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QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

April-June 2008

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Foreword

EUS in Asia and Africa: stimulus for regional initiatives!!!

Trans-boundary movement of live aquatic animals (international trade) always carries a risk of transferring aquatic animal pathogens. Responsible introductions, compliance to regional and international standards and codes and informed decision making based on scientific risk analysis are some of the tools available to minimize the risks of pathogen introductions associated with international trade in live aquatic animals.

Since 1970, an epizootic condition of wild and farmed fishes, characterized by ulceration, invasive fungal infections and high mortality has been reported from different parts of the world. These epizootics caused heavy losses when they first occurred and spread rapidly often across long distances. In Japan, the epizootic ulcerative condition was found for the first time in cultured ayu, *Plecoglossus altivelis* in 1971 and the disease was named as mycotic granulomatosis (MG). In Australia, the cutaneous ulcerative condition called red spot disease (RSD) affected estuarine fish, greymullet in 1972 and later progressed to affect freshwater and other estuarine fish in coastal waters. In 1979, Malyasia became the first country in Peninsular south east Asia to report a serious ulcerative condition. This same disease first appeared in 1981 in the southern part of Thailand and later spread to central part in 1982 and became most significant epizootic in Thailand. Between 1981 and 1988, the disease spread to most of the countries in south east and south Asia. In Asia the disease was named epizootic ulcerative syndrome (EUS). The country to be affected most recently in Asia by EUS was Pakistan where EUS was confirmed in snakeheads from the Punjab province in 1996 and in *Cirrhinus mrigala* from Sindh province in January 1998. In the United States, similar ulcerative lesions, designated as ulcerative mycosis (UM) have occurred in estuarine fishes along the east coast since 1978. The disease has been given various colloquial names but is most commonly known as mycotic granulomatosis (MG) in Japan, red spot disease (RSD) in Australia, epizootic ulcerative syndrome (EUS) in south east Asia and ulcerative mycosis (UM) in USA. It is now generally accepted that EUS is the same disease as MG, RSD and UM. EUS is caused by an infection of a primary fungal pathogen, *Aphanomyces invadans (= A.piscicida)*

Since late 2006, fish with clinical signs similar to that of EUS were found in several locations of Zambezi river system, in Africa. Following a request from the Government of Botswana to FAO, a joint mission involving scientists from FAO, AAHRI (Aquatic Animal Health Research Institute of Thailand) and NACA (Network of Aquaculture Centres in Asia-Pacific) was undertaken during May 2007 to provide emergency technical assistance to assess the present situation and advise on future preventative and control measures. The team made field visits in Kasane, Botswana and specimens and tissue samples were collected from fish in Chobe-Zambezi river system. The preliminary histopathological investigations of the tissue samples from infected fish collected in Chobe River, Kasane, Botswana confirmed that the disease in question is EUS, caused by an infection of a primary fungal pathogen. Histopathology of muscle tissues from dashtail barb (*Barbus poechii*) showed clear mycotic granulomas penetrating from the skin (epidermis and dermis) to the muscle layer, typical of fish infected with EUS. Confirmation of mycotic granulomas in histological sections of affected tissues and organs, using special stains such as Grocott's silver stain for fungal hyphae, is one of three OIE

recommended EUS confirmatory methods. The confirmation by internationally accepted diagnostic procedures of EUS in the Chobe-Zambezi river system is the first *confirmed* case of this serious fish disease in the African region which has grave implications for the fisheries of the Chobe-Zambezi river system and the livelihoods of many people dependant on these fisheries. The risks to other fisheries through wider spread beyond the Chobe- Zambezi river system are also significant.

EUS is Asia was largely responsible for stimulating national, regional and international efforts aimed at developing and implementing national and regional aquatic animal health strategies. In 1998, the Food and Agriculture Organization of the United Nations (FAO) launched a Technical Cooperation Programme (TCP) Project (TCP/RAS 6714 (A) and 9065 (A) – "Assistance for the Responsible Movement of Live Aquatic Animals". This TCP addressed issues concerning trans-boundary pathogen transfer, with the view to build capacity in the Asia region on responsible movement of live aquatic animals. It was implemented by the Network of Aquaculture Centres in Asia-Pacific (NACA), with the participation of 21 countries in Asia. Under the project, 21 governments in the Asian Region adopted the guiding principles in the FAO/NACA "*Asia Regional Technical Guidelines on Health Management and the Responsible Movement of Live Aquatic Animals*" (or the "Technical Guidelines") and their associated implementation plan, "*the Beijing Consensus and Implementation Strategy*" as a regional strategy. The project created a strong Regional Aquatic Animal Health Programme in Asia. Within Asia, the Technical Guidelines provide the basic Biosecurity framework and guidance for national and regional efforts in reducing the risks of diseases due to trans-boundary movement of live aquatic animals. Since 2000, supporting the implementation of the key elements of the TG has remained the focus of NACA's regional aquatic animal health programme.

EUS in Africa, has succeeded in focusing the attention of policy makers and researchers on issues of risks associated with movement of live aquatic animals and the need for effective national and regional aquatic animal health management strategies. Recognizing the serious consequences of EUS, several southern African countries have now come together and taken preliminary steps to address the issue of aquatic animal disease management. In response to requests of FAO member governments for technical assistance, a regional Technical Cooperation Project (TCP/RAF/3111 [E]) *Emergency assistance to combat EUS in the Chobe-Zambezi River* has recently been approved by FAO for implementation. This regional project in operation since October 2007 is being participated by seven southern African countries (Angola, Botswana, Malawi, Mozambique, Namibia, Zambia and Zimbabwe). Several activities (e.g. capacity building, surveillances and disease reporting) are being held as part of this FAO TCP with the long term objective of developing and implementing an effective aquatic animal health management programme for southern Africa.

NACA's regional aquatic animal health program executed in close partnership with FAO of the United Nations and the Office International des Epizooties (OIE), could serve as useful model for development and implementation of possible future regional aquatic animal health programme in Southern Africa

Reports Received by the NACA Secretariat

Country: AUSTRALIA **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	-(2004)	-(2004)	-(2004)		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 (EUS)	+	+	+	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	+	+	-(2008)	III	3
10. Enteric septicaemia of catfish	-(2008)	-(2008)	-(2008)		4
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	?	?	?		5
3. Abalone viral mortality	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	0000	0000	0000		
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	-(2007)	-(2007)	-(2007)		6
5. Infectious hypodermal and haematopoietic necrosis	+	-(2008)	-(2008)	III	7
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	-(2008)	(-2008)	(-2008)		8
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	***	***	***		
10. Milky lobster disease	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.Abalone viral ganglioneuritis	+	+	+	II	9
2.Oyster oedema disease	+	+	+	II	10

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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:

		+( )	Occurrence limited to certain zones
+	Disease reported or known to be present	***	No information available
+?	Serological evidence and/or isolation of causative agent but no clinical diseases	0000	Never reported
		-	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	Epizootic haematopoietic necrosis was not reported this period despite passive surveillance, but is known to have occurred previously in Victoria (last year reported 2004), New South Wales (last year reported 2003) and South Australia (last year reported 1992). Targeted surveillance and never reported in Tasmania. Passive surveillance and never reported in the Northern Territory, Queensland or Western Australia. Annual occurrence of the disease in the Australian Capital Territory, but no laboratory confirmation.
2	**Epizootic Ulcerative Syndrome** 1. **Reported in New South Wales** in a) April, b) May and c) June 2008. Targeted surveillance; 2. **In** - multiple wild species including a) wild yellowfin bream (*Acanthopagrus australis*) (b) wild bony bream (*Nematalosa erabi*), golden perch (*Macquaria ambigua*) and spangled perch (*Leiopotherapon unicolor*) (c) freshwater mullet (*Myxus sp.*), narrow-banded sole (*Aseraggodes macleayanus*) and yellowfin bream (*Acanthopagrus australis*); 3. **Clinical signs-** gross lesions consistent with EUS; 4. **Pathogen-** *Aphanomyces invadans*; 5. **Mortality rate-** none reported; 6. **Economic loss-** not known; 7. **Geographic extent-** a) Wallamba River, (b) Darling River, (c) Hawkesbury River. Infection is also believed to be on-going in the Clarence, Richmond, Macleay, Hastings and Manning Rivers and the Wiseman's Ferry area of the Hawkesbury River although reports have not been confirmed. 8. **Containment measures-** not applicable, endemic to some drainages of New South Wales; 9. **Laboratory confirmation-** diagnosed by a) histopathology, (b) gross pathology , histology and PCR (c) gross lesions consistent with EUS; 10. **Publications-** unpublished. Epizootic ulcerative syndrome was not reported during this period despite active surveillance but is considered endemic to certain streams and rivers of the Northern Territory (last year reported 2006). Not reported despite passive surveillance, but is known to have occurred previously in Queensland (last reported 1st quarter 2008), Western Australia where it is considered to be endemic (last year reported 2005) and Victoria (last year reported 2002). Passive surveillance and never reported in South Australia, although an EUS – like suspicion in *Mogurnda adspersa* in captivity is under investigation, and Tasmania. No information available in the Australian Capital Territory.

3	**Viral Encephalopathy and Retinopathy** 1. **Reported in Queensland** in April 2008. Passive surveillance; 2. **In** - juvenile (15 day old) barramundi (*Lates calcarifer)*; 3. **Clinical signs-** a) low mortality, abnormal swimming at water surface, lesions in the eye and brain consistent with viral encephalopathy and retinopathy; 4. **Pathogen-** betanodavirus; 5. **Mortality rate-** unknown; 6. **Economic loss-** unknown; 7. **Geographic extent-** single pond, single farm; 8. **Containment measures-** none, endemic to region; 9. **Laboratory confirmation-** diagnosed by histology; 10. **Publications-** unpublished. 1. **Reported in the Northern Territory** in May 2008. Active surveillance; 2. **In** - juvenile barramundi (*Lates calcarifer)*; 3. **Clinical signs-** high mortality; 4. **Pathogen-** nodavirus; 5. **Mortality rate-** 100%; 6. **Economic loss-** not reported; 7. **Geographic extent-** nursery ponds; 8. **Containment measures-** destocking and destruction of stock; 9. **Laboratory confirmation-** diagnosed by histopathology and PCR; 10. **Publications-** unpublished. Not reported this period despite targeted surveillance from South Australia (last year reported 2004). Not reported this quarter despite passive surveillance from New South Wales (last year reported 2006), Western Australia (last year reported 2005) and Tasmania (last year reported 2000). Never reported from Victoria despite passive surveillance. No information available in the Australian Capital Territory.
4	Enteric septicaemia of catfish was not reported this quarter despite passive surveillance but is known to have occurred previously in zebrafish (*Brachydanio rerio*) in Queensland (last reported 1st quarter 2008) and in zebrafish (*Brachydanio rerio*) in PC2 containment in Tasmania (last year reported 2001). Never reported in New South Wales, Northern Territory, South Australia and Victoria despite passive surveillance. No information available in the Australian Capital Territory and Western Australia (susceptible species not present).
5	Infection with *Perkinsus olseni* was not reported this quarter from Western Australia despite targeted surveillance (last year reported 2003). While *Perkinsus* has been isolated previously by culture off the gills of a clinically normal abalone in 2003, clinical infection from *Perkinsus* has never been reported from Western Australia. Not reported this quarter from South Australia despite passive surveillance but considered enzootic in wild abalone (*Haliotis spp*.) in Spencer Gulf (last year reported 2007). Not reported this period despite passive surveillance from New South Wales (last year reported 2005). Passive surveillance and never reported in the Northern Territory, Queensland, Tasmania and Victoria. No information available in the Australian Capital Territory (no marine water responsibility).
6	Spherical baculovirosis was not reported this period despite passive surveillance but is known to have occurred previously in Queensland (last year reported 2007), New South Wales and Western Australia (last year reported 2002). Never reported despite passive surveillance in the Northern Territory, South Australia and Victoria. No information available in the Australian Capital Territory (no marine water responsibility) and Tasmania (susceptible species not present).

7	**Infectious Hypodermal and Haematopoietic Necrosis virus** was 1. **Reported in Queensland** in April 2008. Targeted surveillance; 2. **In** - juvenile black tiger prawns (*Penaeus monodon*); 3. **Clinical signs-** nil; 4. **Pathogen-** infectious hypodermal and haematopoietic necrosis virus; 5. **Mortality rate-** nil; 6. **Economic loss-** nil; 7. **Geographic extent-** 2 farms; 8. **Containment measures-** ponds destocked and disinfected; 9. **Laboratory confirmation-** diagnosed by PCR and sequence analysis; 10. **Publications-** unpublished. Not reported this period despite passive surveillance but is known to have occurred previously in the Northern Territory (last year reported 2003). No disease has been associated with the virus (considered to be closest to the avirulent Madagascar strain) reported from the Northern Territory in 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 targeted surveillance (last reported 1st quarter 2008). Never reported from New South Wales despite passive surveillance. No information available in the Australian Capital Territory (no marine water responsibility), Northern Territory, South Australia, Tasmania (susceptible species not present), Western Australia and Victoria.
9	Abalone viral ganglioneuritis continues to be reported in wild abalone (*Haliotis spp*.) on reefs in western Victoria. The unconfirmed mortality rate in the wild is reported to be between 40 - 95%. The range of spread in the wild is from the east end of the 12 Apostles National Park to near Portland at White's Beach to the west. Containment measures include the promotion of biosecurity in all sectors of the industry, abalone farm audits and translocation policies in place. Targeted surveillance and never reported in Tasmania. Passive surveillance and never reported in Queensland, New South Wales, South Australia and Western Australia. No information available in the Australian Capital Territory (no marine water responsibility) and Northern Territory.
10	*Pinctada maxima* mortalities have continued on pearl oyster leases in Western Australia. Investigations into the aetiology of the disease are on-going. Affected leases remain under quarantine.

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

Country: BANGLADESH **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome (EUS)	-	-	-	II	
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*	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	-	-	-	II	
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	0000	0000	0000		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	0000	0000	0000		
10. Milky lobster disease	0000	0000	0000		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. Mass mortality of tilapia (*O. niloticus*)	+	+	+	II	1
2. Mass mortality of Anabas testudineus (Thai variety)	+	+	+	II	2

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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	Mass mortality was observed in monosex tilapia (*Orechromis niloticus*) fingerlings during the reported period in greater Mymensingh district. **C**linical signs were observed as excessive slime secretion, reddish coloration surrounding head, jaw and operculum, deep lesions extending up to the spine, discoloration, gill rot, tail rot, white patch, exophthalmia in some cases protruding eyes, less appetite sometimes withdrawal of feed and slow movement. Mortality range was observed from 10-50% or more. Farmers use lime, salt, alum and potassium permanganate to treat affected tilapia. Besides farmer exchange 50% water from the farm. Economical loss was not available.
2	Mass mortality was reported in *Anabas testudineus* (Thai variety) fingerlings during the reported period in greater Mymensingh district. Clinical signs recorded were erratic movement, less appetite, tail rot, some cases tail loss. Farm owners use lime, salt, alum and potassium permanganate to treat *A. testudineus*. Besides farmer use aeration and exchange 50% water from the farm. Economical loss was not available.

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

Country: HONG KONG SAR **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	II	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia	0000	0000	0000	III	
5. Epizootic ulcerative syndrome (EUS)	0000	0000	0000	II	
6. Red seabream iridoviral disease	-	-	-	III	
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	000	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. Abalone viral mortality	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	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	III	
2. White spot disease	+	-	-	III	4
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000	III	
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000	II	
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	II	
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000	II	
7. Infectious myonecrosis	0000	0000	0000	II	
8. White tail disease (MrNV)	0000	0000	0000	II	
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	0000	0000	0000	II	
10. Milky lobster disease	0000	0000	0000	II	
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000	II	
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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	Three cases of Koi Herpes virus infection in Koi carp (*Cyprinus carpio*) were seen in April (2) and May (1). Two cases were detected in samples collected from 2 ornamental fish farms in rountine health monitoring exercise. No external lesion was found in the infected fish. Another case was found in sample submitted by an ornamental fish farm. The fish showed congestion on dorsal and tail fin with slight skin lesions on the tail. The source of infection was not established.
2	Two cases of Grouper iridoviral disease were seen in May and June. One outbreak occurred after 1,600 Green Grouper (GG) was introduced into a 2,200 Brown-spotted Grouper (BSG) population in a fish raft in May. Mortality was 50% (GG) and 25% (BSG) with 100% Morbidity. Fish were presented with skin ulcerations and gill flukes, some also showed petechiae hamorrage in the liver. Iridovius was detected by PCR. In June, another outbreak occurred after 7000 GG were introduced in a fish raft. Fish were presented with skin and oral ulcerations. Mortality was 60% and morbidity was up to 100%. Iridovirus was detected by PCR.
3	One case of viral encephalopathy and retinopathy was seen in June. 30,000 newly bought Coral Grouper Fry started showing clinical signs after introduction in a fish raft. Mortality was 70% and morbidity was 100%. Fish were presented with pale gills, pale liver, ulcerations on skin and mouth, no abnormality was found in the brain and retina histologically. NNV was detected by PCR and virus isolation. The source of infection was unknown.
4	One case of white spot disease was seen in April. One sample of Red Lobster was submitted by an aquatic farm in rountine health mornitoring exercise. No external lesion was found and WSSV was detected by PCR.

