2012/1

QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

January – March 2012

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Contents

Foreword

Early Mortality Syndrome (EMS)/ Acute Hepatopancreatic Necrosis Syndrome (AHPNS) in Cultured Shrimps in Asia

A new/emerging shrimp disease known as early mortality syndrome (EMS) or acute hepatopancreatic necrosis syndrome (AHPNS) has been reported to cause significant losses among shrimp farmers in China (2009), Vietnam (2010) and Malaysia (2011). It was also reported to affect shrimp in the eastern Gulf of Thailand (Flegel, 2012). The disease affects both *P. monodon* and *P. vannamei* and is characterized by mass mortalities (reaching up to 100% in some cases) during the first 20-30 days of culture (post-stocking in grow-out ponds). Clinical signs observed include slow growth, corkscrew swimming, loose shells, as well as pale coloration. Affected shrimp also consistently show an abnormal hepatopancreas (shrunken, small, swollen or discouloured). The primary pathogen (considering the disease is infectious) has not been identified, while the presence of some microbes including *Vibrio*, microsporidians and nematode has been observed in some samples. Lightner et al. (2012) described the pathological and etiological details of this disease. Histological examination showed that the effects of EMS in both *P. monodon* and *P. vannamei* appear to be limited to the hepatopancreas (HP) and show the following pathology:

1) Lack of mitotic activity in generative E cells of the HP;
2) Dysfunction of central hepatopancreatic B, F and R cells;
3) Prominent karyomegaly and massive sloughing of central HP tubule epithelial cells;
4) Terminal stages including massive intertubular hemocytic aggregation followed by secondary bacterial infections.

Similar histopathological results were obtained by Prachumwat et al. (2012) on Thai samples of *P. vannamei* collected from Chantaburi and Rayong provinces in late 2011 and early 2012 (Figure 1). The progressive dysfunction of the HP results from lesions that reflect degeneration and dysfunction of the tubule epithelial cells that progress from proximal to distal ends of HP tubules. This degenerative pathology of HP is highly suggestive of a toxic etiology, but anecdotal information suggests that disease spread patterns may be consistent with an infectious agent.

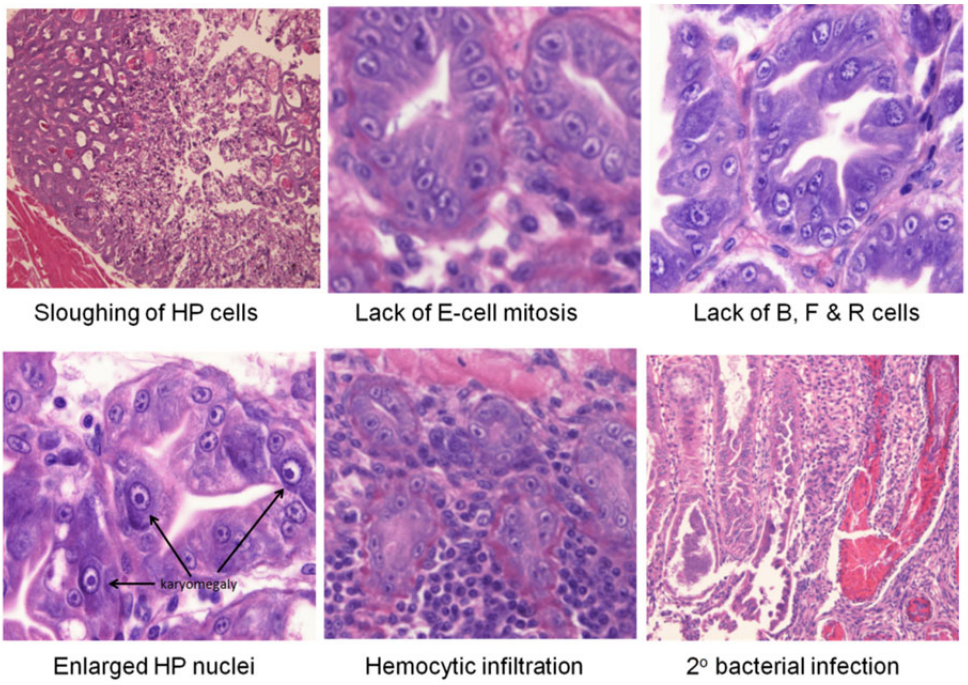

Figure 1. Histopathology of *Penaeus vannamei* hepatopancreas from Thailand affected by EMS/AHPNS. Photos courtesy of T.W. Flegel.

So far no potential causative pathogen has been found and possible etiologies include toxins (biotic or abiotic), bacteria and viruses (NACA-FAO 2011). Nonetheless, the spread of the disease and its devastating effect in the shrimp industry of the countries affected so far, will require proper contingency planning in other countries in the region, especially in *P. vannamei* culture which is commonly cultivated at present in many Southeast Asian countries. Added to this is the standing threat of infections myonecrosis (IMN) on *P. vannamei* culture, which is now somehow contained within Indonesia. Rumors of disease outbreaks caused by IMNV from other countries in Asia have so far been false (Senapin et al., 2011). Identifying the primary cause of the disease is necessary, but while this information is still not yet available, increased disease awareness and preparedness should be implemented by every shrimp-producing country in the region. Considering the great economic loss that EMS will cause in the region's shrimp industry, ways of preventing the spread and/or occurrence of this disease should be formulated by concerned experts, officials and other regulatory bodies. Farmers, on the other hand, should also properly cooperate with the concerned agencies by promptly reporting any suspected mortalities among cultured shrimp that appear to be similar to the clinical description of EMS/AHPNS. It is important that histological examination be carried out to confirm that suspected occurrences fit the AHPNS case definition devised by Dr. Lightner.

In lieu on this emerging threat, NACA has released a Disease Advisory which was widely circulated among member countries, regional and international organisations, as well as the private sectors. The disease advisory is available for free download at NACA website (http://library.enaca.org/Health/DiseaseLibrary/disease-advisory-ems-ahpns.pdf). An Emergency Regional Consultation is also being organized by NACA with support from the Australian Department of Agriculture, Fisheries and Forestry (DAFF). This will be held on 9-10 August 2012 in Bangkok, Thailand with the following objectives:

a) Provide an overview of the current disease and its spread, with emphasis on the threat that it poses in the shrimp industry of the region;
b) Assess the economic effects of the disease: outbreaks in China, Vietnam, Malaysia and Thailand;
c) Identify any similar occurrences in other countries in the region;
d) Develop a field level disease card and case definition as easy reference in monitoring the occurrence of the disease;
e) Formulate a regional action plan – improved disease surveillance and reporting, and contingency measures to contain and prevent further spread of the disease;
f) Develop or plan collaborative research on EMS/AHPNS, inter-regionally and internationally, to identify the primary causative agent, develop preventive measures, etc.; and,
g) Formulate other regulatory measures for overall management of the disease.

