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QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

July-September 2007

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Foreword

Emerging Diseases in the Asia Pacific Region

The sixth meeting of the Asia Regional Advisory Group (AG) on Aquatic Animal Health (AGM-6) was held on 12-14 December 2007 at NACA Secretariat in Bangkok, Thailand. The meeting attended by 10 Advisory Group and 1 co-opted member, addressed key aquatic animal health issues in Asia, including spread of emerging aquatic animal diseases in the region, Outcomes from the OIE General Session (May 2007) and the Aquatic Animal Health Standards Commission meeting (October 2007), World Animal Health Information System (WAHIS), regional quarterly aquatic animal disease reporting system, implementation of the Asia Regional Technical Guidelines on Health Management and the Responsible Movement of live aquatic animals, functioning of the three tier regional resource base and ways to further strengthen regional and international cooperation in Asian aquatic animal health management. The AG constituted by NACA governing council in 2001, has been providing advice to Asian governments and NACA on aquatic animal health management matters in the region. Members are experts from government and the private sector with representatives from FAO, the Aquatic Animal Health Standards Commission of the OIE, the OIE Regional Representation for Asia and the Pacific, SEAFDEC and NACA. The final report has been circulated to the region's fisheries and veterinary authorities and made available to the general public for free download through the NACA website (www.enaca.org). The following section provides some of the highlights concerning emerging crustacean and finfish diseases in the region.

Crustacean Diseases:

- The cryptic nature of crustacean viruses and their ability to cause multiple infections raises important issues to be addressed when considering the transboundary movement of live crustaceans.
- Yellowhead virus (YHV) and Whitespot syndrome virus (WSSV) are lethal to all cultivated shrimp in the region. WSSV still remains an important problem in the region. Six geographical types of YHV have been identified. YHV-1 found in Thailand is considered to be highly virulent followed by YHV-II (Gill associated virus - GAV) found in Australia. All other types of YHV were considered to be non virulent and therefore not significant.
- Taura syndrome virus (TSV) is still an important problem of *P.vannamei.* Even though TSV is known to infect local species such as *P.monodon*, *M.rosenbergii* and *P.japonicus*, its effects were considered to be not significant. There has been no reported effect on cultivated Asian shrimp reported since 1998 (almost ten years). Most domesticated stocks of *P.vannamei* are highly tolerant.
- TSV outbreaks would appear to originate from postlarvae (PLs) that are not specific pathogen free (SPF), although carriers such as wild crabs, which have been shown to be susceptible to long-term infection, may play an important role.
- IMN was recognized as the most recent threat. IMN was first reported in Brazil in 2002 and it was associated with gradual mortality reaching up to 70%. IMN was reported for the first time in the region (Indonesia) in June 2006 and, for its close similarity (99.6%) with the Brazilian strain it would appear to have been associated with the movement of crustaceans from Brazil to the region. It is now reported from *P. vannamei* farms on both Java and Sumatra islands. PCR kits are now available in the region for screening PL for IMNV.
- Muscle cramp syndrome, similar in pathology and clinical appearance to IMN, has been reported from many countries. This condition, for some unknown reason, is common in *P.vannamei*, but these shrimp test negative for IMNV infection

- Infection with *P.vannamei* nodavirus (*Pv*NV), first reported from Belize (2004) is indistinguishable from IMN in gross signs and histopathology has not yet been reported from Asia.
- Abdominal segment deformity disease (ASDD) was reported from Thailand and Indonesia in *P.vannamei*. The appearance of affected shrimp is similar to some infections with Infectious hypodermal and haematopoietic necrosis virus (IHHNV) except there is no retarded growth and no bent rostra. PCR tests for IHHNV are negative as are PCR and Reverse transcriptase PCR (RT-PCR) tests for other viruses including IMNV, *Pv*NV and Laem Singh necrosis virus (LSNV). Many viral-like particles are found in the muscle and ventral nerve cord and it appears to be caused by a new pathogen originating from natural Asian carrier species. Although not affecting survival, the occurrence of ASDD in *P.vannamei* farms in Thailand and Indonesia is associated with deformities that lead to a reduction in market prices of about 10 baht/kg, therefore leading to significant financial losses.
- IHHNV was considered an emerging problem for *P.vannamei* in Philippines.
- For *P.monodon*, WSSV and YHV are still considered most serious pathogens. The next most serious problem in *P.monodon* is Monodon slow growth syndrome (MSGS). This is followed by HPV and Monodon baculovirus (MBV) that do not appear to cause mortality but retarded growth.
- MSGS is the most significant problem of shrimp in Thailand, and possibly in some other *P. monodon* culturing countries like India. Recent results have shown that small shrimp from MSGS ponds show retinopathy. They are positive by RT-PCR for LSNV and also show strong *in situ* hybridization reactions in necrotic retinas. Large shrimp from the same ponds are also positive for LSNV by RT-PCR but show no retinopathy. Shrimp from normal growth ponds may also be positive by RT-PCR but show no retinopathy. Therefore, LSNV appears to be associated with MSGS but the possibility of involvement of other factors (including pathogen(s)) is being studied. Further work in this direction is underway. LSNV has also been reported from some other countries in the region.
- Non-pathogenic YHV "type-4" and an unknown, icosahedral, viral-like particle associated with tegumental glands (tentatively called tegumental gland associated virus) are being investigated for their role as potential partners of LSNV in causing MSGS.
- A new *Macrobrachium baculovirus* and HPV have been detected. They cannot be detected with MBV or HPV methods
- Milky lobster disease (MLD) has been reported recently from caged lobsters in Vietnam (10 million USD losses). It appears to be caused by a new rickettsial type bacterium. An intensive research programme is underway in Vietnam
- NHP is still exotic to the region and is considered a potential threat to shrimp farming in the region.
- *Macrobrachium rosenbergii* nodavirus (*Mr*NV) was considered to be a serious problem in freshwater prawn farming in some countries of the region. *Mr*NV is capable of infecting *P.monodon*, but to date, there is no evidence of any disease.

Finfish Diseases:

- Epidemiological data on finfish disease is needed.
- A large number of health problems in finfish are still detected in several countries in the region.
- *Edwardsiella tarda* was identified as a problem in several countries and associated with outbreaks in red seabream, Japanese flounder, turbot, catfish and eel.
- "BB" or big belly is associated probably with a new *Vibrio* sp. causing high mortality in seabass fry. The syndrome can be easily diagnosed based on the occurrence of clinical signs (blacking of fish, thin tail musculature and swollen abdomen filled with granulomatous connective tissue). Mortality is high (up to 80% in one week) and so far is found to affect only Asian seabass.
- *Streptococcus dysgalactiae* is an emerging disease of yellowtail in Japan, affecting primarily larger fish and detected also in China. No further cases have been found

- *Francisella* sp. is an emerging problem of cod and salmon in Norway and Chile, respectively. It is now causing emerging problems in tilapia in Indonesia. This is the first *Francisella* sp described in fish. The homogeneity of the isolates form different locations is still unclear and requires further investigation.
- Visceral toxicosis in catfish is a major problem in the US and similar clinical disease signs were seen in catfish in China. No agent has been identified with the disease and no further information has been reported.
- Loss of mucus and septicaemia syndrome is a major problem of European eel in China. No agent has been identified with the disease although it would appear to be associated with a virus. Further investigations are ongoing in China to evaluate the causes of the disease.
- *Streptococcus iniae* remains a major problem in the marine environment and is found also in freshwater environments.
- *Tenacibaculum maritimum* is a global problem affecting most aquaculture marine species with mortalities up to 90% in fingerlings. Its isolation is difficult, leading most likely to an underestimation of the problem
- *Nocardia seriolae* is a problem of increasing importance, being associated with higher mortality and showing an increasing geographical spread. It seems that some fish species are more susceptible than others. Isolation is difficult and is successful in only approximately 50% of all cases.
- *Streptococcus agalactiae* is still a major problem in freshwater environments and especially in tilapia culture
- *Edwardsiella ictaluri* is a major problem in catfish in the US. A vaccine is registered in the US.
- *Flavobacterium columnare* is a global problem in the freshwater environment and particularly important in tilapia culture.
- Other important pathogen/diseases include: *Lactococcus garvieae*, *Vibrio anguillarum O1, Aeromonas salmonicida* subsp. *Salmonicida, Photobacterium damsela* subsp. *Piscicida,* Red sea bream iridovirus and other iridoviruses, Viral nervous necrosis (VNN) , KHV, Spring viraemia of carp (SVC), Grass carp reovirus, Channel catfish virus (CCV)

Diseases Listed by the OIE in the *Aquatic Animal Health Code* 2007 for global reporting and List of Diseases in the Asia-Pacific Quarterly Aquatic Animal Disease (QAAD) Report for regional reporting effective from January 2008, have been provided in this issue.

Reports Received by the NACA Secretariat

Country: AUSTRALIA **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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)	+	-(2007)	-(2007)	I	2
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8. Epitheliocystis	***	***	***		
9. Grouper iridoviral disease	0000	0000	0000		
10. Viral encephalopathy and retinopathy	+	-(2007)	-(2007)	II	3
11. Enteric septicaemia of catfish	-(2001)	-(2001)	-(2001)		4
12. Bacterial kidney disease	0000	0000	0000		
13. Infectious pancreatic necrosis	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Perkinsus olseni*	+	+	+	II	5
3. Abalone viral mortality	***	***	***		
Non OIE-listed diseases					
4. Infection with *Marteilia sydneyi*	-(2007)	-(2007)	-(2007)		6
5. Infection with *Marteilioides chungmuensis*	***	***	***		
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/ -(2007)	0000/ -(2007)	0000/ -(2007)		7
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	-(2005)	-(2005)	-(2005)		8
5. Infectious hypodermal and haematopoietic necrosis	-(2004)	-(2004)	-(2004)		9
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
Non OIE-listed diseases					
7. Infectious myonecrosis	***	***	***		
8. Baculoviral midgut gland necrosis	0000	0000	0000		
9. White tail disease (MrNV and XSV)	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.Abalone viral ganglioneuritis	+	+	+	III	10
2.Oyster oedema disease	+	+	+	III	11

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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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, EUS** 1. **Reported in Queensland** in July 2007. Passive surveillance; 2. **In** wild bream (*Acanthopagrus australis*) and whiting (*Sillago* sp.) 3. **Clinical signs-** pale skin ulcers usually near the dorsal fin; 4. **Pathogen-** *Aphanomyces invadans*; 5. **Mortality rate-** estimated 2% of the population at the location affected; 6. **Economic loss-** unknown; 7. **Geographic extent-** single location off Ilawong Beach; 8. **Containment measures-** none; endemic infection; 9. **Laboratory confirmation-** field investigation by fisheries officers confirmed affected fish had lesions typical of EUS; 10. **Publications-** unpublished. Not reported during this period despite active surveillance but is known to have occurred previously in Northern Territory (last year reported 2006). Considered endemic to certain streams and rivers of the Northern Territory. Not reported despite passive surveillance, but is known to have occurred previously in New South Wales (last year reported 2006) and Victoria (last year reported 2002). Passive surveillance and never reported in South Australia and Tasmania. Not reported this quarter but considered to be endemic in Western Australia. No information available in the Australian

3	**Viral encephalopathy and retinopathy** 1. **Reported in Queensland** in July 2007. Passive surveillance; 2. **In** a) *Lates calcarifer,* 28-day old larvae and (b) *Lates calcarifer,* 23-day old larvae; 3. **Clinical signs-** a) abnormal swimming behaviour and b) fry appearing thin and small; 4. **Pathogen-** betanodavirus; 5. **Mortality rate-** not reported; 6. **Economic loss-** not reported; 7. **Geographic extent-** a) 1 tank on single farm, b) 1 tank on single farm 8. **Containment measures-** none, endemic to area; 9. **Laboratory confirmation-** diagnosed by histopathology; 10. **Publications-** unpublished. Not reported this period despite targeted surveillance from South Australia (last year reported 2004). Not reported this quarter despite active surveillance from Northern Territory (last year reported 2005). Not reported this period 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 but is known to have occurred in zebrafish (*Brachydanio rerio*) in PC2 containment in Tasmania (last year reported 2001). Never reported in New South Wales, Northern Territory, Queensland, South Australia and Victoria despite passive surveillance. No information available in the Australian Capital Territory and Western Australia.
5	***Perkinsus olseni*** 1. **Reported in South Australia** in July, August and September 2007. Targeted surveillance; 2. **In** wild (but not cultured) blacklip abalone (*Haliotis rubra)* and greenlip abalone (*Haliotis laevigata)*; 3. **Clinical signs-** pustules on epipodium (normal clinical signs of perkinsosis in abalone); 4. **Pathogen-** *Perkinsus olseni*; 5. **Mortality rate-** no mortalities observed, some morbidity associated with infection. Infections are ongoing; 6. **Economic loss-** unknown; 7. **Geographic extent-** open system. Lower Eyre and Yorke Peninsulas; 8. **Containment measures-** none; 9. **Laboratory confirmation-** diagnosed by histology; 10. **Publications-** unpublished. 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 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	Infection with *Marteilia sydneyi* was not reported this period despite passive surveillance but is known to have occurred previously in New South Wales (last reported first quarter 2007), Queensland (last year reported 2006) and Western Australia (last year reported 1994). Passive surveillance and never reported in the Northern Territory, South Australia, Tasmania or Victoria. No information available in the Australian Capital Territory (no marine water responsibility).
7	**Yellowhead virus:** Active surveillance and never reported in the Northern Territory. Passive surveillance and never reported in New South Wales, Queensland, South Australia, Victoria and Western Australia. No information available from the Australian Capital Territory (no marine water responsibility) and Tasmania (susceptible species not present). Gill-associated virus was not reported this period despite passive surveillance but is known to have occurred previously in the Northern Territory (last reported second quarter 2007). Not reported this quarter despite active surveillance in Western Australia (last year reported 2005). Not reported this period despite passive surveillance but known to have occurred previously in New South Wales (last year reported 2003). Gill-associated virus is considered endemic in Queensland where the lack of a clear case definition, of readily available detection tests and an apparent role for mixed virus infections make any conclusion about the incidence of GAV-related epizootics impossible. Passive surveillance and never reported in South Australia and Victoria. No information available in Australian Capital Territory (no marine water responsibility) and Tasmania (susceptible species not present).

8	Spherical baculovirosis was not reported this period despite passive surveillance but is known to have occurred previously in Queensland (last year reported 2005), 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).
9	Infectious hypodermal and haematopoietic necrosis virus was not reported this period despite passive surveillance. This virus is known to have previously occurred in Queensland (last year reported 2004) and in the Northern Territory (last year reported 2003). No disease has been associated with the virus. The Australian virus is considered to be closest to the avirulent Madagascar strain. 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).
10	Abalone viral ganglioneuritis continues to be reported in wild abalone on reefs in western Victoria. Monitoring indicates that abalone farms continue to be free from the disease.
11	*Pinctada maxima* mortalities have continued on a small number of pearl oyster leases in northern 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: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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. Epitheliocystis	***	***	***		
9. Grouper iridoviral disease	***	***	***		
10. Viral encephalopathy and retinopathy	***	***	***		
11. Enteric septicaemia of catfish	***	***	***		
12. Bacterial kidney disease	***	***	***		
13. Infectious pancreatic necrosis	***	***	***		
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 *Marteilia sydneyi*	***	***	***		
5. Infection with *Marteilioides chungmuensis*	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	***	***	***		
2. White spot disease	+	+	+	II	2
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*)	***	***	***		
Non OIE-listed diseases					
7. Infectious myonecrosis	***	***	***		
8. Baculoviral midgut gland necrosis	***	***	***		
9. White tail disease (MrNV and XSV)	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1. *Pangasius* mortality due to unidentified disease	***	***	+()	II	3

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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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		-	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	Outbreak of epizootic ulcerative syndrome (EUS) was reported during the reported period in *Anabas testudineus* in northern regions of Bangladesh. Fish were having hemorrhage, and lesions on different locations of skin surface. Disease diagnosis was performed by histology (MG). Mortality rate varied from 8 – 26% in different farms. Different chemicals such as lime, salt, potassium permanganate and imported commercial drugs were applied by farmers to control the disease. Most of the farmers exchanged 20-30% water before and at the time of treatment.
2	White spot disease in *Penaeus monodon* occurred in extensive shrimp farms at Bagerhat, Khulna and Cox'sBazar belongs to the southern regions of the country. Typical white spots were found on carapace. PCR test also confirmed the presence of white spot virus. Mortality rate varied from 20-85% in different farms.
3	Pangassius farms at Shreemongal in the south eastern region, were affected by an unknown disease. No remarkable clinical signs were observed in *Pangassius spp*. Fish were swimming at the water surface with sluggish movement. Faded head surface. Histology: Loss of secondary lamellae, necrosis and fused lamellae. Massive damage of hepatic cells in liver. Partial necrosis of kidney tubules and glumeruli. Gill After 15-20 minutes swimming fish abdomen turned upward and died. Total cumulative mortality within 10 days upto 28%.

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

Country: CAMBODIA **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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)	-	-	-	I & II	
6. Red seabream iridoviral disease					
7. Koi herpesvirus disease	***	***	***		
Non OIE-listed diseases					
8. Epitheliocystis					
9. Grouper iridoviral disease	***	***	***		
10. Viral encephalopathy and retinopathy	***	***	***		
11. Enteric septicaemia of catfish	***	***	***		
12. Bacterial kidney disease					
13. Infectious pancreatic necrosis					
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 *Marteilia sydneyi*					
5. Infection with *Marteilioides chungmuensis*					
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*)					
Non OIE-listed diseases					
7. Infectious myonecrosis					
8. Baculoviral midgut gland necrosis					
9. White tail disease (MrNV and XSV)	***	***	***		
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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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?	Suspected by reporting officer but presence not confirmed	(year)	Year of last occurrence

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

1. Epidemiological comments:

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

Comment No.	
1	
2	
3	

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

Country: HONG KONG SAR Period: July-September 2007

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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	II	
5. Epizootic ulcerative syndrome (EUS)	0000	0000	0000	II	
6. Red seabream iridoviral disease	-	-	+	III	
7. Koi herpesvirus disease	-	-	-	III	
Non OIE-listed diseases					
8. Epitheliocystis	(2002)			II	
9. Grouper iridoviral disease	-	-	-	III	
10. Viral encephalopathy and retinopathy	-	+	-	III	1
11. Enteric septicaemia of catfish	0000	0000	0000	II	
12. Bacterial kidney disease	0000	0000	0000	II	
13. Infectious pancreatic necrosis	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	0000	0000	0000	II	
Non OIE-listed diseases					
4. Infection with *Marteilia sydneyi*	0000	0000	0000	II	
5. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	III	
2. White spot disease	-	+	-	III	2
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000	II	
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	
Non OIE-listed diseases					
7. Infectious myonecrosis	0000	0000	0000	II	
8. Baculoviral midgut gland necrosis	0000	0000	0000	II	
9. White tail disease (MrNV and XSV)	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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	One case of disease caused by nervous necrosis virus was seen during the reporting period in a btach of 14 day old gaint grouper, morbidity rate was about 50% with very low mortality rate
2	White spot syndrome virus was detected by PCR during routine surveillance testing of ornamental crabs and red lobsters, but these animals were clinically health with no gross pathological lesions

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

Country: INDIA **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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. Epitheliocystis	0000	0000	0000		
9. Grouper iridoviral disease	0000	0000	0000		
10. Viral encephalopathy and retinopathy	0000	0000	0000		
11. Enteric septicaemia of catfish	0000	0000	0000		
12. Bacterial kidney disease	0000	0000	0000		
13. Infectious pancreatic necrosis	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 *Marteilia sydneyi*	0000	0000	0000		
5. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+()	+()	+()		1
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. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
Non OIE-listed diseases					
7. Infectious myonecrosis	0000	0000	0000		
8. Baculoviral midgut gland necrosis	0000	0000	0000		
9. White tail disease (MrNV and XSV)	***	***	***		
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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	Report only from very limited area of Navsari, Valsad and Amreli Districts of Gujarat

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

Country: INDONESIA **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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	+	-	+	II	1
Non OIE-listed diseases					
8. Epitheliocystis	0000	0000	0000		
9. Grouper iridoviral disease	-	-	+	III	2
10. Viral encephalopathy and retinopathy	+	+	+	III	3
11. Enteric septicaemia of catfish	0000	0000	0000		
12. Bacterial kidney disease	0000	0000	0000		
13. Infectious pancreatic necrosis	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 *Marteilia sydneyi*	0000	0000	0000		
5. Infection with *Marteilioides chungmuensis*	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					
5. Infectious hypodermal and haematopoietic necrosis	+	-	+	III	6
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
Non OIE-listed diseases					
7. Infectious myonecrosis	+	+	-	III	7
8. Baculoviral midgut gland necrosis	0000	0000	0000		
9. White tail disease (MrNV and XSV)	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

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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	1). Reported in South Kalimantan province in July 2007; West Java province in September 2007. 2). Species affected: Cyprinus carpio from fingerling size to consumable size. 3). Clinical sign: necrosis of gill tissue, color of gill is pale and lesions on the skin surface, hemorrhage and irritation on part of body. 4). All samples have been detected by PCR analysis. 5). Pathogen: Koi Herpesvirus. 6). Mortality rate: low to high (30 to >70%). 7). Economic loss:– 8). Names of infected areas: Banjar district in South Kalimantan province, Sukabumi district in West Java province and Gunung Kidui district in Yogyakarta province. 9). Preventive/control measures: – 10). Laboratory confirmation diagnosed by PCR in Freshwater Aquaculture Development Centre Mandiangin Laboratory in South Kalimantan; Main Center for Freshwater Aquaculture Development Sukabumi Laboratory. 11). Publications: Unpublished.
2	1). Reported in Central Java and Lampung province in Sept 2007. 2). Species affected: grouper. 3). Clinical sign: - 4). All samples have been detected by PCR analysis. 5). Pathogen: Grouper iridoviral. 6). Mortality rate: no mortality. 7). Economic loss: – 8). Names of infected areas: Jepara hatcheries in Central Java and some hatcheries in Lampung province; Situbondo hatcheries in East Java. 9). Preventive/control measures: – 10). Laboratory confirmation diagnosed by PCR in Brackishwater Development Center Jepara Laboratory in Central Java. 11). Publications: Unpublished.

3	1). Reported in Central Java province in July 2007; in East Java province in July until September 2007. 2). Species affected to grouper (*Ephinephelus fuscoguttatus*) and makarell in Central Java Province; tiger grouper (*Ephinephelus fuscoguttatus*) in hatchery at Situbondo, East Java. 3). All samples have been detected by PCR analysis. 4). Pathogen: Betanodavirus. 5). Mortality rate: low. 6). Economic loss: – 7). Names of infected areas: Semarang quarantine office and Jepara in Central Java; some hatchery in Situbondo, East Java. 8). Preventive/control measures: – 9). Laboratory confirmation diagnosed in Brackiswater Development Centre Laboratory in Jepara; Brackiswater Development Center Laboratory in Situbondo, East Java. 10). Publications: Unpublished. 11). All samples have been detected by PCR analysis. 12). Pathogen: Grouper iridoviral. 13). Mortality rate: low. 14). Economic loss: – 15). Names of infected areas: Jepara hatcheries in Central Java and Situbondo hatcheries in East Java; some hatcheries in Lampung province. 16). Preventive/control measures: – 17). Laboratory confirmation diagnosed by PCR in Brackishwater Development Center Jepara Laboratory in Central Java; Mariculture Development Center Lampung Laboratory in Lampung.
4	1). Reported in East Java province in April until June 2007. 2). Species affected to juvenile *L. vanamei*. 3). All samples have been detected by PCR analysis. 4). Pathogen: Taura Syndrome Virus. 5). Mortality rate: medium. 6). Economic loss: - 7). Names of infected areas: shrimp culture in East Java province. 8). Preventive/control measures: – 9). Laboratory confirmation diagnosed by PCR in Brackiswater Development Center Laboratory in Situbondo, East Java. 10). Publications: Unpublished.
5	1). Reported in West Java and Central Java province in July until Sept 2007; in East Java in August 2007. 2). Species affected to vanamei. 3). Clinical sign: there are white spot in skin surface of shrimp had infected, before that affected shrimp are weak and swimming on the surface of water. 4). All samples have been detected by PCR analysis. 5). Pathogen: White Spot Syndrome Virus. 6). Mortality rate: low. 7). Economic loss: - 8). Names of infected areas: several ponds in Banten (West Java); in Jepara and Demak (Central Java); several ponds in East Java. 9). Preventive/control measures: – 10). Laboratory confirmation diagnose by PCR in Brackishwater Development Center Jepara Laboratory in Central Java; Brackishwater Development Center Situbondo Laboratory in East Java. 11). Publications: Unpublished.
6	1). Reported in Central Java in July 2007; East Java in July and September 2007. 2). Species affected to post larvae, juvenile and broodstock of *L. vannamei*. 3). All samples have been detected by PCR analyze. 4). Pathogen: family Parvoviridae. 5). Mortality rate: low. 6). Economic loss: - 7). Names of infected areas: shrimp culture from Yogyakarta in Yogyakarta province; East Java province. 8). Preventive/control measures: – 9). Laboratory confirmation diagnose by PCR in Brackishwater Development Center Laboratory in Jepara; Brackishwater Development Centre Situbondo in East Java. 10). Publications: Unpublished.

7	1). Reported in East Java in July and August 2007. 2). Species affected to juvenile and broodstock of *L. vannamei*. 3). The clinical sign: red color on the abdominal segment end tail fan, myo-necrosis with the white color aspect. 4). Pathogen: IMNV in Totiviridae family. 5). Sample have been detected by PCR analysis. 6). Mortality rate: low. 7). Economic loss: – 8). Names of infected area: several ponds of shrimp culture in East Java province. 9). Preventive/control measures: – 10). Laboratory confirmation diagnosed by PCR analyze in Brackishwater Aquaculture Development Center Situbondo Laboratory in East Java. 11) Publications: Unpublished.
8	1). Report in South Kalimantan province in July 2007; in West Java in September 2007 2). Species affected to *Cyprinus carpio* in South Kalimantan; *Cyprius carpio*, *Clarias gariepinus*, Gouramy and tilapia in West Java. 3). The clinical sign: - in West Java for C. carpio: hemorrhage and irritation on part of body; low to high damage on gill. - in West Java for Clarias gariepinus: hemorrhage and irritation on part of body, no clinical sign on some samples. - in West Java for gouramy: hemorrhage and ulcer on part of body. - in West Java for tilapia: dropsy and melonosis. 5). Mortality Rate: low to high. 6). Economic loss: – 7). Names of infected areas: Banjar district in South Kalimantan; Sukabumi and Tasikmalaya district in West Java and Gunung Kidul district in Yogyakarta. 8). Preventive/control measures: – 9). Laboratory confirmation diagnosed by Freshwater Aquaculture Development Center Mandiangin Laboratory in South Kalimantan that Aeromonas hydrophila as secondary infection from Koi Herpesvirus (KHV); Main Centre for Freswater Aquaculture Development Sukabumi Laboratory. 10). Publications: Unpublished.

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

Country: JAPAN **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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. Epitheliocystis	+	+	+	II	
9. Grouper iridoviral disease	0000	0000	0000	I	
10. Viral encephalopathy and retinopathy	-	+	+	III	
11. Enteric septicaemia of catfish	0000	0000	0000	I	
12. Bacterial kidney disease	+	+	+	III	
13. Infectious pancreatic necrosis	-	-	+	III	
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 *Marteilia sydneyi*	0000	0000	0000	I	
5. Infection with *Marteilioides chungmuensis*	+	+	+	III	
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	
Non OIE-listed diseases					
7. Infectious myonecrosis	0000	0000	0000	I	
8. Baculoviral midgut gland necrosis	0000	0000	0000	I	
9. White tail disease (MrNV and XSV)	0000	0000	0000	I	
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	-	+	+	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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	
2	

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

Country: MALAYSIA **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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)	-	-	- (1986)		
6. Red seabream iridoviral disease	-	-	-		
7. Koi herpesvirus disease	?	+	+	III	1
Non OIE-listed diseases					
8. Epitheliocystis	***	***	***		
9. Grouper iridoviral disease	-	-	-		
10. Viral encephalopathy and retinopathy	-	+	-	I,II,III	2
11. Enteric septicaemia of catfish	***	***	***		
12. Bacterial kidney disease	***	***	***		
13. Infectious pancreatic necrosis	***	***	***		
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 *Marteilia sydneyi*	***	***	***		
5. Infection with *Marteilioides chungmuensis*	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	-	-		
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	-	-	-		
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	****	****	****		
Non OIE-listed diseases					
7. Infectious myonecrosis	***	***	***		
8. Baculoviral midgut gland necrosis	***	***	***		
9. White tail disease (MrNV and XSV)	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1. *Streptococcus* infection	+	+	+	I,II	4

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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	Koi herpesvirus disease Active surveillance 1). in Perak 2). In; ornamental koi 3). Clinical signs- no clinical signs observed 4). Pathogen- KHV 5). Mortality rate- none 6). Economic loss- none 7). Geographic extent- a) 3 main koi cultured area in Perak located quite far from each other 8). Containment measures- n/a 9). Laboratory confirmation- a) diagnosed by PCR 10). Publications- