2018/2

QUARTERLY
AQUATIC ANIMAL DISEASE REPORT
(Asia and Pacific Region)

April – June 2018

Published by

Network of Aquaculture Centres in Asia-Pacific

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October 2018

Network of Aquaculture Centres in Asia-Pacific, World Organisation for Animal Health (OIE) Regional Representation for Asia and the Pacific, and Food and Agriculture Organization of the United Nations. October, 2018. *Quarterly Aquatic Animal Disease Report (Asia and Pacific Region)*, 2018/1, April – June 2018. NACA, Bangkok, Thailand and OIE-RRAP, Tokyo, Japan.

Contents

Foreword

Emergency Preparedness and Antimicrobial Use/Resistance (AMU/AMR) Consultations in Aquaculture

Three important consultations on aquatic animal health management in the region have been organized in Bangkok in August and September 2018. These are the following:

- ASEAN Regional Technical Consultation on Aquatic Emergency Preparedness and Response Systems for Effective Management of Transboundary Disease Outbreaks in Southeast Asia, 20-22 August 2018;
- Regional Consultation and Related Study on Antimicrobial Resistance (AMR) Risk to Aquaculture in Asia, 4-6 September 2018.
- Preliminary Consultation on Monitoring of AMR in Bacterial Pathogens in Aquacutlure, 16-17 September 2018.

The ASEAN Regional Consultation on Aquatic Emergency Preparedness and Response Systems for Effective Management of Transboundary Disease Outbreaks in Southeast Asia was funded by Japan-ASEAN Integration Fund (JAIF) and organised by the Department of Fisheries, Thailand and SEAFDEC Aquaculture Department, Philippines. The objective of the consultation was to bring together ASEAN member states and technical experts to discuss the current status of emergency animal disease preparedness and response systems, and to identify gaps and opportunities for regional cooperation in management of transboundary disease. The consultation was tasked with:

- Assessing the existing regulatory framework, operating procedures and national aquatic animal health management strategies of ASEAN member states.

- Assessing the need for a regional ASEAN emergency preparedness and response system.
- Identifying gaps and priority areas for R&D collaboration.
- Enhancing cooperation amongst member states, international organisations and other stakeholders in management of emergency aquatic animal disease outbreaks.

The consultation provided an overview of the current status of emergency disease preparedness and response systems and regulatory arrangements in the region, with presentations made by Brunei Darussalam, Cambodia, Indonesia, Japan, Lao PDR, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. Technical presentations included:

- A demonstration of DisasterAWARE, a web-based software system used by many agencies around the world to visualise data and manage response to different types of disaster and natural hazards, by Dr Chris Chiesa, Deputy Executive Director of the Pacific Disaster Center.
- A historical overview of transboundary disease incidents and impact, by Dr Eduardo Leaño, NACA's Aquatic Animal Health Programme Coordinator.
- The trade implications of disease outbreaks, by Dr Jing Wang of the World Organization for Animal Health (OIE).
- The response to the recent examples of tilapia lake virus (TiLV) was described by Dr Seangchan Senapin, Deputy Director of Centex Shrimp and Head of the Shrimp Molecular Biology and Biotechnology Laboratory, National Science and Technology Development Agency, Thailand.
- Another recent transboundary disease emergency, AHPND in shrimp, was described by Dr Kallaya Sritunyalucksana, National Center of Genetic Engineering and Biotechnology (BIOTEC), Thailand.
- Presentations on import risk analysis and assessment and emergency preparedness and response systems as an element of an aquatic animal health management and biosecurity strategy, by Dr Melba Reantaso, FAO.

The two consultations on antimicrobial resistance (AMR) were jointly organised by FAO and NACA with much appreciated financial support from FAO and USAID. The consultations were attended by seventeen governments in the Asia-Pacific region, the World Organization for Animal Health (OIE), WorldFish and Chulalongkorn University.

The purpose of the regional consultations was to identify actions and develop a strategy to address AMR risks associated with aquaculture, based on an assessment of the status of AMU and AMR. This initiative is part of a broader, coordinated "One Health" movement across the entire human health and agricultural sectors to address prudent usage of antimicrobial substances to reduce AMR risks.

The first consultation addressed the status of AMU and AMR in the region, current national initiatives and regulatory instruments, and the development of a regional framework for AMR surveillance. Issues discussed included:

- The status of antimicrobial usage and antimicrobial resistance in the region.
- Antimicrobial resistance surveillance initiatives in Asian aquaculture.
- Development of a framework for antimicrobial resistance surveillance in Asia.
- A regional overview of current laws and regulations relevant to antimicrobial usage and resistance.
- Antimicrobial resistance in important bacterial diseases of aquaculture.

The discussions paved the way for the second consultation, which concerned the development of a regional guideline on AMR surveillance in aquaculture. Issues addressed included:

- Developing the framework for antimicrobial resistance monitoring and surveillance in Asia, including harmonisation of national antimicrobial resistance surveillance and monitoring programs for aquatic animals under the OIE Aquatic Animal Health Code; risk analysis of foodborne antimicrobial resistance and the Codex Alimentarius; methods and performance standards on AST from aquatic bacterial isolates and the Assessment Tool for Laboratory and AMR Surveillance Systems (ATLASS).
- Establishing the principles, purpose and objectives of the AMR surveillance guidelines for aquaculture including design, priorities and sampling strategies, methods for bacterial isolation, development of antibiotic panels and isolate storage.
- Guidelines on data management, including tools, storage and sharing of AMR surveillance data and implementation plans.

The endpoint envisaged for this initiative is the development of a guideline and framework for AMR monitoring and surveillance in Asia that will include regional guidelines on sampling approaches, laboratory testing and data management. These are anticipated to contribute towards the development of evidence-based treatments guidelines for common pathogens in aquatic animals and to reinforce good veterinary practices in lieu of unwarranted metaphylaxis and broad-spectrum preventative treatments.

Sources:
https://enaca.org/index.php?id=1009&title=asean-consultation-on-emergency-aquatic-animal-disease-preparedness-and-response

https://enaca.org/index.php?id=1008&title=consultations-address-antimicrobial-risk-in-aquaculture

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: April - June 2018**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
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 *Aphanomyces invadans* (EUS)	-(2017)	-(2017)	-(2017)		2
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	-(2018)	-(2018)	+	III	3
10.Enteric septicaemia of catfish	-(2014)	-(2014)	-(2014)		4
11. Carp edema virus disease	***	***	***		
12. Tilapia lake virus (TiLV)	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	+?	-(2018)	-(2018)	III	5
2. Infection with *Perkinsus olseni*	+(west zone SA)	+?	-(2018)	I	6
3. Infection with abalone herpesvirus	-(2011)	-(2011)	-(2011)		7
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with *Bonamia ostreae*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000		
2. Infection with white spot syndrome virus	-(2018)	-(2018)	-(2018)		8
3. Infection with yellow head virus genotype 1	0000	0000	0000		
4. Infection with infectious hypodermal and haematopoietic	-(2018)	-(2018)	-(2018)		9
5. Infection with infectious myonecrosis virus	0000	0000	0000		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-(2008)	-(2008)	-(2008)		10
7. Infection with *Hepatobacter penaei* (Necrotising	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		

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

12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-(2008)	-(2008)	-(2008)		11
2. Infection with *Batrachochytrium dendrobatidis*	+	-(2018)	-(2018)	III	12
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
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	**Epizootic haematopoietic necrosis** 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	**Infection with *Aphanomyces invadans* (EUS)** 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	**Viral encephalopathy and retinopathy (VER)** 1. **Reported in** Queensland in June 2018, passive surveillance; 2. **Species affected** – juvenile Queensland grouper (*Epinephelus lanceolatus*); 3. **Clinical signs** – none; 4. **Pathogen** – Betanodavirus; 5. **Mortality rate** – up to 50% of stock; 6. **Economic loss** – N/A; 7. **Geographic extent** – one farm; 8. **Containment measures** – none; 9. **Laboratory confirmation** – qPCR; 10. **Publications** – nil. VER is known to occur previously in 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.
4	**Enteric septicaemia of catfish (*E. ictaluri*)** was not reported this period despite 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. It was reported from clinically normal fish from a single river in Queensland (last reported 2014), the only occurence of E. ictaluri in wild fish populations in Australia. Active surveillance throughout Northern Australia has found no evidence of E. ictaluri in any other wild fish populations. E. ictaluri has been detected previously in association with imported ornamental fish including; the Northern Territory in a closed aquarium (last reported in 2011), and in PC2 containment facilities in Tasmania (last reported in 2001) and Queensland (last reported 2008).
5	**Infection with *Bonamia exitiosa*** 1. **Reported in** South Australia in April 2018, passive surveillance; 2. **Species affected** – flat oyster (*Ostrea angasi*); 3. **Clinical signs** – none; 4. **Pathogen** – *Bonamia exitiosa*; 5. **Mortality rate** – N/A; 6. **Economic loss** – N/A; 7. **Geographic extent** – Coffin Bay and Streaky Bay farming regions; 8. **Containment measures** – none; 9. **Laboratory confirmation** – qPCR, tissue smears, histology; 10. **Publications** – nil. *Bonamia exitiosa* 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).

6	**Infection with *Perkinsus olseni*** 1. **Reported in** South Australia in April 2018, Western Australia in May 2018, passive surveillance; 2. **Species affected** – greenlip abalone (*H. laevigata*), blacklip abalone (*Haliotis rubra*); 3. **Clinical signs** – clinical and sub-clinical; 4. **Pathogen** – *Perkinsus olseni*; 5. **Mortality rate** – none; 6. **Economic loss** – N/A; 7. **Geographic extent** –western fishery zone in SA, sentinel abalone at one farm in WA; 8. **Containment measures** – closure on shucking at sea in affected areas, movement restrictions in SA; N/A in WA; 9. **Laboratory confirmation** – RFTM; 10. **Publications** – nil. *Perkinsus olseni* is known to occur 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).
7	**Infection with abalone herpesvirus (abalone viral ganglioneuritis)** 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).
8	**Infection with white spot syndrome virus (white spot disease)** is known to occur previously in Queensland (last reported March 2018). As a result of detection of WSSV in wild crustaceans, movement and fishing restrictions in the Moreton Bay region have been in place to contain white spot disease and prevent new outbreaks. The latest round of surveillance testing of wild crustaceans outside the movement restriction area, along the east coast of Queensland (Cairns, Bundaberg, Fraser Coast and Moreton Bay) continued through April and May. All tests have been negative for WSSV. White spot disease has never been reported despite active and passive surveillance in New South Wales, South Australia, Western Australia, Victoria and Northern Territory. Never reported in Tasmania despite passive surveillance. No information available for the Australian Capital Territory (no marine water responsibility).
9	**Infection with infectious hypodermal and haematopoietic necrosis virus** is known to occur previously in Queensland (last reported March 2018) and the Northern Territory (last reported 2003). Passive surveillance and never reported in New South Wales, South Australia, Victoria and Western Australia. No information available this period in the Australian Capital Territory (no marine water responsibility) and Tasmania (susceptible species not present).
10	**Infection with *Macrobrachium rosenbergii* nodavirus (White tail disease)** 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).
11	**Infection with *Ranavirus*** 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.

12	**Infection with *Batrachochytrium dendrobatidis*** 1. **Reported in** Queensland in April 2018, passive surveillance; 2. **Species affected** – Kroombit tinker frog (*Taudactylus pleione*); 3. **Clinical signs** – none; 4. **Pathogen** – *Batrachochytrium dendrobatidis*; 5. **Mortality rate** – N/A; 6. **Economic loss** – N/A; 7. **Geographic extent** –Kroombit Tops National Park; 8. **Containment measures** – quarantine in wildlife sanctuary; 9. **Laboratory confirmation** – qPCR; 10. **Publications** – nil. Infection with *Batrachochytrium dendrobatidis* is know to occur previously in Victoria (last reported 2016), Tasmania (last reported 2013), New South Wales (last reported 2012), and Western Australia (last reported 2008). Passive surveillance and never reported from the Northern Territory. No information available this period in the Australian Capital Territory and South Australia.

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

Country: CHINESE TAIPEI **Period: April - June 2018**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	***	***	***		
4. Viral haemorrhagic septicaemia (VHS)	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	-	-	-		
6. Red seabream iridoviral disease (RSID)	-	+	+	LDCCs	1
7. Koi herpesvirus disease (KHV)	-	-	-		
Non OIE-listed diseases					
8. Grouper iridoviral disease	+	+	+	LDCCs	2
9. Viral encephalopathy and retinopathy	+	+	+	LDCCs	3
10.Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease	***	***	+	LDCCs	4
12. Tilapia lake virus (TiLV)	-	-	-		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpesvirus	-	-	-		
4. Infection with *Xenohaliotis californiensis*	***	***	***		
5. Infection with *Bonamia ostreae*	***	***	***		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	***	***	***		
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	-	-	-		
2. Infection with white spot syndrome virus	+	+	+	LDCCs	5
3. Infection with yellow head virus genotype 1	-	-	-		
4. Infection with infectious hypodermal and haematopoietic	-	-	-		
5. Infection with infectious myonecrosis virus	***	***	***		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-		
7. Infection with *Hepatobacter penaei* (Necrotising	***	***	***		
8. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***		
9. Infection with *Aphanomyces astaci* (Crayfish plague)	-	-	-		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		

12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-	-	-		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
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	1. Pingtung county. 4 outbreak reports from 4 farms. 2. Date: (1) May 1; (2), (3) Jun 12; (4) Jun 15. 3. Species: (1) Lates calcarifer; (2) Morone saxatilis; (3) Epinephelus fuscoguttatus x Epinephelus lanceolatus; (4) Trachinotus blochii. 4. Mortality rate: low. 5. Total number of death: (1) 50/18000; (2) 4000/25000; (3) 18/450; (4) 0/10000.

2	1. Kaohsiung city, Pingtung county. 81 outbreak reports from 59 farms. 2. Date: (1) Apr 9; (2) Apr 13; (3), (4) Apr 16; (5) Apr 17; (6), (7) Apr 19; (8), (9), (10) Apr 21; (11), (12), (13), (14) Apr 24; (15), (16) Apr 26; (17) Apr 27; (18), (19), (20), (21), (22) Apr 28; (23), (24), (25), (26) Apr 30; (27), (28), (29), (30), (31) May 1; (32), (33) May 2; (34), (35), (36) May 4; (37) May 7; (38), (39), (40), (41) May 9; (42), (43) May 11; (44) May 14; (45), (46) May 15; (47), (48) May 17; (49), (50), (51), (52), (53) May 18; (54), (55), (56), (57), (58), (59) May 19; (60), (61), (62), (63), (64), (65) May 24; (66) May 25; (67) May 26; (68) May 28; (69) Jun 5; (70), (71), (72) Jun 9; (73) Jun 12; (74) Jun 16; (75), (76), (77), (78), (79) Jun 23; (80) Jun 24; (81) Jun 26. 3. Species: (1), (2), (3), (4), (5), (6), (7), (8), (9), (15), (16), (17), (18), (19), (20), (21), (22), (25), (26), (27), (29), (30), (31), (32), (33), (36), (37), (38), (39), (40), (41), (42), (43), (44), (45), (47), (48), (54), (55), (57), (58), (59), (60), (61), (62), (63), (64), (65), (66), (67), (68), (69), (70), (71), (74), (75), (77), (78), (79), (80), (81) Lates calcarifer; (10), (23), (24), (34), (72), (73) Epinephelus fuscoguttatus x Epinephelus lanceolatus; (11), (12), (13), (49), (50), (51), (52) Trachinotus blochii; (14), (53) Epinephelus coioides; (28) Cichlasoma managuense; (35) Epinephelus lanceolatus; (56) Zebrasoma flavescens; (46), (76) Epinephelus malabaricus. 4. Mortality rate: low. 5. Total number of death: (1), (5), (8), (16), (27), (30), (31), (36), (38), (39), (40), (41), (42), (57), (58), (63), (75), (77), (78), (79) 0/40000; (2), (7), (15), (32), (33), (37), (54), (66), (67), (70) 0/30000; (29) 3000/30000; (3) 0/26000; (4), (22), (55), (68) 0/32000; (6), (10), (11), (12), (13), (14), (34), (46), (47), (49), (50), (51), (52), (53), (60), (64), (69), (76) 0/10000; (9), (17), (18), (20), (21), (43), (59), (80) 0/23000; (19) 0/29000; (23) 0/5000; (24) 0/3000; (25) 0/24000; (26) 0/38000; (28) 6000/100000; (35) 0/1000; (44), (45), (48), (61), (62), (65) 0/20000; (56) 0/50; (71) 0/45000; (72) 0/4000; (73) 18/450; (74), (81) 0/50000.
3	1. Kaohsiung city, Pingtung county. 23 outbreak reports from 16 farms. 2. Date: (1) Apr 6; (2), (3) Apr 10; (4) Apr 12; (5) Apr 17; (6) Apr 19; (7), (8) Apr 21; (9) Apr 23; (10) Apr 27; (11) Apr 28; (12) May 1; (13) May 4; (14) May 9; (15) May 15; (16) May 19; (17), (18) May 24; (19) Jun 9; (20) Jun 11; (21) Jun 13; (22) Jun 23; (23) Jun 30. 3. Species: (1), (5), (8) Epinephelus fuscoguttatus x Epinephelus lanceolatus; (2), (7), (11), (16), (17) Epinephelus lanceolatus; (3), (4), (6), (10), (12), (13), (14), (15), (18), (19), (20), (21), (22), (23) Epinephelus malabaricus; (9) Epinephelus coioides. 4. Mortality rate: low. 5. Total number of death: (1) 0/8000; (2), (7), (16) 0/1000; (3), (4), (5), (8), (10), (12), (13), (14), (17), (18), (19), (20), (22) 0/10000; (6) 0/20000; (9) 0/200000; (11) 0/9000; (15) 0/25000; (21) 0/40000; (23) 0/12000.
4	1. Yilan county. 1 outbreak report from 1 farm. 2. Date: (1) Jun 26. 3. Species: (1) Cyprinus carpio. 4. Mortality rate: medium. 5. Total number of death: (1) 7/15.
5	1. Changhua county, Chiayi county, Pingtung county. 10 outbreak reports from 9 farms. 2. Date: (1) Apr 12; (2) Apr 27; (3) May 3; (4) May 17; (5) May 24; (6), (7), (8), (9) Jun 25; (10) Jun 27 . 3. Species: (1) Caridina serrata var.; (2), (3) Caridina multidentata; (4), (5), (10) Litopenaeus vannamei; (6), (8), (9) Ornamental shrimps; (7) Neocaridina denticulata sinensis. 4. Mortality rate: low. 5. Total number of death: (1), (3) 0/20000; (2) 0/10000; (4) 0/1000000, (5) 10/100000, (6), (7), (9) 0/40000, (8) 0/15000, (10) 0/700000.