NACA will greatly appreciate receiving any relevant information pertaining to EMS/AHPNS from all member countries in the region. Information can be sent by e-mail to the authors at eduardo@enaca.org and mohan@enaca.org.

References:

Flegel, T.W. 2012. Historic emergence, impact and current status of shrimp pathogens in Asia. Journal of Invertebrate Pathology 110:166-173.

Lightner, DV, Redman, RM, Pantoja, CR, Noble, BI, Tran, L. 2012. Early mortality syndrome affects shrimp in Asia. Global Aquaculture Advocate, January/February 2012:40.

NACA-FAO 2011. Quarterly Aquatic Animal Disease report (Asia and Pacific Region), 2011/2, April-June 2011. NACA, Bangkok, Thailand.

Prachumwat, A., Thitamadee, S., Sriurairatana, S., Chuchird, N., Limsuwan, C. Jantratit, W., Chaiyapechara, S., Flegel, T.W. 2012. Shotgun sequencing of bacteria from AHPNS, a new shrimp disease threat for Thailand. Poster, National Institute for Aquaculture Biotechnology, Mahidol University, Bangkok, Thailand (Poster available for free download at www.enaca.org)

Senapin, S., Phiwsaiya, K., Gangnonngiw, W., Flegel, T.W. 2011. False rumours of disease outbreaks caused by infectious myonecrosis virus (IMNV) in the whiteleg shrimp in Asia. Journal of Negative Results in BioMedicine. 10: 10

Reports Received by the NACA Secretariat

Country: AUSTRALIA **Period: January - March 2012**

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	-(2011)	-(2011)	-(2011)		1
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	+	+	-(2012)	III	2
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	-(2011)	+	-(2012)	III	3
10.Enteric septicaemia of catfish	-(2011)	-(2011)	-(2011)		4
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	-(2011)	-(2011)	-(2011)		5
3. Infection with abalone herpes-like virus	-(2011)	-(2011)	-(2011)		6
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	0000	0000	0000		
3. Yellowhead disease	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	-(2008)	-(2008)	-(2008)		7
5. Infectious myonecrosis	0000	0000	0000		
6. White tail disease (MrNV)	-(2008)	-(2008)	-(2008)		8
7. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-(2008)	-(2008)	-(2008)		9
2. Infection with *Batrachochytrium dendrobatidis*	-(2011)	-(2011)	-(2011)		10
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	**Epizootic haematopoietic necrosis** Epizootic haematopoietic necrosis was not reported this despite passive surveillance, but is known to have occurred previously in the Australian Capital Territory (last reported 2011), New South Wales (last year reported 2009), Victoria (last year reported 2004) and South Australia (last year reported 1992). Passive surveillance and never reported in the Northern Territory, Queensland and Western Australia. Targeted surveillance and never reported in Tasmania.
2	**Epizootic ulcerative syndrome** 1. **Reported in Victoria** in January 2012. Passive surveillance; 2. **Species affecred-** Murray cod (*Maccullochella peelii*), 200 g weight; 3. **Clinical signs-** information not available; 4. **Pathogen-** *Aphanomyces invadans*; 5. **Mortality rate-** 100% (65,000 farmed fish); 6. **Economic loss-** information not available; 7. **Geographic extent-** 20 cages within a dam used for irrigation purposes, no contact with other waterways; 8. **Containment measures-** information not available; 9. **Laboratory confirmation-** histopathology confirmed *A. invadans* infection; 10. **Publications-** None.

2	**Epizootic ulcerative syndrome (Cntd…)** 1. **Reported in New South Wales** in February 2012. Passive surveillance; 2. **Species affecred-** Yellowfin bream (*Acanthopagrus australis*); 3. **Clinical signs** – ulcerative skin lesions at the base of the tail; 4. **Pathogen** – *Aphanomyces invadans*; 5. **Mortality rate** – 3 fish submitted for diagnosis; source mortality rate unknown; 6. **Economic loss** – information not available; 7. **Geographical extent** – caught by fisherman in the Myall River, 3 km north of Tea Gardens; 8. **Containment measures** – Not applicable; EUS is considered to be endemic in many New South Wales catchments ; 9. **Laboratory confirmation** – histopatholgy and PCR confirmed A. inavadans infection in 3 fish submitted to the laboratory for examination; 10. **Publications** – None. Epizootic ulcerative syndrome was reported during this period in Victoria (January) and New South Wales (February). It is known to have occured previously in Queensland (last reported 2011), the Northern Territory (last reported 2011), South Australia (last reported 2008), and Western Australia (last reported 2009). Passive surveillance and never reported in Tasmania. No information available in the Autralian Capital Territory.
3	**Viral encephalopathy and retinopathy** 1. **Reported in Queensland** in February 2012. Passive surveillance; 2. **Species affecred-** Queensland grouper (*Epinephelus lanceolatus*), 114 day old juveniles; 3. **Clinical signs-** disorientation, failure to maintain upright position/loss of equilibrium, anorexia; 4. **Pathogen-** Viral encephalopathy and retinopathy virus; 5. **Mortality rate-** low mortality, 0.002% (20 fish affected from a population of 10,000); 6. **Economic loss-** information not available; 7. **Geographic extent-** 4 tanks within a single hatchery; 8. **Containment measures-** not applicable; considered as endemic disease; 9. **Laboratory confirmation-** histopathology and immunohistochemistry; 10. **Publications-** None. Viral encephalopathy and retinopathy was reported this period in a research hatchery in Queensland (February). Not reported this period despite passive surveillance but is known to have occurred previously in the Northern Territory (last reported 2011), New South Wales (last reported 2010), South Australia (last reported 2010), Western Australia (last reported 2005) and Tasmania (last reported 2000). Never reported from Victoria despite passive surveillance. No information available this period in the Australian Capital Territory.
4	**Enteric septicaemia of catfish** was not reported this period despite passive surveillance but is known to have occurred previously in the Northern Territory (in 3 species of native catfish held in a closed aquarium facility also holding imported ornamental fish; last reported 2011), in Queensland (last reported 2008) and Tasmania (last reported 2001), both occurrences in zebrafish (*Brachydanio rerio*) held in PC2 containment facility. Never reported in New South Wales, South Australia, Victoria and Western Australia despite passive surveillance. No information available this period in the Australian Capital Territory.
5	**Infection with *Perkinsus olseni*** was not reported this period despite passive surveillance but is known to have occurred previously in South Australia (last reported 2011) and New South Wales (last reported 2005). Not reported despite targeted surveillance in Western Australia (last reported 2003). Passive surveillance and never reported in the Northern Territory, Queensland, Tasmania and Victoria. No information available this period in the Australian Capital Territory (no marine water responsibility).

6	**Infection with abalone herpes-like virus (abalone viral ganglioneuritis)** was not reported this period despite passive surveillance but is known fo have occurred previously in Tasmania (last reported 2011), New South Wales (last reported 2011),Victoria (last reported 2010). Active surveillance and never reported in South Australia. Passive surveillance and never reported in Queensland and Western Australia. No surveillance and never reported in the Northern Territory. No information available this period in the Australian Capital Territory (no marine water responsibility).
7	**Infectious hypodermal and haematopoietic necrosis virus** was not reported this period despite passive surveillance but is known to have occurred previously in Queensland (last reported 2008) and Northern Territory (last reported 2003). Passive surveillance and never reported in New South Wales, South Australia, Victoria and Western Australia. No information available in Australian Capital Territory (no marine responsibility) and Tasmania (susceptible species not present).
8	**White tail disease** was not reported this period from Queensland despite passive surveillance (last reported 2008). Passive surveillance and never reported from New South Wales and South Australia. No information available this period in the Australian Capital Territory, Northern Territory, Tasmania, Victoria and Western Australia.
9	**Infection with ranavirus** was not reported this period despite passive surveillance but is known to have occurred previously in the Northern Territory (last occurred 2008, prior to official reporting). Suspected but not confirmed despite passive surveillance in Queensland. Passive surveillance and never reported in Tasmania. No information available this period in the Australian Capital Territory, New South Wales, South Australia, Victoria and Western Australia.
10	**Infection with *Batrachochytrium dendrobatidis*** was not reported this period but is known to have occurred previously in Victoria (last reported 2011) and Tasmania (last reported 2010). Not reported this period despite passive surveillance in Western Australia (last reported 2008). Suspected but not confirmed despite passive surveillance in Queensland. No information available this period in the Australian Capital Territory, South Australia, New South Wales and Northern Territory.

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

Nil

Country: HONG KONG SAR **Period: January - March 2012**

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	II	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia	0000	0000	0000	III	
5. Epizootic ulcerative syndrome	0000	0000	0000	II	
6. Red seabream iridoviral disease	-	-	-	III	
7. Koi herpesvirus disease	-	-	-	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-	III	
9. Viral encephalopathy and retinopathy	-	-	-	III	
10.Enteric septicaemia of catfish	0000	0000	0000	II	
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 herpes-like virus	0000	0000	0000	II	
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
5. Acute viral necrosis (in scallops)	0000	0000	0000	II	
6. Akoya oyster disease	0000	0000	0000	II	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	III	
2. White spot disease	-	-	+	III	1
3. Yellowhead disease	0000	0000	0000	III	
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	II	
5. Infectious myonecrosis	0000	0000	0000	II	
6.White tail disease (MrNV)	0000	0000	0000	II	
7. Necrotising hepatopancreatitis	0000	0000	0000	II	
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000	II	
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000	II	
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	0000	0000	0000	II	
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000	II	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
		-	Not reported (but disease is known to occur)
?	Suspected by reporting officer but presence not confirmed	(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	White spot syndrome virus (White spot disease) was detected from a group of red claw crayfish that had been submitted for health certification.

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

Country: INDIA **Period: January - March 2012**

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	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	-	-	-		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	0000	0000	0000		
10.Enteric septicaemia of catfish	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	-	-	-		
3. Infection with abalone herpes-like virus	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+( )	+( )	+( )	I	1
3. Yellowhead disease	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Infectious myonecrosis	0000	0000	0000		
6.White tail disease (MrNV)	-	-	-		
7. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	-	-	-		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	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: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
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Crustaceans: Crayfish plague (*Aphanomyces astaci*).
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Finfish: Channel catfish virus disease

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+	Disease reported or known to be present	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
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?	Suspected by reporting officer but presence not confirmed	(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:

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Comment No.	
1	**White spot disease:** Reported from very limited areas in Bhimavaram, a small town of West Godavari district of Andhra Pradesh, Uttar Kannada and Udupi districts of Karnataka, Ganjam district of Odisha, and Nagapattinam and Cuddlaore districts of Tamil Nadu during different months under the reporting period.
2	
3	

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

Country: INDONESIA **Period: January - March 2012**

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	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	0000	0000	0000		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	-	-	+( )	III	1
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	+( )	+( )	III	2
9. Viral encephalopathy and retinopathy	-	+( )	+( )	III	3
10.Enteric septicaemia of catfish	0000	0000	0000		
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 herpes-like virus	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	+( )	-	III	4
2. White spot disease	+( )	+( )	+( )	III	5
3. Yellowhead disease	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	+( )	+( )	-	III	6
5. Infectious myonecrosis	-	+( )	+( )	III	7
6.White tail disease (MrNV)	0000	0000	0000		
7. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	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.					
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		(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	**KHV** 1. - 2. **Species affected:** common carp (*Cyprinus carpio*); 3. **Clinical signs:** pale gills and gill rot 4. **Pathogen:** Koi herpes virus; 5. **Mortality rate:** medium to high; 6. **Economic loss:** 7. **Names of infected areas:** Sukabumi (West Java); 8. **Preventive/control measures:** provision of Vitamins and vaccine; 9. **Laboratory confirmation:** Main Center Freshwater Aquaculture Development Sukabumi Laboratory; 10. **Publications :** not published.
2	**GIV** 1. Mostly affect fingerling stage except for outbreaks in Karimunjawa affecting marketable size pompano (*Trachionotus blochii*) and barramundi (*Lates calcarifer*). 2. **Species affected:** Silver pompano (*Trachionotus blochi*) barramundi (*Lates calcarifer*); fingelring size (barramundi): 3-4 inches. 3. **Clinical signs:** Swimming near the water surface, darkened body coloration, loss of appetite; 4. **Pathogen:** Grouper iridovirus with secondary *Vibrio* infection on fins; 5. **Mortality rate:** severe infection in fingerlings kept in tanks (nursery) gradually increase from 1000 to 10,000 tails in two weeks. 6. **Economic loss:** Rp 40,000,000.00 7. **Names of infected areas:** Batam; 8. **Preventive/control measures:** bath treatment with aquadine, vitamin C in feeds, provision of other multivitamins and immunostimulants (not successful; high mortality in fingerlings); 9. **Laboratory confirmation:** Mariculture Development Center Batam Laboratory; 10. **Publications :** not published.

3	**VNN** 1. Disease found in hatchery 2. **Species affected:** grouper fingerlings (7 cm), 100 tails; 3. **Clinical signs:** haemorrhage on fins 4. **Pathogen:** Viral nervous necrosis virus (VNN) with secondary *Vibrio* infection; 5. **Mortality rate:** low; 6. **Economic loss:** 7. **Names of infected areas:** Riau, Bintan Pesisir; 8. **Preventive/control measures:** Vitamin, multivitamin, immunostimmulant and improved feeds; 9. **Laboratory confirmation:** Mariculture Development Center Batam Laboratory; 10. **Publications :** not published.
4	**TSV** 1. - 2. **Species affected:** *Litopenaeus vannamei*; 3. **Clinical signs:**; 4. **Pathogen:** Taura syndrome virus; 5. **Mortality rate:** 6. **Economic loss:** 7. **Names of infected areas:** Banyuwangi (East Java), Anyer Serang; 8. **Preventive/control measures:** 9. **Laboratory confirmation:** Brackishwater Aquaculture Development Center Situbondo Laboratory, Center of Fish Disease and Environment Investigation Banten; 10. **Publications :** not published.
5	**WSSV** 1. - 2. **Species affected:** *Penaeus monodon*, *Litopenaeus vannamei*; 3. **Clinical signs:** White spot on carapace of infected shrimps, shrimp becoming weak and swimming on the surface; 4. **Pathogen:** White spot syndrome virus; 5. **Mortality rate:** high (100%) 6. **Economic loss:** Rp6,000,000.00 7. **Names of infected areas:** Carita banten, Aceh Basar, Kolaka (Southeast Sulawesi), Karang Antu Serang, East Aceh.; 8. **Preventive/control measures:** eradication of stock; total drying of ponds; 9. **Laboratory confirmation:** Main Center Freshwater Aquaculture Development Sukabumi Laboratory, Brackishwater Aquaculture Development Center Aceh Laboratory, Fish Quarantine Kendari, Center of Fish Disease and Envirnment Investigations Banten; 10. **Publications :** not published.

6	**IHHNV** 1. - 2. **Species affected:** white shrimp (*Litopenaeus vannamei*); 3. **Clinical signs:** 4. **Pathogen:** Infectious hypodermal and haematopoietic necrosis virus (Parvovirus); 5. **Mortality rate:** 6. **Economic loss:** - 7. **Names of infected areas:** Banyuangi, Lamongan, Tuban, Sidoarjo (East Java); 8. **Preventive/control measures:** - 9. **Laboratory confirmation:** Brackishwater Aquaculture Development Center Situbondo Laboratory,; 10. **Publications :** not published.
7	**IMNV** 1. - 2. **Species affected:** *Litopenaeus vannamei*; 3. **Clinical signs:** 4. **Pathogen:** Infectious myonecrosis virus; 5. **Mortality rate:** high 6. **Economic loss:** 7. **Names of infected areas:** Teluk lampung, Pdang Cermin, Punduh Pidada (Southern Sumatra), Kulon Progo (Yogyakarta); 8. **Preventive/control measures:** Biosecurity, improvement of water quality; 9. **Laboratory confirmation:** Center of Fish Disease and Envirnment Investigations Banten; 10. **Publications :** not published.

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

Country: IRAN **Period: January - March 2012**

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	-	-	-		
3. Spring viraemia of carp	-	-	-		
4. Viral haemorrhagic septicaemia	-	-	-		
5. Epizootic ulcerative syndrome	0000	0000	0000		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	0000	0000	0000		
10.Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpes-like virus	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	-	-	-		
3. Yellowhead disease	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
5. Infectious myonecrosis	***	***	***		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
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: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	

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

Country: JAPAN **Period: January - March 2012**

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	I	
2. Infectious haematopoietic necrosis	+	+	+	III	
3. Spring viraemia of carp	0000	0000	0000	I	
4. Viral haemorrhagic septicaemia	-	+	-	III	
5. Epizootic ulcerative syndrome	-	-	-	I	
6. Red seabream iridoviral disease	-	-	-	I	
7. Koi herpesvirus disease	+	+	-	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000	I	
9. Viral encephalopathy and retinopathy	-	-	-	I	
10.Enteric septicaemia of catfish	-	-	-	I	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	I	
2. Infection with *Perkinsus olseni*	-	-	-	I	
3. Infection with abalone herpes-like virus	0000	0000	0000	I	
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	-	-	-	I	
5. Acute viral necrosis (in scallops)	0000	0000	0000	I	
6. Akoya oyster disease	-	-	-	I	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	I	
2. White spot disease	-	-	-	I	
3. Yellowhead disease	0000	0000	0000	I	
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	I	
5. Infectious myonecrosis	0000	0000	0000	I	
6.White tail disease (MrNV)	0000	0000	0000	I	
7. Necrotising hepatopancreatitis	0000	0000	0000	I	
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000	I	
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000	I	
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-	-	-		
2. Infection with *Batrachochytrium dendrobatidis*	-	-	-		
ANY OTHER DISEASES OF IMPORTANCE					
1. Infection with *Xenohaliotis californiensis*	+?	-	+?	III	1
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	DNA of *Xenohaliotis californiensis* was isolated from *Haliotis discus discus* (domestic) and *Haliotis diversicolor* (domestic and wild) without any clinical symptom. In the infected culture facility, stamping out and disinfection were implemented.
2	
3	

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

Country: MALAYSIA **Period: January - March 2012**

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	I,II,III	
3. Spring viraemia of carp	-	-	-	I,II,III	1
4. Viral haemorrhagic septicaemia	0000	0000	0000	I,II,III	
5. Epizootic ulcerative syndrome	(1986)	(1986)	(1986)	I.II	
6. Red seabream iridoviral disease	0000	0000	+	I,II,III	
7. Koi herpesvirus disease	-	+	-	I,II,III	2
Non OIE-listed diseases					
8. Grouper iridoviral disease	+	+	-	III	3
9. Viral encephalopathy and retinopathy	-	-	+	III	4
10.Enteric septicaemia of catfish	0000	0000	0000		
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 herpes-like virus	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	-	-	I,III	5
2. White spot disease	+	-	+	I,III	6
3. Yellowhead disease	-	-	-	I,III	7
4. Infectious hypodermal and haematopoietic necrosis	+	-	-	I,III	8
5. Infectious myonecrosis	-	-	-	III	9
6.White tail disease (MrNV)	+	-	+	III	10
7. Necrotising hepatopancreatitis	-	-	-	III	11
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	-	-	-		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	0000	0000	0000		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	-	-	-		
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. Hepatopancreatic parvo virus disease	-	-	-	III	12

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	**Spring viraemia of carp** 1. No positive cases detected (PCR) although active surveillance was conducted by DOF
2	**Koi herpesvirus disease** 1. Six (6) positive cases detected (PCR) during DOF active surveillance programme.
3	**Grouper Iridoviral disease (GIV)** 1. All fish samples from Kedah and Penang were negative for Iridovirus tested in NaFisH for diagnostic cases. 2. Imported grouper fish fry samples from Indonesia were positive for Iridovirus tested in Penang Biosecurity Laboratory.
4	**Viral encephalopathy and retinopathy** 1. All fish samples from Kedah and Penang were negative for VNN tested in NaFisH for diagnostic cases. 2. Imported grouper fish fry samples from Indonesia were positive for VNN tested in Penang Biosecurity Laboratory.
5	**Taura syndrome virus (TSV)** (*P. monodon, Litopenaeus vannamei*) 1. TSV was not detected in all the samples sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes. 2. No positive on reported cases detected by PCR although active surveillance was conducted by DOF in West and East Malaysia.

6	**White Spot Syndrome Virus (WSSV)** 1. LIR (Lab Industrial Resources) (*P. monodon, Litopenaeus vannamei*) 5 out of 32 samples from Kedah were found positive for WSSV in March. 2. DOF (Department of Fisheries) (*Litopenaeus vannamei*, *Caridinia cantonensis*, *Macrobrachium lanchesteri, Cherax quadricarinatus, Neocaridinia denticulate sinensis, Peaneus monodon*) 3 samples of *L. vannamei* from Penang were positive for WSSV in January, tested by DOF.
7	**Yellow head disease (YHV)** (*P. monodon, Litopenaeus vannamei*) 1. YHV was not detected in all the samples sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes. 2. No positive cases detected (PCR) although active surveillance was conducted by DOF in East Malaysia
8	**Infectious hypodermal and haematopoietic necrosis virus (IHHNV)** (*Macrobrachium rosenbergi, P. Monodon, Litopenaeus vannamei*) 1. IHHNV was not detected in all the samples sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes. 2. No positive on reported cases detected by PCR although active surveillance was conducted by DOF in West and East Malaysia. 3. 1 sample of *L. vannamei* from Pahang in January was positive for IHHNV, tested by NaFish for diagnostic cases.
9	**Infectious Myonecrosis (IMNV)** 1. IMNV was not detected in all the samples of *P. monodon* and *Litopenaeus vannamei* sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes. 2. No positive on reported cases through PCR detection, although active surveillance was conducted by DOF in West and East Malaysia.
10	***Macrobrachium rosenbergii*** **Nodavirus (MrNV)** 1. All samples tested by NaFisH were negative for MrNV. 2. 8 samples in January and 5 samples in march from Perak were positive for MrNV, tested by DOF
11	**Necrotising hepatopancreatitis (NHPB)** 1. NHPB was not detected in all the samples of *P. monodon* and *Litopenaeus vannamei* sent to Lab Industrial Resources laboratory (LIR) for routine and monitoring purposes.

12	**Hepatopancreatic parvo virus disease (HPV)** (*P. monodon* and *L. vannamei*) 1. No positive HPV in all samples tested by Lab Industrial Resource laboratory (LIR) for routine and monitoring purposes.

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

Fisheries Regulation (Fish Disease Control Compliance for Exports and Imports) 2012 – effective date: 26 March 2012.

Country: MYANMAR **Period: January - March 2012**

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	***	***	***		
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome	***	***	***		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease					
Non OIE-listed diseases					
8. Grouper iridoviral disease	***	***	***		
9. Viral encephalopathy and retinopathy	***	***	***		
10.Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*					
2. Infection with *Perkinsus olseni*					
3. Infection with abalone herpes-like virus					
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*					
5. Acute viral necrosis (in scallops)					
6. Akoya oyster disease					
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	-	-	III	
2. White spot disease	-	-	-	III	1
3. Yellowhead disease	-	-	-	III	
4. Infectious hypodermal and haematopoietic necrosis	-	-	-	III	
5. Infectious myonecrosis	***	***	***		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
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: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	During this period, we have received and tested WSSV, IHHNV and TSV of 5 samples (2 frozen shrimps and 3 live adult shrimps) intended for export. All samples were found negative for the viruses.
2	Additional Note: At some fish farms, we have found parasite such as *Lernea*, *Dactylogyrus* and *Gyrodactylus* during this period. Proper water management solved the problem.
3	

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

Country: NEPAL **Period: January - March 2012**

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	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	-	-	-	I	1
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8.Grouper iridoviral disease					
9.Viral encephalopathy and retinopathy					
10.Enteric septicaemia of catfish					
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpes-like virus	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6.Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	***	***	***		
2. White spot disease	***	***	***		
3. Yellowhead disease	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	***	***	***		
5. Infectious myonecrosis	***	***	***		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
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: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	**Epizootic ulcerative syndrome (EUS)** Reported in February from Mahottari, Chitawan and Bardiya districts. Species affected: Labeo rohita, Cirrhinus mrigala, and Catla catla Disease signs: ulcer-like wounds on the body. Mortality and loss not reported. Control Measures: liming at 500 kg/ha. Publications: None
2	
3	

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

Country: PHILIPPINES **Period: January - March 2012**

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	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	- (2002)	- (2002)	- (2002)		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	0000	0000	0000	III	1
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-	III	2
9. Viral encephalopathy and retinopathy	-	-	-	III	3
10.Enteric septicaemia of catfish	***	***	***		
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 herpes-like virus	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	III	4
2. White spot disease	-	+	+	III	5
3. Yellowhead disease	- (1999)	- (1999)	- (1999)	III	6
4. Infectious hypodermal and haematopoietic necrosis	-	-	+	III	7
5. Infectious myonecrosis	0000	0000	0000	III	8
6.White tail disease (MrNV)	0000	0000	0000	III	9
7. Necrotising hepatopancreatitis	0000	0000	0000	III	10
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
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: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	A total of six hundred five (605) samples of koi carp (*Cyprinus carpio koi*) were analyzed using the PCR test and all showed a negative result for Koi herpesvirus. Two hundred (200) of the samples were collected from the National Fisheries Biological Center (NFBC) in Botong, Lemery, Batangas. The remaining four hundred five (405) samples were collected from the Freshwater Ornamental Fish Aquaculture Park (FOFAP) in Barangay Santo Domingo, Bay, Laguna. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
2	Twenty (20) samples of pompano (*Trachinotus spp*.) were analyzed using the PCR test and all showed a negative result for Grouper iridoviral disease. All samples were collected from Morong, Bataan. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
3	Twenty (20) samples of pompano (*Trachinotus spp*.) collected from Morong, Bataan were analyzed using the PCR test and all showed a negative result for Viral encephalopathy and retinopathy. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
4	Fifty-eight (58) samples (29 *Penaeus vannamei,* 27 *Penaeus monodon* and 2 *Macrobrachium dacqueti*) of different stages (fry, broodstock, juvenile and adult) were analyzed using the PCR test. All 58 samples showed a negative result for Taura syndrome. The samples were collected from Iloilo City, Antipolo, Zambales, Cavite, Batangas, Cebu, Misamis Oriental, Ormoc City and Leyte Province. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.

