		
12. <i>Spiroplasma eriocheiris</i> infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		

\*Member of NACA's Asia Regional Aquatic Animal Health Programme

AMPHIBIAN DISEASES					
<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>					

<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> <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <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> </td> <td style="width: 50%; vertical-align: top;"> <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> </td> </tr> </table>				<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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<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>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 and Dong Thap provinces (10.9 ha).</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 10 provinces (total area 346 ha) including Nghe An, Binh Dinh, Ho Chi Minh, Ninh Thuan, Long An, Tien Giang, Ben Tre, Tra Vinh, 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 7 provinces and caused losses in total shrimp culture area of 353 ha. Affected provinces include Thai Binh, Binh Dinh, Ninh Thuan, Tien Giang, Tra Vinh, 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 2017)

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)	4. Carp edema virus disease
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>	
5. Infection with <i>Bonamia ostreae</i>	
<b>1.3 CRUSTACEAN DISEASES</b>	
<b>OIE-listed diseases</b>	<b>Non OIE-listed diseases</b>
1. Taura syndrome (TS)	1. Hepatopancreatic microsporidiosis caused by <i>Enterocytozoon hepatopenaei</i> (HPM-EHP)
2. White spot disease (WSD)	2. Viral covert mortality disease (VCMD) of shrimps
3. Yellowhead disease (YHD)	3. <i>Spiroplasma eriocheiris</i> infection
4. Infectious hypodermal and haematopoietic necrosis (IHHN)	4. Iridovirus in crayfish
5. Infectious myonecrosis (IMN)	
6. White tail disease (MrNV)	
7. Necrotising hepatopancreatitis (NHP)	
8. Acute hepatopancreatic necrosis disease (AHPND)	
9. Crayfish plague	
<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>	
<b>2. DISEASES PRESUMED EXOTIC TO THE REGION</b>	
<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>Marteilia refringens</i>	
2. Infection with <i>Perkinsus marinus</i>	

## Recent Aquatic Animal Health Related Publications

**OIE Aquatic Animal Health Code, 20<sup>th</sup> Edition, 2017.** The OIE Aquatic Animal Health Code (the Aquatic Code) sets out standards for the improvement of aquatic animal health and welfare of farmed fish worldwide, and 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 Competent Authorities of importing and exporting countries for early detection, reporting and control of agents pathogenic to aquatic animals and to prevent their transfer via international trade in aquatic animals and their products, while avoiding unjustified sanitary barriers to trade. The standards in the Aquatic Code have been formally adopted by the World Assembly of OIE Delegates, which constitutes the organisation's highest decision-making body. This 20th edition incorporates modifications to the Aquatic Code agreed at the 85th General Session in May 2017. It includes: revisions to several definitions in the glossary; Chapter 1.2. 'Criteria for listing aquatic animal diseases' has been extensively amended to align with the corresponding chapter in the OIE Terrestrial Animal Health Code; a new disease, *Batrachochytrium salamandrivorans*, has been added to Chapter 1.3. 'Diseases listed by the OIE' and some disease names have been amended; minor amendments have been made in Chapters 4.3. 'Disinfection of aquaculture establishments and equipment', 4.4. 'Recommendations for surface disinfection of salmonid eggs' and 5.1. 'General obligations related to certification'; a number of horizontal amendments were made in all crustacean disease-specific chapters, to improve readability. In addition, the list of susceptible species in Article X.X.2. in Chapters 9.2., 9.3., 9.4., 9.5., 9.6. and 9.8. was reviewed and amended, where relevant, after consideration of the application of the 'Criteria for listing species as susceptible to infection with a specific pathogen' (Chapter 1.5.); a new chapter on acute hepatopancreatic necrosis disease (Chapter 9.1.) has been added; Article X.X.8. in all disease-specific chapters was revised to more adequately describe the requirements for the importation of aquatic animals for aquaculture from a country, zone or compartment not declared free from disease X; the year that a chapter was first adopted and the year of last revision are noted at the end of each chapter. In this regard the OIE has made every endeavour to ensure the accuracy of this information based on our historical records. The Aquatic Animal Health Code is available for free download <http://www.oie.int/en/standard-setting/aquatic-code/access-online/>

**OIE Manual of Diagnostic Tests for Aquatic Animals, 2017.** The purpose of this Manual of Diagnostic Tests for Aquatic Animals (Aquatic Manual) is to provide a uniform approach to the detection of the diseases listed in the OIE Aquatic Code, so that the requirements for health certification in connection with disease prevention and control programmes, and trade in aquatic animals and aquatic animal products can be met. Although many publications exist on the detection and control of aquatic animal diseases, the Aquatic Manual is a key and unique document describing the methods that should be applied to the OIE-listed diseases in aquatic animal health laboratories all over the world, thus increasing efficiency and promoting improvements in aquatic animal health world-wide. The requirements published in this Aquatic Manual are recognised as international standards by the WTO. The manual is available for free download at <http://www.oie.int/en/standard-setting/aquatic-manual/access-online/>

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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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