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

Country: HONG KONG SAR, CHINA* Period: April - June 2018

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
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 *Aphanomyces invadans* (EUS)	0000	0000	0000	III	
6. Red seabream iridoviral disease (RSID)	-	-	-	III	
7. Koi herpesvirus disease (KHV)	-	-	-	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-	III	
9. Viral encephalopathy and retinopathy	-	?	-	III	1
10.Enteric septicaemia of catfish	0000	0000	0000	II	
11. Carp edema virus disease	***	***	***		
12. Tilapia lake virus (TiLV)	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	II	
2. Infection with *Perkinsus olseni*	0000	0000	0000	II	
3. Infection with abalone herpesvirus	0000	0000	0000	II	
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000	II	
5. Infection with *Bonamia ostreae*	***	***	***		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
7. Acute viral necrosis (in scallops)	0000	0000	0000	II	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000	III	
2. Infection with white spot syndrome virus	-	-	-	III	
3. Infection with yellow head virus genotype 1	0000	0000	0000	III	
4. Infection with infectious hypodermal and haematopoietic	0000	0000	0000	II	
5. Infection with infectious myonecrosis virus	0000	0000	0000	II	
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	II	
7. Infection with *Hepatobacter penaei* (Necrotising	***	***	***	II	
8. Acute hepatopancreatic necrosis disease (AHPND)	***	***	***	II	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000	II	
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		

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12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	(1 Apr 2017)	(1 Apr 2017)	(1 Apr 2017)	III	
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000	III	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
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	Sabah hybrid grouper fry was suspected to be suffering from Viral encephalopathy and retinopathy (VER). The size of affected raft was approximately 847 m^2. Fifty percent mortality was reported. The farmer was advised to carry out stress-reducing measures such as less feeding and increasing aeration.
2	
3	

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

Country: INDIA* **Period: April - June 2018**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
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 *Aphanomyces invadans* (EUS)	-	-	-		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	0000	0000	0000		
Non OIE-listed diseases					
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	-	-	-		
12. Tilapia lake virus (TiLV)	+( )	+( )	+( )	III	1
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	+( )	+( )	-	II,III	2
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with *Bonamia ostreae*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000		
2. Infection with white spot syndrome virus	-	+( )	+( )	III	3
3. Infection with yellow head virus genotype 1	0000	0000	0000		
4. Infection with infectious hypodermal and haematopoietic	-	+( )	+( )	III	4
5. Infection with infectious myonecrosis virus	(2017)	(2017)	(2017)		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-		
7. Infection with *Hepatobacter penaei* (Necrotising	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	+( )	+( )	+( )	III	5
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		

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12. *Spiroplasma eriocheiris* infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
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	**Tilapia lake virus disease** was reported from very limited areas of Thiruvananthpuram and Thrissur districts of Kerala.
2	**Infection with *Perkinsus olseni*** was reported in farmed samples of *Perna viridis* from Kasaragode district of Kerala. Infection with *P. olseni* was also reported in wild samples of *P. viridis* from Kannur, Kerala, and *Paphia malabarica* from Kasaragode district of Kerala.
3	**Infection with white spot syndrome virus (White spot disease)** was reported in *Litopenaeus vannamei* from very limited areas of Pudukkottai, Nagapattinam, Thiruvallur, Villupuram districts of Tamil Nadu; Balasore and Bhadrak districts of Odisha; Srikakulam, East Godavari, West Godavari and Nellore districts of Andhra Pradesh; and Thrissur district of Kerala. WSD was also reported in *Penaeus monodon* in South 24 Parganas and East Midnapur districts of West Bengal.

4	**Infection with infectious hypodermal and haematopoietic necrosis virus** was reported in *Litopenaeus vannamei* from from very limited areas of West Godavari district, Andhra Pradesh; and in Penaeus monodon from Uttar Kannada district, Karnataka and Alappuzha district of Kerala.
5	**Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei*** was reported in *Litopenaeus vannamei* from Balasore and Bhadrak districts of Odisha; Uttar Kannada, Dakshina Kannada and Udupi districts of Karnataka; Thrissur district of Kerala; North 24 Parganas district of West Bengal; Nagapattinam, Thiruvallur, Villupuram, Thanjavur, Pudukkottai, Thoothukudi districts of Tamil Nadu; Nellore, East Godavari and West Godavari district of Andhra Pradesh; and Penaeus monodon from North 24 Parganas district, West Bengal.

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

Country: JAPAN* **Period: April - June 2018**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	I	
2. Infectious haematopoietic necrosis	+	+	+	I,III	1
3. Spring viraemia of carp (SVC)	0000	0000	0000	I	
4. Viral haemorrhagic septicaemia (VHS)	+	+	-	I,III	2
5. Infection with *Aphanomyces invadans* (EUS)	-(2015)	-(2015)	-(2015)	I	
6. Red seabream iridoviral disease (RSID)	+	-	+	III	3
7. Koi herpesvirus disease (KHV)	+	+	+	III	4
Non OIE-listed diseases					
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	
12. Tilapia lake virus (TiLV)	0000	0000	0000	I	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	I	
2. Infection with *Perkinsus olseni*	-(2007)	-(2007)	-(2007)	I	
3. Infection with abalone herpesvirus	0000	0000	0000	I	
4. Infection with *Xenohaliotis californiensis*	-(2015)	-(2015)	-(2015)	I	
5. Infection with *Bonamia ostreae*	0000	0000	0000	I	
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	-(2014)	-(2014)	-(2014)	I	
7. Acute viral necrosis (in scallops)	0000	0000	0000	I	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000	I	
2. Infection with white spot syndrome virus	-	+	-	III	6
3. Infection with yellow head virus genotype 1	0000	0000	0000	I	
4. Infection with infectious hypodermal and haematopoietic	0000	0000	0000	I	
5. Infection with infectious myonecrosis virus	0000	0000	0000	I	
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	I	
7. Infection with *Hepatobacter penaei* (Necrotising	0000	0000	0000	I	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	I	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000	I	
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000	I	
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000	I	

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12. *Spiroplasma eriocheiris* infection	0000	0000	0000	I	
13. Iridovirus in crayfish	0000	0000	0000	I	
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-(2012)	-(2012)	-(2012)	I	
2. Infection with *Batrachochytrium dendrobatidis*	-(2009)	-(2009)	-(2009)	I	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
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	**Infectious haematopoietic necrosis (IHN)** 1) **Reported in** 16 prefectures 2) **Species affected:** Amago (*O. masou ishikawae*), Yamame (*O. masou*), Rainbow trout (*O.mykiss*), Coho salmon (O. kisutch); 3) **Disease characteristics:** Mortality, anemia, haemorrahges, exophthalmos, discoloration, elanrgement of the spleen, blackening of the body, bolshevization of gills, ascites, unusual swimming, thinness ; 4) **Pathogen:** Infectious haematopoietic necrosis virus 5) **Mortality rate:** 1-87% 6) **Economic loss:** － 7) **Names of infected areas:** Honshu, Shikoku, Kyushu, Hokkaido; 8) **Preventive/control measures taken:** Feed restriction, disinfection of facilities and tools, movement control, removal of dead fish, notification to concerned authorities, culling of infected fish. 9) **Laboratories for confirmation:** Cell culture, PCR, RT-PCR, isolation of the virus, observation of CPE, observation of disease signs by prefectural research laboratories 10) **Publications:** None

2	**Viral haemorrhagic septicaemia (VHS)** 1) **Reported in** 3 prefectures 2) **Species affected:** Japanese flounder (*Paralichthus olivaceus*), red seabream (*Pagrus major*); 3) **Disease characteristics:** Mortality, petecheae, ascites, brownness of gills, blackening of the body; 4) **Pathogen:** Viral haemorrhagic seticaemia virus 5) **Mortality rate:** 1-6% 6) **Economic loss:** － 7) **Names of infected areas:**, Honshu, Shikoku, Kyushu 8) **Preventive/control measures taken:** Removal of dead fish, notification to concerned authorities, disinfection of facilities and tools. 9) **Laboratory confirmation:** PCR by the prefectural research laboratory 10) **Publications:** None
3	**Red seabream iridiviral disease (RSID)** 1) **Reported in** 3 prefectures 2) **Species affected:** Red seabream (*Pagrus major*) and Malabar grouper (*Epinephelus malabaricus*); 3) **Disease characteristics:** Mortality, petecheae, black spots on gills, abnormal swimming; 4) **Pathogen:** Viral haemorrhagic seticaemia virus 5) **Mortality rate:** 0-30% 6) **Economic loss:** － 7) **Names of infected areas:** Kyushu, Okinawa 8) **Preventive/control measures taken:** Removal of dead fish, movement control. 9) **Laboratory confirmation:** Inspection of IFAT by prefectural research laboratories. 10) **Publications:** None
4	**Koi herpesvirus disease (KHV)** 1) **Reported in** 6 prefectures 2) **Species affected:** Koi carp (*Cyrpinus carpio*); 3) **Disease characteristics:** Mortality; 4) **Pathogen:** Koi herpesvirus; 5) **Mortality rate:** 0-100% 6) **Economic loss:** － 7) **Names of infected areas:** Honshu, Kyushu, Shikoku; 8) **Preventive/control measures taken:** Movement control, culling of infected fish, disinfection of ponds, notification to concerned authorities, stopping of drainage, disinfection of facilities and tools. 9) **Laboratory confirmation:** PCR by National Research Institute of Aquaculture and prefectural research laboratories. 10) **Publications:** Website of Ministry of Agriculture, Forestry and Fisheries (MAFF), website of Prefectures, notification to press.

5	**Viral encephalopathy and retinopathy (VER)** 1) **Reported in** 1 prefecture 2) **Species affected:** Pacific bluefin tuna (*Thunnus orientalis*); 3) **Disease characteristics:** Enlargement of swim bladder; 4) **Pathogen:** Betanodavirus; 5) **Mortality rate:** 10% 6) **Economic loss:** － 7) **Names of infected areas:** Kyushu; 8) **Preventive/control measures taken:** Removal of dead fish. 9) **Laboratory confirmation:** PCR prefectural research laboratory. 10) **Publications:** none.
6	**Whote spot disease (WSD)** 1) **Reported in** 2 prefectures; 2) **Species affected:** Kuruma prawn (*Marsupenaeus japonicus*); 3) **Disease characteristics:** Mortality; 4) **Pathogen:** White spot syndrome virus; 5) **Mortality rate:** 0-9% 6) **Economic loss:** － 7) **Names of infected areas:** Honsyu, Kyushu; 8) **Preventive/control measures taken:** Disinfection and disposal of fertilized egg, disinfection of facilities and tools, removal of dead shrimps, culling of infected shrimps. 9) **Laboratory confirmation:** PCR prefectural research laboratories. 10) **Publications:** none.

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

Country: MALAYSIA* **Period: January - March 2018**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
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 *Aphanomyces invadans* (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
Non OIE-listed diseases					
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		
12. Tilapia lake virus (TiLV)	(2017)	(2017)	(2017)	II,III	7
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	?(2016)	?(2016)	?(2016)	II,III	8
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with *Bonamia ostreae*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	-	-	-	III	9
2. Infection with white spot syndrome virus	?(2016)	?(2016)	?(2016)	III	10
3. Infection with yellow head virus genotype 1	-	-	-	III	11
4. Infection with infectious hypodermal and haematopoietic	(2016)	(2016)	(2016)	III	12
5. Infection with infectious myonecrosis virus	(2014)	(2014)	(2014)	III	13
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-		
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	(2014)	(2014)	(2014)		14
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	(2016)	(2016)	(2016)		15
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		

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12. *Spiroplasma eriocheiris* infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. Enteric red mouth disease (ERD)	0000	0000	0000	I,II,III	16
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
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	**Spring viraemia of carp (SVC)** No positive case was detected (PCR) during DoF active surveillance programme.
2	**Infection with *Aphanomyces invadans* (EUS)** No positive case was detected (gross observation) during DoF active surveillance programme.
3	**Red seabream iridoviral disease (RSID)** No positive case was detected (PCR) during DoF active surveillance programme.
4	**Koi herpesvirus disease (KHV)** 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	**Grouper iridoviral diesease (GIV)** No positive case was detected (PCR) during DoF active surveillance programme.
6	**Viral encephalopathy and retinopathy (VER)** 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).
7	**Tilapia lake virus (TiLV)** No positive case was detected (PCR) during DoF surveillance programme. TiLV is known to have occurred previously in Kedah (June 2017), Perlis and Serawak (July 2017) and Negeri Sembilan (October 2017)
8	**Infection with *Perkinsus olseni*** No positive case was detected (PCR) during DoF active surveillance programme. Infection with *Perkinsus olseni* was suspected to occur in 2016, but not confirmed in a zone.
9	**Infection with Taura syndrome virus (TSV)** No positive case was detected (PCR) during DoF active surveillance programme.
10	**Infection with White spot syndrome virus (WSD)** No positive case was detected (PCR) during DoF active surveillance programme. WSD was suspected to occur in 2016 but not confirmed in a zone.
11	**Infection with Yellow head virus (YHD)** No positive case was detected (PCR) during DoF active surveillance programme.
12	**Infection with Infectious hypodermal and haematopoietic virus (IHHNV)** No positive case was detected (PCR) during DoF active surveillance programme. IHHNV is known to have occurred previously in the state of Terengganu (2016).
13	**Infection with Infectious myonecrosis virus (IMNV)** No positive case was detected (PCR) during DoF active surveillance programme. IMNV is known to have occurred previously in the state of Sabah (2014).
14	**Acute hepatopancreatic necrosis disease (AHPND)** No positive case was detected (PCR) during DoF active surveillance programme. AHPND is kown to have occurred previously in several states in Malaysia (2014)
15	**Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)** 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)
16	**Enteric redmouth disease (ERD)** No positive case was detected (biochemical test and PCR) during DoF active surveillance programme.

Country: MALAYSIA* **Period: April - June 2018**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
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 *Aphanomyces invadans* (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
Non OIE-listed diseases					
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		
12. Tilapia lake virus (TiLV)	+	(2018)	(2018)	II,III	7
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	?(2016)	?(2016)	?(2016)	II,III	8
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with *Bonamia ostreae*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	-	-	-	III	9
2. Infection with white spot syndrome virus	?(2016)	?(2016)	?(2016)	III	10
3. Infection with yellow head virus genotype 1	-	-	-	III	11
4. Infection with infectious hypodermal and haematopoietic	(2016)	(2016)	(2016)	III	12
5. Infection with infectious myonecrosis virus	(2014)	(2014)	+	III	13
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-		
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	(2014)	(2014)	(2014)		14
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	(2016)	(2016)	(2016)		15
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		

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12. *Spiroplasma eriocheiris* infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. Enteric red mouth disease (ERD)	0000	0000	0000	I,II,III	16
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
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	**Spring viraemia of carp (SVC)** No positive case was detected (PCR) during DoF active surveillance programme.
2	**Infection with *Aphanomyces invadans* (EUS)** No positive case was detected (gross observation) during DoF active surveillance programme.
3	**Red seabream iridoviral disease (RSID)** No positive case was detected (PCR) during DoF active surveillance programme.
4	**Koi herpesvirus disease (KHV)** 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	**Grouper iridoviral diesease (GIV)** No positive case was detected (PCR) during DoF active surveillance programme.
6	**Viral encephalopathy and retinopathy (VER)** 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).
7	**Tilapia lake virus (TiLV)** 1) **Origin of the disease or pathogen (history of the disease):** An outbreak was observed in Melaka. 2) **Species affected:** hybrid red tilapia, *Oreochromis* spp. 3) **Disease characteristics (unusual clinical signs or lesions):** None. 4) **Pathogen (isolated.sero-typed):** Orthomyxoviridae, Tilapia lake virus 5) **Mortality rate (high.low; decreasing/increasing):** No mortality. 6) **Death toll (economic loss, etc.):** None. 7) **Size of infected areas or names of infected areas:** Closed pond area. 8) **Preventive/Control measures taken:** Movement restriction and monitoring. 9) **Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):** Fisheries Biosecurity Laboratoy Johor. 10) **Published paper (articles in journals/website, etc.):** TiLV is known to have occurred previously in Kedah (June 2017), Perlis and Serawak (July 2017) and Negeri Sembilan (October 2017)
8	**Infection with *Perkinsus olseni*** No positive case was detected (PCR) during DoF active surveillance programme. Infection with *Perkinsus olseni* was suspected to occur in 2016, but not confirmed in a zone.
9	**Infection with Taura syndrome virus (TSV)** No positive case was detected (PCR) during DoF active surveillance programme.
10	**Infection with White spot syndrome virus (WSD)** No positive case was detected (PCR) during DoF active surveillance programme. WSD was suspected to occur in 2016 but not confirmed in a zone.
11	**Infection with Yellow head virus (YHD)** No positive case was detected (PCR) during DoF active surveillance programme.
12	**Infection with Infectious hypodermal and haematopoietic virus (IHHNV)** No positive case was detected (PCR) during DoF active surveillance programme. IHHNV is known to have occurred previously in the state of Terengganu (2016).

13	**Infection with Infectious myonecrosis virus (IMNV)** 1) **Origin of the disease or pathogen (history of the disease):** An outbreak was observed in Melaka. 2) **Species affected:** *Penaeus vannamei*. 3) **Disease characteristics (unusual clinical signs or lesions):** Muscle atrophy followed by reddish coloration from the tail to the fifth abdominal segment. 4) **Pathogen (isolated.sero-typed):** Infectious myonecrosis virus; 5) **Mortality rate (high.low; decreasing/increasing):** high and increasing. 6) **Death toll (economic loss, etc.):** 1 tonne. 7) **Size of infected areas or names of infected areas:** Closed pond area. 8) **Preventive/Control measures taken:** Movement restriction, culling, disposal. 9) **Samples sent to national or international laboratories for confirmation (indicate the names of laboratories):** Fisheries Biosecurity Laboratoy Johor. 10) **Published paper (articles in journals/website, etc.):** IMNV is known to have occurred previously in the state of Sabah (2014).
14	**Acute hepatopancreatic necrosis disease (AHPND)** No positive case was detected (PCR) during DoF active surveillance programme. AHPND is kown to have occurred previously in several states in Malaysia (2014)
15	**Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)** 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)
16	**Enteric redmouth disease (ERD)** No positive case was detected (biochemical test and PCR) during DoF active surveillance programme.

Country: MYANMAR* **Period: January - March 2018**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	***	***	***		
4. Viral haemorrhagic septicaemia (VHS)	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Red seabream iridoviral disease (RSID)	***	***	***		
7. Koi herpesvirus disease (KHV)					
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	***	***	***		
10.Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease					
12. Tilapia lake virus (TiLV)					
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*					
2. Infection with *Perkinsus olseni*					
3. Infection with abalone herpesvirus					
4. Infection with *Xenohaliotis californiensis*					
5. Infection with *Bonamia ostreae*					
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*					
7. Acute viral necrosis (in scallops)					
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	-	-	-	III	1
2. Infection with white spot syndrome virus	-	-	-	III	
3. Infection with yellow head virus genotype 1	-	-	-	III	
4. Infection with infectious hypodermal and haematopoietic	-	-	-	III	
5. Infection with infectious myonecrosis virus	-	-	-	III	
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-	III	
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	***	***	***		
8. Acute hepatopancreatic necrosis disease (AHPND)	-	-	-	III	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	***	***	***		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		

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12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus					
2. Infection with *Batrachochytrium dendrobatidis*					
ANY OTHER DISEASES OF IMPORTANCE					
1. Parasitic disease					2
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

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

Comment No.	
1	During this period, we have received 25 samples of crustaceans (4 frozen shrimp and 4 soft shell crab for export), live PL samples of *P. vannamei* (3 samples), *P. monodon* (3 samples), and *M. rosenbergii* (7 samples), broodstock P. monodon (2 samples) and adult rock shrimp (2 samples) for import and local use) for testing, and found that all samples were negative for WSSV, IHHNV, MrNV, YHV, IMN, AHPND and TSV.
2	Visited some fish farms in Yangon, Mandalay and Ayeyarwaddy regions during this period. Parasitic infestations (*Dactylogyrus* spp., *Trichodina* spp. and *Ergasilus*) 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: MYANMAR* **Period: April - June 2018**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	***	***	***		
4. Viral haemorrhagic septicaemia (VHS)	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Red seabream iridoviral disease (RSID)	***	***	***		
7. Koi herpesvirus disease (KHV)					
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	***	***	***		
10.Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease					
12. Tilapia lake virus (TiLV)					
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*					
2. Infection with *Perkinsus olseni*					
3. Infection with abalone herpesvirus					
4. Infection with *Xenohaliotis californiensis*					
5. Infection with *Bonamia ostreae*					
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*					
7. Acute viral necrosis (in scallops)					
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	-	-	-	III	1
2. Infection with white spot syndrome virus	-	-	-	III	
3. Infection with yellow head virus genotype 1	-	-	-	III	
4. Infection with infectious hypodermal and haematopoietic	-	-	-	III	
5. Infection with infectious myonecrosis virus	-	-	-	III	
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-	III	
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	***	***	***		
8. Acute hepatopancreatic necrosis disease (AHPND)	-	-	-	III	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	***	***	***		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		

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12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus					
2. Infection with *Batrachochytrium dendrobatidis*					
ANY OTHER DISEASES OF IMPORTANCE					
1. Parasitic disease					2
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

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

Comment No.	
1	During this period, we have received 46 samples of crustaceans (6 frozen shrimp and 9 soft shell crab for export), live PL samples of *P. vannamei* (2 samples) and *M. rosenbergii* (27 samples), and adult rock shrimp (2 samples) for import and local use) for testing, and found that all samples were negative for WSSV, IHHNV, MrNV, YHV, IMN, AHPND and TSV.
2	Visited some fish farms in Yangon, Mandalay and Ayeyarwaddy regions during this period. Parasitic infestations (*Dactylogyrus* spp., *Trichodina* spp. and *Ergasilus*) 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: April - June 2018

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp (SVC)	***	***	***		
4. Viral haemorrhagic septicaemia (VHS)	***	***	***		
5. Infection with *Aphanomyces invadans* (EUS)	***	***	***		
6. Red seabream iridoviral disease (RSID)	***	***	***		
7. Koi herpesvirus disease (KHV)	***	***	***		
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	+	+	+		1
10.Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease	***	***	***		
12. Tilapia lake virus (TiLV)	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	II	
2. Infection with *Perkinsus olseni*	0000	0000	0000	II	
3. Infection with abalone herpesvirus	0000	0000	0000	II	
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000	II	
5. Infection with *Bonamia ostreae*	0000	0000	0000	II	
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000	III	
2. Infection with white spot syndrome virus	0000	0000	0000	III	
3. Infection with yellow head virus genotype 1	0000	0000	0000	III	
4. Infection with infectious hypodermal and haematopoietic	2013	2013	2013	III	
5. Infection with infectious myonecrosis virus	0000	0000	0000	III	
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	III	
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000	III	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	III	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000	III	
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000	III	
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000	III	

12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

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

Comment No.	
1	
2	
3	

Country: NEW ZEALAND Period: April - June 2018

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
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 *Aphanomyces invadans* (EUS)	0000	0000	0000	III	
6. Red seabream iridoviral disease (RSID)	0000	0000	0000	III	
7. Koi herpesvirus disease (KHV)	0000	0000	0000	III	
Non OIE-listed diseases					
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	
12. Tilapia lake virus (TiLV)	0000	0000	0000	III	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	- (2018)	+	+	III	1
2. Infection with *Perkinsus olseni*	- (2018)	- (2018)	- (2018)	III	2
3. Infection with abalone herpesvirus	0000	0000	0000	III	
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000	III	
5. Infection with *Bonamia ostreae*	- (2017)	- (2017)	- (2017)	III	3
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000	III	
7. Acute viral necrosis (in scallops)	0000	0000	0000	III	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000	III	
2. Infection with white spot syndrome virus	0000	0000	0000	III	
3. Infection with yellow head virus genotype 1	0000	0000	0000	III	
4. Infection with infectious hypodermal and haematopoietic	0000	0000	0000	III	
5. Infection with infectious myonecrosis virus	0000	0000	0000	III	
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	III	
7. Infection with *Hepatobacter penaei* (Necrotising	0000	0000	0000	III	
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000	III	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000	III	
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000	III	
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000	III	

12. *Spiroplasma eriocheiris* 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 *Batrachochytrium dendrobatidis*	-(2010)	-(2010)	-(2010)	III	4
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

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

Comment No.	
1	**Infection with *Bonamia exitiosa*** 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 *Ostrea chilensis* from Hauraki Gulf (Auckland region), Tauranga (Bay of Plenty region), the Marlborough Sounds and Wellington Harbour. Annual monitoring of the presence of *B. exitiosa* infection is undertaken in the flat oyster (*O. chilensis*) population in the Foveaux Strait.

2	**Infection with *Perkinsus olseni*** was first detected in New Zealand in 1999, in wild wedge shells (*Macomona liliana*). It was then found in wild populations of New Zealand cockles (*Austrovenus stutchburyi*), ark shells (*Barbatia novaezelandiae*) and pipi (*Paphies australis*) in 2000-2001. In July 2013, *P. olseni* was detected for the first time in farmed black foot pāua (*Haliotis iris*), a type of abalone native to New Zealand. Further detections were made in wild *H. iris* populations in 2014. These mollusc species occur widely around the coast of New Zealand, but to date *P. olseni* has only been detected in these species from the Auckland region northwards. *Perkinsus olseni* was found for the first time on the South Island in New Zealand green lipped mussels (*Perna canaliculus*) in a land based aquaculture facility in September 2014, and then in wild New Zealand scallops (*Pecten novaezelandiae*) 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 *P. olseni* 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.
3	**Infection with *Bonamia ostreae*** was detected for the first time in New Zealand flat oysters (*Ostrea chilensis*) 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, *B. ostreae* 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 *B. ostreae* in marine flat oyster farms in Big Glory Bay, Stewart Island (situated in the Southland region, at the southern end of the South Island). No clinical signs or elevated mortality was observed in association with *B. ostreae* in farmed flat oysters in Big Glory Bay. Following this detection, movement controls to manage risk movements from Stewart Island were issued, and depopulation of all flat oyster farms within areas where *B. ostreae* 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 was completed in December 2017. Active surveillance continues for the purposes of early detection of spread.
4	The first isolation of ***Batrachochytrium dendrobatidis*** 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.

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

Country: PHILIPPINES* Period: January - March 2018

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	January	February	March		
OIE-listed diseases					
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 *Aphanomyces invadans* (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	3
Non OIE-listed diseases					
8. Grouper iridoviral disease	-(2008)	-(2008)	-(2008)	I, III	
9. Viral encephalopathy and retinopathy	+	+	-	I, III	4
10.Enteric septicaemia of catfish	****	****	****		
11. Carp edema virus disease	0000	0000	0000		
12. Tilapia lake virus (TiLV)	-	-	+	I, III	5
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	0000	0000	0000		
3. Infection with abalone herpesvirus	****	****	****		
4. Infection with *Xenohaliotis californiensis*	****	****	****		
5. Infection with *Bonamia ostreae*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	****	****	****		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000	I, III	6
2. Infection with white spot syndrome virus	+	+	+	I, III	7
3. Infection with yellow head virus genotype 1	0000	0000	0000	I, III	8
4. Infection with infectious hypodermal and haematopoietic	-	+	+	I, III	9
5. Infection with infectious myonecrosis virus	0000	0000	0000	I, III	10
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	I, III	
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000	I, III	11
8. Acute hepatopancreatic necrosis disease (AHPND)	-	-	+	I, III	12
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	-	-	+	I, III	13
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		

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12. *Spiroplasma eriocheiris* infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

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

Comment No.	
1	**Infection with *Aphanomyces invadans* (EUS)** EUS was not detected by gross morphological examinations in *Anguilla* spp. from Aparri and Batangas. Examinations were conducted by Bureau of Fisheries and Aquatic Resources (BFAR) Central Fish Health Laboratory.
2	**Red Seabream Iridoviral Disease (RSID)** *Chanos chanos* and grouper (juvenile) analyzed using PCR test showed negative results of Red seabream iridoviral disease. Samples were collected from Iloilo, Misamis Oriental, Isabela and Pampanga. Examinations were conducted by BFAR Central Fish Health Laboratory andSoutheast Asian Fisheries Development Center (SEAFDEC) Fish Health Laboratories.

3	**Koi herpesvirus disease (KHV)** Koi (adult) analyzed using PCR test showed negative results of Koi herpesvirus disease. Samples were collected from Taguig City, Metro Manila. Examination was conducted by BFAR Central Fish Health Laboratory.
4	**Viral Encephalopathy and Retinopathy (VER)** **Origin of the disease or pathogen (history of the disease) –**detected in 1 farm **Species affected:** Pompano **Pathogen:** Viral encephalopathy and retinopathy virus **Size of infected areas or names of infected areas:** Iloilo **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** SEAFDEC Fish Health Laboratories
5	**Tilapia Lake Virus (TiLV)** **Origin of the disease or pathogen (history of the disease) –**detected in 2 farms **Species affected:** Tilapia (fingerlings) **Pathogen:** Tilapia Lake virus **Disease characteristics:** No clinical signs and significant mortalities observed in farms detected with TiLV **Size of infected areas or names of infected areas:** Pampanga **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR Central Fish Health Laboratory
6	**Infection with Taura Syndrome virus (TS)** *Pennaeus. vannamei, P.monodon, P.merguensis,* and *Macrobrachium rosenbergii* of different stages (mysis, post-larvae, juvenile, grow-out, and broodstock) analyzed using PCR test showed negative results for Taura Syndrome. Samples were collected from the provinces of Agusan del Norte, Batangas, Bohol, Cavite, Cebu, Davao del Sur, Davao Oriental, Dumaguete City, General Santos, Iloilo, Leyte, Maguindanao, Marinduque, Misamis Oriental, Negros Oriental, Oriental Mindoro, Saranggani, Surigao del Sur, Palawan, Pangasinan, Quezon and Zambales. Other samples examined were imported from Hawaii, USA. Examinations were conducted by BFAR Central, Regional and SEAFDEC Fish Health Laboratories.
7	**Infection with White spot syndrome virus (WSD)** **Origin of the disease or pathogen (history of the disease)–** detected in 7 farms **Species affected:** *P. vannamei, P.monodon, P.merguensis,* and crab **Pathogen:** White Spot Virus **Size of infected areas or names of infected areas:** Dumaguete City, Surigao del Sur, Marinduque, Leyte, Cebu **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR Central, Regional and SEAFDEC Fish Health Laboratories

8	**Infection with Yellow head virus (YHV)** *P. vannamei*, *P.monodon*, *P.merguensis* and wild shrimp of different stages (post-larvae, grow-out, and broodstock) analyzed using PCR test showed negative results for Yellow Head Virus. Samples were collected from Agusan del Norte, Bohol, Cebu, Davao del Sur, Davao Oriental, Dumaguete City, General Santos, Leyte, Marinduque, Misamis Oriental, Oriental Mindoro, Negros Oriental, Saranggani, Surigao del Sur, Palawan and Zambales. Other samples examined were imported from Hawaii, USA. Examination was conducted by BFAR Central and SEAFDEC Fish Health Laboratories.
9	**Inrection with Infectious hypodermal and heamatopoetic necrosis virus (IHHNV)** **Origin of the disease or pathogen (history of the disease)–** detected in 16 farms **Species affected:** *P.vannamei, P. merguensis, P.monodon* **Pathogen:** Infectious Hypodermal and Heamatopoetic Virus **Size of infected areas or names of infected areas:** Iloilo, Marinduque, Palawan, Batangas, Quezon, Agusan del Norte **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR Central, Regional and SEAFDEC Fish Health Laboratories.
10	**Infection with Infectious myonecrosis virus (IMN)** *P. vannamei*, *P.monodon*, *P.merguensis* and wild shrimp of different stages (mysis, post-larvae, grow-out, and broodstock) analyzed using PCR test showed negative for Infectious Myonecrosis. Samples were collected from the provinces of Agusan del Norte, Batangas, Bohol, Cavite, Cebu, Davao del Sur, Davao Oriental, Dumaguete City, General Santos, Iloilo, Leyte, Marinduque, Misamis Oriental, Oriental Mindoro, Saranggani, Surigao del Sur, Palawan, Quezon and Zambales. Some samples examined were imported from Hawaii, USA. Examinations were conducted by BFAR Central, Regional and SEAFDEC Fish Health Laboratories.
11	**Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis; NHP)** *P. vannamei*, *P.monodon*, *P.merguensis* and wild shrimp of different stages (post-larvae, grow-out, and broodstock) analyzed using PCR test showed negative results for Necrotising Hepatopancreatitis. Samples were collected from Agusan del Norte, Bohol, Cebu, Davao del Sur, Davao Oriental, Dumaguete City, General Santos, Leyte, Marinduque, Misamis Oriental, Negros Oriental, Oriental Mindoro, Saranggani, Surigao del Sur, Palawan, and Zambales. Some samples examined were imported from Hawaii, USA. Examination was conducted by BFAR Central Fish Health Laboratory.
12	**Acute Hepatopancreatic Necrosis Disease (AHPND)** **Origin of the disease or pathogen (history of the disease)–**detected in 5 farms **Species affected:** *P. vannamei*, and *P. merguiensis* **Pathogen:** AHPND *Vibrio parahaemolyticus* **Size of infected areas or names of infected areas:** Batangas, Marinduque, Cebu **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR Central, Regional and SEAFDEC Fish Health Laboratories

13	**Hepatopancreatic Microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)** **Origin of the disease or pathogen (history of the disease)–**detected in 1 farm **Species affected:** *P.vannamei* **Pathogen:** *Enterocytozoon hepatopenaei* **Size of infected areas or names of infected areas:** Cebu **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) /SEAFDEC Fish Health Laboratories

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

Country: PHILIPPINES* Period: April - June 2018

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
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 *Aphanomyces invadans* (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	3
Non OIE-listed diseases					
8. Grouper iridoviral disease	-(2008)	-(2008)	-(2008)	I, III	
9. Viral encephalopathy and retinopathy	+	-	-	I, III	4
10.Enteric septicaemia of catfish	****	****	****		
11. Carp edema virus disease	0000	0000	0000		
12. Tilapia lake virus (TiLV)	-	-	-	I, III	5
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	0000	0000	0000		
3. Infection with abalone herpesvirus	****	****	****		
4. Infection with *Xenohaliotis californiensis*	****	****	****		
5. Infection with *Bonamia ostreae*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	****	****	****		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000	I, III	6
2. Infection with white spot syndrome virus	+	+	+	I, III	7
3. Infection with yellow head virus genotype 1	0000	0000	0000	I, III	8
4. Infection with infectious hypodermal and haematopoietic	+	+	+	I, III	9
5. Infection with infectious myonecrosis virus	0000	0000	0000	I, III	10
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	0000	0000	0000	I, III	
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000	I, III	
8. Acute hepatopancreatic necrosis disease (AHPND)	-	+	+	I, III	11
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	+	+	+	I, III	12
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		

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12. *Spiroplasma eriocheiris* infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infection with HPR-deleted of HPR0 salmon anemia virus, Infection with salmon pancreas disease virus; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*.
Crustaceans: Crayfish plague (*Aphanomyces astaci*).
NOT LISTED BY THE OIE
Finfish: Channel catfish virus disease

a/ Please use the following symbols:

+	Disease reported or known to be present	?( )	Presence of the disease suspected but not confirmed in a zone
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
?	Suspected by reporting officer but presence not confirmed	0000	Never reported
+( )	Occurrence limited to certain zones	-	Not reported (but disease is known to occur)
+?( )	Confirmed infection/infestation limited to one or more zones of the country, but no clinical disease	(year)	Year of last occurrence

b/ If there is suspicion or confirmation of any of these diseases, they must be reported immediately, because the region is considered free of these diseases

1. Epidemiological comments:

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

Comment No.	
1	**Infection with *Aphanomyces invadans*(EUS)** EUS was not detected by gross morphological examinations in *Anguilla* spp. fromZambales, Cavite, Laguna, Mindoro and South Cotabato. Examinations were conducted by Bureau of Fisheries and Aquatic Resources (BFAR) Central Fish Health Laboratory.
2	**Red Seabream Iridoviral Disease (RSID)** *Chanoschanos*, Tilapia, Pompano, Koi, Anthias, Pink Spotted Goby, Damselfish and grouper of different stages (fry and fingerlings) analyzed using PCR test showed negative results of Red seabream iridoviral disease. Samples were collected from Navotas City, Las Piñas City, Pangasinan, Nueva Ecija, Tarlac, Zambales, Mindoro, Antique, Iloilo, Leyte, Davao del Sur, Davao del Norte, Guimaras and Lanao del Sur. Other samples examined were imported from Taiwan. Examinations were conducted by BFAR Central Fish Health Laboratory and Southeast Asian Fisheries Development Center (SEAFDEC) Fish Health Laboratories.

3	**Koi herpesvirus disease (KHV)** Koi (adult) analyzed using PCR test showed negative results of Koi herpesvirus disease. Samples were collected from Metro Manila and Antique. Examination was conducted by BFAR Central Fish Health Laboratory.
4	**Viral Encephalopathy and Retinopathy (VER)** Samples of tilapia fingerlings from 4 tilapia farms in Nueva Ecija showed positive results for VER by PCR. No clinical signs and significant mortalities are observed in tilapia from these farms. Examination was conducted by BFAR Central Fish Health Laboratory.
5	**Tilapia Lake Virus (TiLV)** Tilapia (fry and fingerlings) analyzed using PCR test showed negative results of Tilapia Lake Virus. Samples were collected from Pangasinan, Nueva Ecija, Tarlac, Mindoro, Leyte and Lanao del Sur. Examination was conducted by BFAR Central Fish Health Laboratory.
6	**Infection with Taura syndrome virus (TS)** *Pennaeusvannamei*, *P.monodon*, and crab of different stages (zoea, mysis, post-larvae, adult, grow-outand bloodstocks) analyzed using PCR test showed negative results for Taura Syndrome. Samples were collected from Pangasinan,Cagayan, Bataan, Bulacan,Zambales, Batangas, Quezon, Marinduque, Occidental Mindoro, Oriental Mindoro, Romblon,Camarines Norte, Camarines Sur,Aklan, Capiz,Negros Occidental, Iloilo, Cebu, Leyte, Davao del Sur and Maguindanao. Other samples examined were imported from Hawaii, USA. Examinations were conducted by BFAR Central, Regional and SEAFDEC Fish Health Laboratories.
7	**Infection with White spot syndrome virus (WSD)** **Origin of the disease or pathogen (history of the disease)-**detected in 12 farms **Species affected:** *P. vannamei*,*P.monodon*, and crab **Pathogen:** White Spot Virus **Size of infected areas or names of infected areas:** Cagayan, Zambales, Oriental Mindoro, Capiz, Negros Occidental, Davao del Sur, Agusan del Norte, and Misamis Oriental **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR Central, Regional and SEAFDEC Fish Health Laboratories
8	**Infection with Yellow head virus (YHV)** *P. vannamei*and*P.monodon* of different stages (post-larvae, grow-out and broodstocks) analyzed using PCR test showed negative results for Yellow Head Virus. Samples were collected fromCagayan, Bulacan,Zambales, Occidental Mindoro, Oriental Mindoro, Romblon,Camarines Norte, Camarines Sur,Capiz, Leyte and Davao del Sur. Other samples examined were imported from Hawaii, USA. Examination was conducted by BFAR Central, Regional and SEAFDEC Fish Health Laboratories.

9	**Infection with Infectious hypodermal and heamatopoetic necrosis virus (IHHNV)** **Origin of the disease or pathogen (history of the disease) –** detected in 17 farms **Species affected:** *P.vannamei, P.monodon* **Pathogen:** Infectious Hypodermal and Heamatopoetic Virus **Size of infected areas or names of infected areas:** Pangasinan, Zambales, Batangas, Quezon, Negros Occidental, Camarines Norte, Iloilo, Cebu, and Agusan del Norte **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR Central, Regional and SEAFDEC Fish Health Laboratories.
10	**Infection with Infectious myonecrosis virus (IMN)** *P. vannamei*and *P. monodon* of different stages (zoea, mysis, post-larvae, adult, grow-outand broodstocks) analyzed using PCR test showed negative for Infectious Myonecrosis. Samples were collected from Cagayan, Bulacan, Zambales, Batangas, Quezon, Occidental Mindoro, Romblon, Aklan, Capiz, Negros Occidental, Iloilo, Cebu, Leyte and Davao del Sur. Some samples examined were imported from Hawaii, USA. Examinations were conducted by BFAR Central, Regional and SEAFDEC Fish Health Laboratories.
11	**Acute Hepatopancreatic Necrosis Disease (AHPND)** **Origin of the disease or pathogen (history of the disease) –** detected in 9 farms **Species affected:** *P. vannamei*,and*P.monodon* **Pathogen:** AHPND *Vibrio parahaemolyticus* **Size of infected areas or names of infected areas:** Cagayan,Batangas, Negros Occidental, Leyte, Davao del Sur, Agusan del Norte, and Misamis Oriental **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR Central, Regional and SEAFDEC Fish Health Laboratories
12	**HepatopancreaticMicrosporidiosis caused by *Enterocytozoonhepatopenaei* (HPM-EHP)** **Origin of the disease or pathogen (history of the disease) –** detected in 17 farms **Species affected:** *P. vannamei*, and *P.monodon* **Pathogen:** *Enterocytozoonhepatopenaei* **Size of infected areas or names of infected areas:** Cagayan, Batangas, Quezon, Oriental Mindoro, Negros Occidental, Camarines Norte, Iloilo, Cebu, and Agusan del Norte **Samples sent to national or international laboratories for confirmation (indicate the name of laboratories):** Polymerase Chain Reaction Test (PCR) / BFAR Central, Regional and SEAFDEC Fish Health Laboratories

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

Country: SINGAPORE* Period: April - June 2018

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
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 *Aphanomyces invadans* (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease (RSID)	(2017)	(2017)	(2017)		
7. Koi herpesvirus disease (KHV)	(2018)	(2018)	(2018)		
Non OIE-listed diseases					
8. Grouper iridoviral disease	(2014)	(2014)	(2014)		
9. Viral encephalopathy and retinopathy	(2018)	(2018)	+	III	1
10.Enteric septicaemia of catfish	***	***	***		
11. Carp edema virus disease	***	***	***		
12. Tilapia lake virus (TiLV)	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpesvirus	***	***	***		
4. Infection with *Xenohaliotis californiensis*	***	***	***		
5. Infection with *Bonamia ostreae*	***	***	***		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	***	***	***		
7. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000		
2. Infection with white spot syndrome virus	(2018)	(2018)	(2018)		
3. Infection with yellow head virus genotype 1	0000	0000	0000		
4. Infection with infectious hypodermal and haematopoietic	0000	0000	0000		
5. Infection with infectious myonecrosis virus	0000	0000	0000		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	***	***	***		
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	0000	0000	0000		
9. Infection with *Aphanomyces astaci* (Crayfish plague)	***	***	***		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	***	***	***		
11. Viral covert mortality disease (VCMD) of shrimps	***	***	***		

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12. *Spiroplasma eriocheiris* infection	***	***	***		
13. Iridovirus in crayfish	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	(2018)	(2018)	(2018)		
ANY OTHER DISEASES OF IMPORTANCE					
1 Megalocytivirus (ornamental fish)	+	+	(2018)	III	2

DISEASES PRESUMED EXOTIC TO THE REGION[b]
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	**Viral Nervous Necrosis Virus (VNNV)** was detected by PCR from a batch of clinically healthy Coral trout from a land-based commercial aquaculture facility. The facility was promptly informed of the detection.
2	**Megalocytivirus** was detected by real-time PCR in two clinically healthy batches of ornamental fish from exporters' premises, in April and May respectively.

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

Country: VIETNAM* **Period: April - June 2018**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
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 *Aphanomyces invadans* (EUS)	-	-	-		
6. Red seabream iridoviral disease (RSID)	0000	0000	0000		
7. Koi herpesvirus disease (KHV)	0000	0000	0000		
Non OIE-listed diseases					
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		
12. Tilapia lake virus (TiLV)					
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	-	-	-		
3. Infection with abalone herpesvirus	0000	0000	0000		
4. Infection with *Xenohaliotis californiensis*	0000	0000	0000		
5. Infection with *Bonamia ostreae*	0000	0000	0000		
Non OIE-listed diseases					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
7. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Infection with Taura syndrome virus	0000	0000	0000		
2. Infection with white spot syndrome virus	+()	+()	+()	I, III	2
3. Infection with yellow head virus genotype 1	-	-	-		
4. Infection with infectious hypodermal and haematopoietic	0000	0000	0000		
5. Infection with infectious myonecrosis virus	0000	0000	0000		
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	-	-	-		
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	0000	0000	0000		
8. Acute hepatopancreatic necrosis disease (AHPND)	+()	+()	+()	I, III	3
9. Infection with *Aphanomyces astaci* (Crayfish plague)	0000	0000	0000		
Non OIE-listed diseases					
10. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)	0000	0000	0000		
11. Viral covert mortality disease (VCMD) of shrimps	0000	0000	0000		

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12. *Spiroplasma eriocheiris* infection	0000	0000	0000		
13. Iridovirus in crayfish	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
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	**Enteric Septicaemia of Catfish (*Edwardsiella ictaluri*)** Infection found in some small scale catfish (*Pangasius micronema*, *P. hypophthalmus*) farms.

2	**Infection with white spot syndrome virus (White Spot Disease; WSD)** **Pathogen**: White spot syndrome virus (WSSV) **Species affected:** *Penaeus monodon* and *Litopenaeus vannamei;* **Name of affected area:** reported and limited in some small scale farms with low biosecurity control. Shrimps were affected at 10-100 days after stocking; **Mortality rate:** average to high; **Clinical signs:** 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; **Control measures:** early harvest, strict isolation of infected ponds from movement, strengthened control of transportation, cleaning and disinfection of infected ponds and farming tools using Calcium hypochlorite (chlorine).
3	**Acute Hepatopancreatic Necrosis Disease (AHPND)** **Pathogen**: *Vibrio parahaemolyticus* with Phage A3 **Species affected:** *Penaeus monodon* and *Litopenaeus vannamei* (10-45 DOC) **Name of affected area:** reported and limited to some small-scale farms with low biosecurity control. **Mortality rate:** could reach 95% in intensive and semi-intensive farms; **Clinical signs:** shrimps become lethargic with soft, darkened shells, mottling of the carapace. Pathology is limited to hepatopancreas. **Control measures:** early harvest, strict isolation of infected ponds from movement and transport controls, cleaning and disinfection of infected ponds and farming tools using Calcium hypochlorite (chlorine).

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 2018)

1. DISEASES PREVALENT IN THE REGION	
1.1 FINFISH DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
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 *Aphanomyces invadans* (EUS)	5. Tilapia lake virus disease
6. Red seabream iridoviral disease (RSID)	
7. Koi herpesvirus disease (KHV)	
1.2 MOLLUSC DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Bonamia exitiosa*	1. Infection with *Marteilioides chungmuensis*
2. Infection with *Perkinsus olseni*	2. Acute viral necrosis (in scallops)
3. Infection with abalone herpesvirus	
4. Infection with *Xenohaliotis californiensis*	
5. Infection with *Bonamia ostreae*	
1.3 CRUSTACEAN DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with Taura syndrome virus	1. Hepatopancreatic microsporidiosis caused by *Enterocytozoon hepatopenaei* (HPM-EHP)
2. Infection with white spot syndrome virus	
3. Infection with yellow head virus genotype 1	2. Viral covert mortality disease (VCMD) of shrimps
4. Infection with infectious hypodermal and haematopoietic necrosis	3. *Spiroplasma eriocheiris* infection
5. Infection with infectious myonecrosis virus	4. Iridovirus in crayfish
6. Infection with *Macrobrachium rosenbergii* nodavirus (White Tail disease)	
7. Infection with *Hepatobacter penaei* (Necrotising hepatopancreatitis)	
8. Acute hepatopancreatic necrosis disease (AHPND)	
9. Infection with *Aphanomyces astaci* (Crayfish plague)	
1.4 AMPHIBIAN DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Ranavirus*	
2. Infection with *Bachtracochytrium dendrobatidis*	
2. DISEASES PRESUMED EXOTIC TO THE REGION	
2.1 Finfish	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with HPRdeleted or HPR0 salmon anaemia virus	1. Channel catfish virus disease
2. Infection with salmon pancreas disease virus	
3. Infection with *Gyrodactylus salaris*	
2.2 Molluscs	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Marteilia refringens*	
2. Infection with *Perkinsus marinus*	

Recent Aquatic Animal Health Related Publications

OIE Aquatic Animal Health Code, 21st Edition, 2018. The OIE Aquatic Animal Health Code (the Aquatic Code) provides standards for the improvement of aquatic animal health worldwide. It also includes standards for the welfare of farmed fish and use of antimicrobial agents in aquatic animals. The sanitary measures in the Aquatic Code should be used by the Competent Authorities of importing and exporting countries for early detection, reporting and control of pathogenic agents in aquatic animals (amphibians, crustaceans, fish and molluscs) and to prevent their spread 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 21st edition incorporates modifications to the Aquatic Code agreed at the 86th General Session in May 2018. This edition includes the following updates: Chapter 1.3. 'Diseases listed by the OIE'; Chapter 5.3. 'OIE procedures relevant to the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization'; Chapter 5.4. 'Criteria to assess the safety of aquatic animal commodities';Article X.X.2. of Chapters 10.1. 'Epizootic haematopoietic necrosis', 10.3. 'Infection with Gyrodactylus salaris' and 10.4. 'Infection with infectious salmon anaemia virus'; Articles X.X.8., X.X.9., X.X.10. and X.X.11. of all disease-specific chapters in Sections 8, 9 and 10. This edition also includes the following new chapter: Chapter 8.2. 'Infection with *Batrachochytrium salamandrivorans*'.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 the Manual of Diagnostic Tests for Aquatic Animals (the Aquatic Manual) is to provide a standardised approach to the diagnosis of the diseases listed in the Aquatic Code, to facilitate health certification for trade in aquatic animals and aquatic animal products. Although there are many publications on the diagnosis and control of aquatic animal diseases, the Aquatic Manual is a key reference document describing the methods relevant to the OIE-listed diseases and other important diseases for use by aquatic animal health laboratories around the world. Adoption of the specified methods will help to increase efficiency of laboratories and to promote improvements in aquatic animal health world-wide.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[1], 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.

[1] 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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Published by the Network of Aquaculture Centres in Asia-Pacific, World Organisation for Animal Health (OIE) Regional Representation for Asia and the Pacific, and the Food and Agriculture Organization of the United Nations.
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ISSN 1513-6558