5	Thirty-seven (37) samples (30 *Penaeus vannamei*, 3 *Penaeus monodon*, *3 Macrobrachium rosenbergii* and 1 *Macrobrachium dacqueti*) of different stages (fry, juvenile, broodstock, post-larval and adult) collected from Lanao del Norte, Iloilo City, Zambales, Bulacan, Batangas, Rizal and Misamis Oriental were analyzed using the PCR test. Three (3) samples showed a positive result for White spot disease out of the total 37 samples. The positive samples were two (2) juvenile *P. monodon* from Bulacan and one (1) post-larval *P. vannamei* from Batangas. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
6	Thirty-eight (38) samples (13 *Penaeus vannamei*, 23 *Penaeus monodon* and 2 *Macrobrachium dacqueti*) of different stages (fry, broodstock and juvenile) collected from Iloilo City, Bulacan, Zambales, Misamis Oriental, Ormoc City and Leyte province were analyzed using the PCR test. All 38 samples showed a negative result for Yellowhead disease. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
7	Forty-six (46) samples (33 *Penaeus vannamei*, 12 *Penaeus monodon* and 1 *Macrobrachium dacqueti*) of different stages (fry, broodstock, juvenile and adult) collected from Iloilo City, Lanao del Norte, Antipolo, Bulacan, Zambales, Batangas, Cebu, Zamboanga Sibugay and Misamis Oriental were analyzed using the PCR test. Out of the 46 samples, only one (1) sample showed a positive result for Infectious hypodermal and haematopoietic necrosis through PCR test. The positive sample was a *P. vannamei* fry collected from Batangas. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
8	Thirty-eight (38) samples (13 *Penaeus vannamei*, 23 *Penaeus monodon* and 2 *Macrobrachium dacqueti*) of different stages (fry, juvenile and broodstock) were analyzed using the PCR test. All the samples showed a negative result for Infectious myonecrosis. The samples were collected from Iloilo City, Bulacan, Zambales, Misamis Oriental, Ormoc City and Leyte Province. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
9	Fourteen (14) samples (6 *Macrobrachium rosenbergii* and 8 *Macrobrachium dacqueti*) of different stages (post-larval and juvenile) were analyzed using the PCR test. All the samples showed a negative result for White tail disease. The samples were collected from Iloilo City, Bulacan, Zambales, Misamis Oriental, Ormoc City and Leyte Province. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.
10	Fifty (50) samples (37 *Penaeus vannamei*, 12 *Penaeus monodon* and 1 *Macrobrachium dacqueti*) of different stages (fry, broodstock, juvenile, post-larval and adult) were analyzed using the PCR test and all samples showed a negative result for Necrotising hepatopancreatitis. The samples were collected from Iloilo City, Lanao del Norte, Antipolo, Batangas, Bulacan, Zambales, Cebu, Zamboanga Sibugay and Misamis Oriental. Examinations/tests were conducted by the BFAR Central Office Fish Health Laboratory.

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

Country: SINGAPORE **Period: January - March 2012**

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	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	0000	0000	0000		
6. Red seabream iridoviral disease	(2011)	(2012)	(2012)	I,II,III	1
7. Koi herpesvirus disease	(2011)	(2011)	(2011)	III	2
Non OIE-listed diseases					
8. Grouper iridoviral disease	(2012)	(2012)	(2012)	I,II,III	3
9. Viral encephalopathy and retinopathy	+	(2012)	(2012)	I,II,III	4
10.Enteric septicaemia of catfish	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpes-like virus	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	(2011)	(2011)	(2011)		
3. Yellowhead disease	0000	0000	0000		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
5. Infectious myonecrosis	0000	0000	0000		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	***	***	***		
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1. Infectious Spleen and Kidney Necrosis Viral Disease (Mullet)	+	(2012)	+	I,II,III	3

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	Red Seabream Iridoviral Disease (RSID) was detected in diseased Seabass (*Lates calcarifer*) fingerling from a coastal fish farm experiencing increasing mortality after stocking. Clinical signs included lethargy and scale loss. Histopathology revealed basophilic inclusion bodies in multiple organs, and RSIV was confirmed by PCR using primer sets 1 and 4. It was not isolated on GP cell lines. As part of the follow up investigation, 5 further batches of Seabass, 1 batch of marine Tilapia and 1 batch of Tiger Grouper were submitted for testing. Only the batch of Seabass (from the source farm) yielded positive results for RSIV DNA by PCR. The source farm was instructed to: (i) Dispose of clinically infected fish appropriately (ii) Voluntarily cull clinically healthy fish or emergency harvest for human consumption (iii) Not to move or sell their fish to any other fish farming establishments, to prevent the spread of disease.
2	46 batches of Koi were submitted under targeted surveillance this quarter, out of which 2 consignments of imported koi in quarantine tested positive for Koi Herpesvirus (KHV) by qPCR. All fish in the infected consignments were culled, and the facilities and equipment thoroughly disinfected.
3	Infectious Spleen and Necrosis Virus (ISKNV) was detected in 4 batches of diseased grouper fingerlings submitted as part of a passive surveillance on Marine Local Fish Farms this quarter. The fingerlings were imported from regional sources, and farms experienced high mortality (up to 50%) post stocking. The farms were advised to dispose of all dead and ill fishes appropriately. ISKNV was also detected by PCR in diseased juvenile mullet from a coastal fish farm that was experiencing moderate mortality. The fish were in poor condition and exhibiting poor growth. Histopathology revealed pale enlarged eosinophilic cells in several organs, confirming diagnosis of a systemic Iridoviral disease.

4	Out of 22 batches of marine fish submitted for disease diagnosis this quarter, Viral Nervous Necrosis Virus (VNNV) RNA was detected in 7 batches (groupers, seabass and mullet) by real time RT-PCR. Histopathology examination revealed pathognomonic vacuolations in the nuclear layers of the brain and retina, confirming the diagnosis. Most of the fish had been imported from regional sources, including Taiwan, Indonesia, Malaysia and Israel.

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

Country: SRI LANKA **Period: January - March 2012**

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	***	***	***		5
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome	***	***	***		
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	***	***	***		
Non OIE-listed diseases					
8.Grouper iridoviral disease	***	***	***		
9.Viral encephalopathy and retinopathy	***	***	***		
10.Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpes-like virus	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
6.Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	***	***	***		
2. White spot disease	+( )	+( )	+( )	III	1
3. Yellowhead disease	+( )	+( )	-	III	2
4. Infectious hypodermal and haematopoietic necrosis	-	-	-	III	3
5. Infectious myonecrosis	***	***	***		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	-	+( )	-	III	4
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	***	***	***		
2. Infection with *Batrachochytrium dendrobatidis*	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1. Laem Singh virus	-	-	-	III	3
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	387 samples (*Penaeus monodon*) were tested for WSSV and 306 samples gave positive results. Samples came from coastal area of North Western Province. Testing was carried out by laboratories of National Aquatic Resources and Development Agency (NARA) and National Aquatic Development Authority (NAQDA).
2	3 out of 19 samples tested for YHD gave positive results. Testing was carried out by NARA laboratory.
3	19 samples were tested for IHHNV and LSV, all samples were found negative.
4	`1 out of 20 samples gave positive reaction. Testing was carried out in NARA and NAQDA laboratories.
5	Surveillance has been carried out for *Aeromonas salmonicida* and Spring viraemia of carp (SVC) in the laboratory of Veterinary Research Institute. 150 gold fish have been tested and all were found negative to the two pathogens. Samples came from an ornamental fish breeding station of NAQDA in North Western Province. PCR protocols are being developed for SVC.

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

Country: THAILAND **Period: January - March 2012**

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	III	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia	0000	0000	0000	III	
5. Epizootic ulcerative syndrome	(2009)	(2009)	(2009)	II	
6. Red seabream iridoviral disease	0000	0000	0000	III	
7. Koi herpesvirus disease	(05/2011)	(05/2011)	(05/2011)	III	
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-	III	
9. Viral encephalopathy and retinopathy	-	-	-	III	
10.Enteric septicaemia of catfish	0000	0000	0000	II	
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 herpes-like virus	0000	0000	0000	II	
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
5. Acute viral necrosis (in scallops)	***	***	***		
6. Akoya oyster disease	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	-	-	III	1
2. White spot disease	+( )	+( )	-	III	2
3. Yellowhead disease	-	-	+( )	III	3
4. Infectious hypodermal and haematopoietic necrosis	+( )	+( )	+( )	III	4
5. Infectious myonecrosis	0000	0000	0000	III	
6.White tail disease (MrNV)	-	+( )	-	III	5
7. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	0000	0000	0000	II	
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	***	***	***		
AMPHIBIAN DISEASES					
OIE-listed diseases					
1. Infection with Ranavirus	(07/2011)	(07/2011)	(07/2011)	III	
2. Infection with *Batrachochytrium dendrobatidis*	0000	0000	0000	II	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	A total of 198 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. All testing results for TSV were negative.
2	A total of 198 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 4 specimens or 2.0% recorded as PCR positive or carrying WSSV genes. Shrimp farm with positive testing results is subjected to health improvement, movement control, eradication and/or farm dis-infection.
3	A total of 198 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 1 specimen or 0.5% recorded as RT-PCR positive or carrying YHV genes. Shrimp farms with positive testing results are subjected to health improvement, movement control, eradication and/or farm dis-infection.
4	A total of 173 shrimp samples from shrimp farms had been tested at PCR Laboratories of the DOF under active surveillance. 19 specimens or 11 % recorded as PCR positive or carrying IHHNV genes. Shrimp farms with positive testing results will subject to health improvement, movement control, eradication and/or farm dis-infection.
5	Giant freshwater prawn specimens from two farms were submitted for *Mr*NV testing under active surveillance. The specimens from Karasin province showed PCR positive for *Mr*NV. The positive prawns from farm had 10% mortality (2,000/20,000 heads) within 30 days, showing clinical signs such as black gills, black tails and/or white tail. The cultured prawns with positive testing results will subject to eradication and farm dis-infection.

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

Country: VIETNAM Period: January - March 2012

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	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome	***	***	***		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
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,II	1
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Infection with abalone herpes-like virus	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
6. Akoya oyster disease	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+	+	+	I,II,III	2
3. Yellowhead disease	***	***	***		
4. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
5. Infectious myonecrosis	0000	0000	0000		
6.White tail disease (MrNV)	***	***	***		
7. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases					
8. *Monodon* slow growth syndrome	+	+	+	I,III	3
9. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)	+	+	+	I	4
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. Unknown disease (*P. monodon* and *P. vannamei*)					5
2.					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Infection with *Gyrodactylus salaris*.
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Perkinsus marinus*; *Xenohaliotis californiensis*.
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	+( )	Occurrence limited to certain zones
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	***	No information available
		0000	Never reported
?	Suspected by reporting officer but presence not confirmed	-	Not reported (but disease is known to occur)
		(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	Pathogen: *Edwardsiella ictaluri* Infected catfish (*Pangasius micronema, P. hypophthalmus*) were found in intensive ponds in Ben Tre province, but in low numbers.
2	Pathogen: White spot syndrome virus (WSSV) Species affected: black tiger shrimp (*Penaeus monodon*) and white leg shrimp (*Litopenaeus vannamei*); Clinical signs: lethargic or moribund shrimp accumulated 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, especially in the removed carapace held to the light after scraping off attached tissues (not always seen). Moratlity rate: medium to high, 100% within 10 days in some cases; The disease was reported in Phu Yen, Ninh Thuan, Bin Thuan, Ba Ria-Vung, Ho Chi Minh City, Long An, Ben Tre, Tien Gang, Kien Gang and Ca Mau provinces. Shrimps were affected from 20-50 days post stocking; Control measures: early harvest, strict isolation of outbreak ponds with movement controls and control of transportation. Disinfection of infected ponds using Calcium hypochlorite (Chlorine).

3	Pathogen: Baculovirus Species affected: black tiger shrimp (*Penaeus monodon*) Disease Signs: darkened body color, loss of appetite, stunted growth. The disease was reported in U Minh Thuong district (Kien Gang) and in hatcheries in Binh Thuan provice. Infection rate: 23-35%
4	Pathogen: to be confirmed, but Rickettsia-like bacteria was indicated as one of the agents. Species affected: lobsters (*Panulirus ornatus, P. homarus*) cultured in sea cages for grow out. Disease signs: black gills, redness of body, uncovered head, milky-colored abdomen (traces). The disease was reported in Phu Yen and Khan Hoa provinces from February 2012: **Phu Yen**. In Xuan Thinh commune, Song Cau district. Total culture area is 90 ha with 6,800 cages (total of 380,000 lobsters being cultured). 60% affected with size ranging from 0.3 to 1.0 kg. Khanh Hoa. In Mon lagoon, Van Thanh commune, Van Ninh district. Total culture area is 1,200 ha with 6,500 cages. 30% affected with size ranging from 0.3 to 0.7 kg. 80% of the infected population showed clinical signs of milky disease, which also occurred in this area in 2008.
5	Early Mortality Syndrome (EMS)/Acute Hepatopancreatic Necrosis Syndrome (AHPNS): The disease is still affecting the Mekong Delta area (Tien Gang: 28.5 ha; Tra Vinh: 1,642 ha; Soc Trang: 359 ha, Bac Liue: 98 ha; and Ca Mau: 4,007 ha) and in the South Central Coast (Binh Dinh: 39 ha; Nin Thuan: 6.2 ha; Ba Ria-Vung Tau: 13 ha). Affected area accounted a total of 6,193 ha. Mortalities as high as 95% were recorded at 20-60 days post stocking in both *P.monodon* and *P. vannamei* under intensive and semi-intensive farming systems. Pathogen(s) have not been confirmed. Initial findings suggested that primary cause of death might be due to accumulated toxicity from chemicals used in aquaculture and/or microorganisms (bacteria). Histological examination showed various stages of AHPNS.

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

List of Diseases in the Asia-Pacific
Quarterly Aquatic Animal Disease Report (Beginning 2012)

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	3.Enteric septicaemia of catfish
4. Viral haemorrhagic septicaemia	
5. Epizootic ulcerative syndrome	
6. Red seabream iridoviral disease	
7. Infection with koi herpesvirus	
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. Akoya oyster disease
3. Infection with abalone herpes-like virus	3. Acute viral necrosis (in scallops)
1.3 CRUSTACEAN DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Taura syndrome	1. Monodon slow growth syndrome
2. White spot disease	3. Milky haemolymph disease of spiny lobster (*Panulirus* spp.)
3. Yellowhead disease	
4. Infectious hypodermal and haematopoietic necrosis	
5. Infectious myonecrosis	
6. White tail disease (MrNV)	
7. Necrotising hepatopancreatitis	
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. Infectious salmon anaemia	1. Channel catfish virus disease
2. Infection with Gyrodactylus salaris	
2.2 Molluscs	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Bonamia ostreae*	
2. Infection with *Marteilia refringens*	
3. Infection with *Perkinsus marinus*	
4. Infection with *Xenohaliotis californiensis*	
2.3 Crustaceans	
OIE-listed diseases	**Non OIE-listed diseases**
1. Crayfish plague (*Aphanomyces astaci*)	

Recent Aquatic Animal Health Related Publications

OIE Aquatic Animal Health Code, 14th Edition, 2011. The Aquatic Animal Health Code (hereafter referred to as the 'Aquatic Code') sets out standards for the improvement of aquatic animal health and welfare and veterinary public health worldwide, including through standards for safe international trade in aquatic animals (amphibians, crustaceans, fish and molluscs) and their products. The health measures in the *Aquatic Code* should be used by the veterinary authorities of importing and exporting countries to provide for early detection, reporting and control agents pathogenic to aquatic animals and, in the case of zoonotic diseases, for humans, and to prevent their transfer via international trade in aquatic animals and aquatic animal products, while avoiding unjustified sanitary barriers to trade. The14th edition incorporates the modifications to the *Aquatic Code* agreed during the 79th General Session in May 2011. It includes revised information on the following subjects: glossary; diseases listed by the OIE; criteria to assess the safety of aquatic animal commodities; quality of Aquatic Animal Health Services; criteria for listing aquatic animal disease; control of hazards in aquatic animal feeds; introduction to the recommendations for controlling antimicrobial resistance; welfare of farmed fish during transport; welfare aspects of stunning and killing of farmed fish for human consumption; disinfection of salmonid eggs for infectious haematopoietic necrosis, infectious salmon anaemia and viral haemorrhagic septicaemia; epizootic haematopoietic necrosis; Taura syndrome and aquatic animal products listed in in Articles X.X.3. and X.X.11. (amphibians and fish chapters) / X.X.12. (crustaceans and molluscs chapters) all disease chapters (except epizootic haematopoietic necrosis, Taura syndrome, *B. ostreae*). The Aquatic Animal Health Code is available for free download http://www.oie.int/international-standard-setting/aquatic-code/access-online/. The book may be also be ordered from OIE online bookshop at http://www.oie.int/boutique/index.php?lang=en.

OIE Manual of Diagnostic Tests for Aquatic Animals, 2011. The purpose of this manual is to provide a uniform approach to the detection of the diseases listed in the OIE *Aquatic Animal Health Code*, so that the requirements for health certification in connection with trade in aquatic animals and aquatic animal products can be met. It includes bibliographical references and a list of the OIE Reference Laboratories for amphibian, crustacean, fish and mollusc diseases. The manual is available for free download at http://www.oie.int/international-standard-setting/aquatic-manual/access-online/ and can be ordered at http://www.oie.int/boutique/index.php?lang=en.

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Corsin, F., Georgiadis, M., Larry Hammel, K. and Hill, B., 2009. **Guide for Aquatic Animal Health Surveillance**. World Organization for Animal Health (OIE), Paris, France. 114 pp. Efficient and reliable surveillance systems generate sound evidence for disease incidence, prevalence and distribution, or for demonstrating disease absence. Science-based decisions regarding the health of aquatic animals rely on the information generated by surveillance programs. This practical handbook about surveillance is intended to be used mainly by Veterinary Services or other Competent Authorities, their staff and experts, for designing, implementing, and evaluating surveillance systems for diseases of relevance for aquatic animals in their country. The book can be ordered at http://www.oie.int/boutique/index.php?lang=en.

WHO-FAO Food Hygiene (Basic Texts), 4th Edition, 2009. World Health Organization and Food and Agriculture Organization of the United Nation, Rome, Italy. The Codex basic texts on food hygiene promote understanding of how rules and regulations on food hygiene are developed and applied. The General Principles of food hygiene cover hygiene practices from primary production through to final consumption, highlighting the key hygiene controls at each stage. This publication also contains the most internationally used description of the Hazard Analysis and Critical Control Point (HACCP) system and guidelines for its application. This fourth edition includes texts adopted by the Codex Alimentarius Commission up to 2009. The texts will be of use to government authorities, food industries, food handlers and consumers, as well as teachers and students of food hygiene.

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

List of National Coordinators*

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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.

[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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Notes

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