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

Country: INDIA **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome (EUS)	-	-	-		
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*	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	-	-	+()	I	1
3. Yellowhead disease (YH virus, gill-associated virus)	***	***	***		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	-	-	-		
5. Infectious hypodermal and haematopoietic necrosis	***	***	***		
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	-	-	-		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	0000	0000	0000		
10. Milky lobster disease	0000	0000	0000		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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	Report from very limited area in South Goa during June, 2008.

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

Country: INDONESIA **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome (EUS)	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	+	+	+	II	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. Abalone viral mortality	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	+	+	+	III	4
2. White spot disease	+	+	+	II, III	5
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	+	+	+	III	6
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
7. Infectious myonecrosis	+	+	+	III	7
8. White tail disease (MrNV)	0000	0000	0000		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	0000	0000	0000		
10. Milky lobster disease	0000	0000	0000		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. Infection with *Aeromonas hydrophilla*	-	+	+	II	8
2. Infection with *Pseudomonas sp.*	+	+	+	II	9
3. Infection with *Flavobacterium sp*	0000	+	0000	II	10

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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 KHV	1. Reported in West Java province in April and May 2008 2. Species affected: *Cyprinus carpio* from fingerling size to consumable size 3. Clinical sign: low irritation on fin and part of body and no clinical sign on some samples 4. All samples have been detected by PCR analyze 5. Pathogen: Koi Herpesvirus 6. Mortality rate: low 7. Economic loss: - 8. Names of infected areas: Sukabumi, Cirata-Cianjur district in West Java province, Tangerang district in Banten province 9. Prventive/control measures: - 10. Laboratory confirmation diagnosed by PCR in Main Centre for Freshwater Aquaculture Development Sukabumi Laboratory 11. Publication: Unpublished
2. Grouper iridoviral disease	1. Reported in Lampung province in April-June 2008 2. Species affected: grouper 3. Clinical sign: swimming settled down on the ground; haemorrhage on the surface of body 4. All samples have been detected by native inspection 5. Pathogen: Grouper iridoviral 6. Mortality rate: low 7. Economic loss: - 8. Names of infected areas: some hatcheries in Teluk Hurun, and Tanjung Putus district in Lampung province 9. Prventive/control measures: - 10. Laboratory confirmation diagnosed by native Giemsa preparation that giant cell found in thymus, spleen and renal in Mariculture Development Centre Lampung, Laboratory in Lampung province 11. Publication: Unpublished

3. VNN	1. Reported in East Java province in April and June 2008 2. Species affected to tiger grouper (*Epinephelus fuscoguttatus)* in hatchery at Situbondo, East Java 3. All samples have been detected by PCR analyze 4. Pathogen: Betanodavirus 5. Mortality rate: low 6. Economic loss: - 7. Names of infected areas: hatchery in Situbondo 8. Prventive/control measures: - 9. Laboratory confirmation diagnosed by PCR in Brackishwater Development Centre Laboratory in Situbondo 10. Publication: Unpublished
4.TSV	1. Reported in East Java province in April until June 2008 2. Species affected to *Penaeus vanamei* 3. All samples have been detected by PCR analyze 4. Pathogen: Taura syndrome virus 5. Mortality rate: low 6. Economic loss: - 7. Names of infected areas: shrimp cultured in East Java province 8. Prventive/control measures: - 9. Laboratory confirmation diagnosed by PCR in Brackishwater Development Centre Laboratory in Situbondo, East Java 10. Publication: Unpublished
5. WSSV	1. Reported in Lampung province in June 2008; East Java province in June 2008, Central Java province in April until June 2008, South Sulawesi in May 2008, and East Kalimantan in May 2008 2. Species affected to fingerling and adult of *P. vanamei*, *P. monodon* and local shrimp 3. Clinical sign: There are white spot in skin surface of shrimp head infected, shrimp becoming weak and swimming on the surface of water 4. All samples have been detected by PCR analyze 5. Pathogen: White Spot Syndrome Virus 6. Mortality rate: low to high (30%-70%) 7. Economic loss: low to high 8. Names of infected areas: in several ponds in Sidodadi district in Lampung and in Situbondo in East Java province: several ponds and hatchery in Main Center of Brackishwater Aquaculture Development in Jepara and in Pati, Demak, Brebes, white shrimp in Kendal district in Central Java province; several ponds in Brackishwater Development Center in Takalar, in Kuta Kertanegara district, East Kalimantan province 9. Prventive/control measures: - 10. Laboratory confirmation diagnosed by PCR in Mariculture Development Center Lampung Laboratory in Lampung province; Brackishwater Development Center Laboratory in Situbondo, East Java; Main Center of Brackishwater Aquaculture Development in Jepara, Central Java; Brackishwater Development Center Laboratory in Takalar, South Sulawesi; Fish Health and Environment Laboratory of Department of Marine Affairs and Fisheries, East Kalimantan province 11. Publication: Unpublished
6. IHHNV	1. Reported in East Java Province in April and June 2008; Central Java province in April and June 2008 2. Species affected to juvenile and fingerling of *P. vannamei* and *P. monodon* 3. Clinical sign: low growth (very small size/dwarf) 4. All samples have been detected by PCR analyze 5. Pathogen: family Parvoviridae 6. Mortality rate: low 7. Economic loss: quite high 8. Names of infected areas: several ponds of shrimp culture in East Java, Jepara in Central Java and Lampung province 9. Prventive/control measures: - 10. Laboratory confirmation diagnosed by PCR in Brackish Development Center Laboratory in Situbondo, East Java, Main Center of Brackishwater Aquaculture Development in Jepara, Central Java 11. Publication: Unpublished

7. Infectious myonecrosis virus (IMNV)	1. Reported in East Java province in April until June 2008 2. Species affected to juvenile and broodstock of P.vannamei 3. Clinical sign: red color on the abdominal segment end tail fan, myo-necrosis with the white color aspect 4. All samples have been detected by PCR analyze 5. Pathogen: IMNV in Totiviridae family 6. Mortality rate: low 7. Economic loss: - 8. Names of infected areas: several ponds of shrimp culture in East Java province 9. Prventive/control measures: - 10. Laboratory confirmation diagnosed by PCR analyze in Brackishwater Aquaculture Development Center Situbondo Laboratory in East Java 11. Publication: Unpublished
8 *Aeromonas hydrophila*	1. Reported in West Java province in May and June 2008 and South Kalimantan province in April until June 2008 2. Species affected to *Clarias gariepinus*, Tilapia, Gouramy and *Oreochromis* sp. 3. Clinical sign: • *Clarias gariepinus*: irritation and low damage on fin and body surface, no clinical sign on some samples • Gouramy: haemorrhage • Tilapia: irritation and low damage on fin and body surface, no clinical sign on some samples 4. Mortality rate: • *Clarias gariepinus*: low to medium • Gouramy: low to high • Tilapia: low 5. Pathogen: bacteria 6. Mortality rate: 30-70% (low to high) 7. Economic loss: - 8. Names of infected areas: Tangerang district in Banten, Sukabumi, Tasikmalaya and Bogor in West Java province; Tabalong and Banjar district in South Kalimantan province 9. Prventive/control measures: - 10. Laboratory confirmation diagnosed by Main Center for Freshwater Aquaculture Development Sukabumi Laboratory; Freshwater Aquaculture Development Centre Mandiangin Laboratory 11. Publication: Unpublished
9. *Pseudomo-nas* sp	1. Reported in South Kalimantan province in April until June 2008 2. Species affected to *Oreochromis* sp 3. Clinical sign: - 4. Mortality rate: low 5. Pathogen: bacteria 6. Economic loss: - 7. Names of infected areas: Tabalong district in South Kalimantan province 8. Prventive/control measures: - 9. Laboratory confirmation diagnosed by Freshwater Aquaculture Development Centre Mandiangin Laboratory 10. Publication: Unpublished
10. *Flavobacte-rium* sp.	1. Reported in South Kalimantan province in May 2008 2. Species affected to seed of *Osphronemus gouramy (*Gurame) 3. Clinical sign: - 4. Mortality rate: 80% (high) 5. Pathogen: bacteria 6. Economic loss: - 7. Names of infected areas: Banjar district in South Kalimantan province 8. Prventive/control measures: - 9. Laboratory confirmation diagnosed by Freshwater Aquaculture Development Centre Mandiangin Laboratory 10. Publication: Unpublished

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

Country: IRAN **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	-	-	-		
3. Spring viraemia of carp	-	-	-		
4. Viral haemorrhagic septicaemia	-	-	-		
5. Epizootic ulcerative syndrome (EUS)	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	***	***	***		
10. Enteric septicaemia of catfish	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Abalone viral mortality	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	-	-	-		
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
7. Infectious myonecrosis	***	***	***		
8. White tail disease (MrNV)	***	***	***		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	***	***	***		
10. Milky lobster disease	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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	

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

Country: JAPAN **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	I	
2. Infectious haematopoietic necrosis	+	+	+	III	
3. Spring viraemia of carp	0000	0000	0000	I	
4. Viral haemorrhagic septicaemia	+	-	-	III	
5. Epizootic ulcerative syndrome (EUS)	-	-	-	I	
6. Red seabream iridoviral disease	-	+	+	III	
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	0000	0000	0000	I	
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	I	
2. Infection with *Perkinsus olseni*	0000	0000	0000	I	
3. Abalone viral mortality	0000	0000	0000	I	
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	+	+	+	II	
5. Acute viral necrosis (in scallops)	0000	0000	0000	I	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	I	
2. White spot disease	-	+	+	III	
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000	I	
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000	I	
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	I	
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000	I	
7. Infectious myonecrosis	0000	0000	0000	I	
8. White tail disease (MrNV)	0000	0000	0000	I	
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	0000	0000	0000	I	
10. Milky lobster disease	0000	0000	0000	I	
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	-	-	-	I	
ANY OTHER DISEASES OF IMPORTANCE					
1. Infection with Edwardsiella ictaluri	-	-	-	I	

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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	

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

Country: MALAYSIA **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome (EUS)	-	-	-(1986)		
6. Red seabream iridoviral disease	-	+( )	+( )	I,II,III	1
7. Koi herpesvirus disease	+?	+?	+?	I,II,III	2
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-		
9. Viral encephalopathy and retinopathy	-	-	-	I,II,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. Abalone viral mortality	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	+	-	-	I, III	4
2. White spot disease	-	-	+	I, III	5
3. Yellowhead disease (YH virus, gill-associated virus)	-	-	-		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	?	?	?		6
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	0000	0000	0000		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	0000	0000	0000		
10. Milky lobster disease	0000	0000	0000		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. Streptococcus infection	+	+	+	I, II	7

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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:

		+( )	Occurrence limited to certain zones
+	Disease reported or known to be present	***	No information available
+?	Serological evidence and/or isolation of causative agent But no clinical diseases	0000	Never reported
		-	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	**Red Sea Bream Iridoviral Disease** A consecutive episode of mass mortality with clinical signs of inappetite, some with dropsy and high parasites infestation reported in 3 different batches of sea bass fry kept in hatchery tanks at one of the government facilities. All the samples taken and tested by National Fish Health Research Centre (NaFisH) showed light to medium infection of iridovirus by commercial detection kit. The fish were detected positive and persists even after few times sampling later. Mortality was 90-100% in all batches. The hatcheries are using recycling water system and frequently using chlorine as treatment in water before and after the outbreak.
2	**Koi herpesvirus disease** 3 groups of koi (*Cyprinius carpio koi*) were sent to NaFisH in April 2008 for confirmation of KHV following detection of light infection by commercial PCR kit. The fish were kept in aquarium for a period of 27 days. No clinical symptoms were observed at this time. All the fish were then killed and samples of gill, kidney and spleen were taken and kept in -80^{o}C for further testing. In August, the samples were retested with TK primers and the results were positive for all the 3 groups of fish.
3	**Viral Nervous Necrosis** VNN were not reported despite active surveillance in Kedah and Terengganu during this period.
4	**Taura syndrome (TSV)** TSV were not reported during this period despite passive and active surveillance done by Department Of Fisheries, Malaysia. However, a batch of dead *P.vannamei* with reddish discolouration and black spots on the body was tested positive by one private lab in Malaysia. This is the first case in Malaysia showing clinical signs of TSV with positive severe infection.
5	**White spot disease (WSSV)** Gills samples of grow out *P.vannamei* from 1 farm in Pahang detected positive WSSV at light and moderate infection. Detection was done by AAHU, UPM since the farm manager observed that there were white spots on the shrimp carapace.

6	**Infectious hypodermal and haematopoietic necrosis (IHHNV)** IHHNV were not reported during this period despite passive and active surveillance done by Department Of Fisheries, Malaysia.
7	**Streptococcal Infection in tilapia** Active surveillance 1. **Reported in** a) Kedah b) Terengganu 2. **Clinical Signs** – erratic, exophthalmia or other abnormal clinical signs of the eye, inflamed at ventral region 3. **Pathogen** – *Streptococcus agalactiae* 4. **Mortality rate** - ± 30% 5. **Economic loss** – n/a 6. **Geographic extent** – in most floating cages, lakes and rivers 7. **Laboratory confirmation** – API 20E STREP 8. **Publications** : unpublished1.Reported in Kedah and Terengganu

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

Country: MYANMAR **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp	***	***	***		
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome (EUS)	***	***	***		
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. Abalone viral mortality					
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*					
5. Acute viral necrosis (in scallops)					
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	+()	-	-	III	1
2. White spot disease	+()	+()	-	III	2
3. Yellowhead disease (YH virus, gill-associated virus)	***	***	***		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	***	***	***		
5. Infectious hypodermal and haematopoietic necrosis	+()	+()	-	III	3
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
7. Infectious myonecrosis	***	***	***		
8. White tail disease (MrNV)	***	***	***		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	***	***	***		
10. Milky lobster disease	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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 23 samples of *P. monodon* have been tested at PCR Lab of Department of Fisheries (DoF), of which 3 samples (13%) were recorded as TSV positive.
2	A total of 23 samples of *P. monodon* have been tested at PCR Lab of Department of Fisheries (DoF), of which 2 samples (8.69%) were recorded as WSSV positive.
3	A total of 23 samples of *P. monodon* have been tested at PCR Lab of Department of Fisheries (DoF), of which 5 samples (21.73%) were recorded as IHHNV positive.

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

Country: NEPAL **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp	***	***	***		
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome (EUS)	+	***	***	II	1
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*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	0000	0000	0000		
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	0000	0000	0000		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	0000	0000	0000		
10. Milky lobster disease	0000	0000	0000		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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	EUS has reported form tropical areas of central region confined in Nawalaparasi & Chitwan district. Species affected Naini & Vakura. Clinical sign shows ulcer, deep ulcer, hemorrhage confined at head, muscle and tail. Pathogen isolated was *A. invadans* Mortality rate was high Economic loss was estimated to be around US$ 30000 Preventive major was recommended was lime at 1200 kg/ha Size infected was 200-400 gms

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

Country: PAKISTAN **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	-	-	?		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome (EUS)	-	-	-	I	
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	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*	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	0000	0000	0000		
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	0000	0000	0000		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	0000	0000	0000		
10. Milky lobster disease	0000	0000	0000		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. Saprolegneosis	+	+	+	I&II	1
2. Anoxia	-	+	-	II	2

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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	3 cases of Saprolegneosis (Fungal Disease) were reported in NWFP Province in Indian major carps *(Labeo rohita & Cirrhina mrigala*) causing mortality, stock was treated with Potassium Permanganate.
2	2 case of Anoxia (Oxygen depletion) were reported in Punjab Province, treatment with lime was recommended.

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

Country: PHILIPPINES **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome (EUS)	-	-	-		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000	III	1
Non OIE-listed diseases					
8. Grouper iridoviral disease	0000	0000	0000		
9. Viral encephalopathy and retinopathy	-	-	-		
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. Abalone viral mortality	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	III	2
2. White spot disease	+	+	-	III	3
3. Yellowhead disease (YH virus, gill-associated virus)	-	-	-		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	-	-	-		
5. Infectious hypodermal and haematopoietic necrosis	-	-	-	III	4
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000	III	5
8. White tail disease (MrNV)	0000	0000	0000		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	0000	0000	0000		
10. Milky lobster disease	0000	0000	0000		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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 193 pieces of koi carp (*Cyprinus carpio*) collected from three koi farms in Bulacan, Quezon City and Laguna examined by PCR showed negative results for KHV. Examinations/tests conducted by BFAR Fish Health laboratory.
2	*P. vannanmei* (43 samples) and P. monodon (12 samples) post larvae and juvenile from farms in Batangas, Zambales, Pangasinan, Pampanga, Bohol, Cebu, Iloilo, Negros Occidental and Saranggani examined by PCR test showed negative results for TSV. Examinations conducted by BFAR Fish Health laboratory
3	Out of 96 samples (45 samples *P. monodon*, and 51 samples *P. vannamei*, of different stages) examined, 9 samples (1 *P. monodon* and 8 *P. vannamei*) showed positive results for WSV by PCR test. Examinations
4	*P. vannamei* (14 samples) and *P. monodon* (11 samples) post-larvae and juvenile examined by PCR showed negative results for IHHNV. Examination conducted by BFAR Fish Health laboratory.
5	*P. vannamei* (35 samples) and *P. monodon* (12 samples) from hatchery and grow-out farms in Batangas, Pangasinan, Zambales, Cebu, Bohol, Negros Occidental and Sarangani examined by PCR test showed negative results for IMNV. Examinations conducted by BFAR Fish Health laboratory.

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

Country: SINGAPORE **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome (EUS)	0000	0000	0000		
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	(2008)	(2008)	(2008)		
Non OIE-listed diseases					
8. Grouper iridoviral disease	-	-	-		
9. Viral encephalopathy and retinopathy	-	-	-		
10. Enteric septicaemia of catfish	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Perkinsus olseni*	***	***	***		
3. Abalone viral mortality	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	***	***	***		
2. White spot disease	-	-	-		
3. Yellowhead disease (YH virus, gill-associated virus)	***	***	***		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	-	-	-		
5. Infectious hypodermal and haematopoietic necrosis	***	***	***		
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
7. Infectious myonecrosis	***	***	***		
8. White tail disease (MrNV)	***	***	***		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	***	***	***		
10. Milky lobster disease	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1. Mullet systemic iridoviral disease	-	+	(2008)	III	1

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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	Systemic iridoviral disease was observed in mullet, *Mugil cephalus*, juveniles originally imported from Taiwan. Affected mullet had darkened bodies, reddening of mouths, pale gills and enlarged spleens. Ballooning cells with basophilic cytoplasmic inclusion bodies and marginated nuclei were seen in heart, gills and kidneys on histopathological examination. Viral isolates tested negative by PCR using the RSIV primer set 4 recommended in the OIE diagnostic manual, but tested positive using the RSIV primer set 3 (Kurita, Nakajima, Hirono and Aoki, 1998). Such findings were consistent with a systemic iridoviral disease.

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

Country: SRI LANKA **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. Spring viraemia of carp	?	?	?		
4. Viral haemorrhagic septicaemia	***	***	***		
5. Epizootic ulcerative syndrome (EUS)	-	-	-		
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. Abalone viral mortality	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	***	***	***		
5. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+	+	+	III	1
3. Yellowhead disease (YH virus, gill-associated virus)	?	?	?		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	+	+	+	III	2
5. Infectious hypodermal and haematopoietic necrosis	?	?	?		
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
7. Infectious myonecrosis	***	***	***		
8. White tail disease (MrNV)	***	***	***		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	***	***	***		
10. Milky lobster disease	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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	WSSV-disease incidences were very high during this quarter. The shrimps (*P. monodon*) of 6-8 weeks' old displayed typical signs of WSSV infection and the mortality rates were very high. The entire shrimp growing area in the North-Western province was affecetd except Chilaw. The outbreak was initiated in early June 2008.
2	MBV-Occurrences were reported from *P. monodon* post larvae from shrimp hatcheries and the prevalence was high during this period. Post larvae samples were checked using malachite green staining method and also PCR ws used for confirmation. The PL stocks with very high levels of infection were not recommened for stocking.

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

Country: THAILAND **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	III	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. Spring viraemia of carp	0000	0000	0000	III	
4. Viral haemorrhagic septicaemia	0000	0000	0000	III	
5. Epizootic ulcerative syndrome (EUS)	-	-	-	II	
6. Red seabream iridoviral disease	0000	0000	0000	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. Abalone viral mortality	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
5. Acute viral necrosis (in scallops)	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	+	-	III	1
2. White spot disease	+	+	-	III	2
3. Yellowhead disease (YH virus, gill-associated virus)	-	+	+	III	3
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	-	-	-		
5. Infectious hypodermal and haematopoietic necrosis	+	+	+	III	4
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	+	-	+		5
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	***	***	***		
10. Milky lobster disease	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1. Ranavirus	-	-	-	III	

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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 563 shrimp PL samples had been tested at PCR Laboratories of the DOF before stocking in culture ponds under the health management and disease control strategies. 1 specimen or 0.17% recorded as RT-PCR positive or carrying TSV genes that advised to be destroyed.
2	A total of 767 shrimp PL samples had been tested at PCR Laboratories of the DOF before stocking in culture ponds under the health management and disease control strategies. 4 specimens or 0.5% recorded PCR positive or carrying SEMBV genes that advised to be destroyed.
3	A total of 277 shrimp PL samples had been tested at PCR Laboratories of the DOF before stocking in culture ponds under the health management and disease control strategies. 31 specimen or 11.2% recorded PCR positive or carrying YHV genes that advised to be destroyed.
4	A total of 652 shrimp PL samples had been tested at PCR Laboratories of the DOF before stocking in culture ponds under the health management and disease control strategies. 53 specimens or 8.1% recorded as PCR positive or carrying IHHNV genes that advised to be destroyed. The tested specimens did not show disease clinical signs and there was no outbreak due to IHHNV infection in the hatcheries.
5	35 giant prawn specimens were sampled under the MrNV surveillance program using RT-PCR technique. The specimens obtained from wild and farm prawns. The MrNV RT-PCR results were positive in 6/35 specimens. However no disease clinical signs in all prawns. Concepts in bio-security for disease prevention had been advised to hatchery owners, operators or farmers.

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

Country: VIETNAM **Period: April-June 2008**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. Spring viraemia of carp	0000	0000	0000		
4. Viral haemorrhagic septicaemia	0000	0000	0000		
5. Epizootic ulcerative syndrome (EUS)	+	+	+	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	0000	0000	0000		
9. Viral encephalopathy and retinopathy	+	+	+	I,II	2
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. Abalone viral mortality	0000	0000	0000		
Non OIE-listed diseases					
4. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
5. Acute viral necrosis (in scallops)	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+	+	+	I,II,III	3
3. Yellowhead disease (YH virus, gill-associated virus)	+	+	+	I,II,III	4
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
7. Infectious myonecrosis	0000	0000	0000		
8. White tail disease (MrNV)	***	***	***		
Non OIE-listed diseases					
9. *Monodon* slow growth syndrome	0000	0000	0000		
10. Milky lobster disease	+	+	+	I	5
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION[b]
LISTED BY THE OIE
Finfish: Infectious salmon anaemia; Gyrodactylosis (*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	The disease occurred in catfish (*Pangasius micronema*, *P. hypophthalmus*) cultures with high density in zone in the South (Soc Trang, Tra Vinh). Some freshwater fish (grass carp, *Ctenopharyngodon idellus* cultured in zone in the north. Mortality rate: low, scattered
2	Pathogen: *Edwardsiella ictaluri* Infection occurred in catfish (*Pangasius micronema*, *P. hypophthalmus*) intensive cultured. This disease scattered in Soc Trang, Tra Vinh, Ben Tre.
3	Pathogen: White Spot Syndrome Virus WSSV Infection occurred in black tiger shrimp (*Penaeus monodon*) and white leg shrimp (*P. vannamei*) This disease scattered in Hochi Minh City, Soc Trang, Tra Vinh, Ben Tre, Ninh Binh, Thai Binh, Bac Liue, Kien Giang, Thanh Hoa, Quang Binh, Quang Ninh
4	Pathogen: Gill-Associated Virus GAV Infection occurred in black tiger shrimp (*Penaeus monodon*) This disease scattered in Ho Chi Minh City, Soc Trang, Tra Vinh, Ben Tre, Bac Lieu, Kien Giang
5	Pathogen: Rickettsia-like bacteria Infection occurred in Lobsters *Panulirus ornatus, P. homarus* cultured in floating caged on the sea in the growing out stage Disease characteristic: Labsters have black gill, uncovered head, and milky colored abdomen traces The disease scattered in Khanh Hoa, Phu Yen

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 2008)

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. Koi herpes virus disease	
1.2 MOLLUSC DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Bonamia exitiosa*	1. Infection with *Marteilioides chungmuensis*
2. Infection with *Perkinsus olseni*	2. Acute viral necrosis (in scallops)
3. Abalone viral mortality	
1.3 CRUSTACEAN DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Taura syndrome	1. Monodon slow growth syndrome
2. White spot disease	2. Milky lobster syndrome
3. Yellowhead disease (YH virus,gill-associated virus)	
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	
5. Infectious hypodermal and haematopoietic necrosis	
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	
7. Infectious myonecrosis	
8. White tail disease (MrNV)	
1.4 UNKNOWN DISEASES OF A SERIOUS NATURE	
OIE-listed diseases	**Non OIE-listed diseases**
	1. Akoya oyster disease
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. Gyrodactylosis (*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

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

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

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

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

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

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

Aquatic Animal Diseases Significant to Asia-Pacific: Identification Field Guide: NACA and the Australian Government Department of Agriculture, Fisheries and Forestry (DAFF) have recently produced this field guide to support aquatic animal health surveillance, early response and reporting in the region. The field guide drew extensively from the experiences and previous and ongoing research activities in health management in Australia and other countries in Asia and thus joins the growing body of practical knowledge published for Asia-Pacific aquaculture and fisheries. The regional field guide covers all diseases listed in the Quarterly Aquatic Animal Disease (QAAD) reporting system, which includes all OIE listed diseases plus diseases of regional concern. The field guide is available for free download at http://www.enaca.org/modules/news/article.php?storyid=1003

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

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

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

OIE Aquatic Animal Health Code, 9th Edition, 2006 and OIE Manual of Diagnostic Tests for Aquatic Animals, 5th Edition, 2006 http://www.oie.int/eng/publicat/en_aqua.htm. The aim of the aquatic animal health code is to assure the sanitary safety of international trade in aquatic animals and their products. This is achieved through the detailing of health measures to be used by the competent authorities of importing and exporting countries to avoid the transfer of agents pathogenic for animals or humans, while avoiding unjustified sanitary barriers. The health measures in the aquatic animal health code (in the form of standards, guidelines and recommendations) have been formally adopted by the OIE international committee, the general assembly of all delegates of OIE Member Countries. The Aquatic Animal Health Code is available on http://www.oie.int/eng/normes/fcode/A_00003.htm. The book may be ordered from pub.sales@oie.int

Way Forward: Building capacity to combat impacts of aquatic invasive alien species and associated trans-boundary pathogens in ASEAN countries: NACA 2005. The Final report of the regional workshop, hosted by the Department of Fisheries, Government of Malaysia, on 12th-16th July 2004. Network of Aquaculture Centres in Asia-Pacific, Bangkok, Thailand. 358pp. www.enaca.org (free download)

Diseases in Asian Aquaculture V. 2005. Walker, P.J., R.G. Lester and M.G. Bondad-Reantaso (editors). Proceedings of the 5th Symposium on Diseases in Asian Aquaculture. Fish Health Section, Asian Fisheries Society, Manila. 635 pp. Contact: suppalak68@yahoo.com.

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

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

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

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

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

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

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

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

List of National Coordinators*

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New 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.

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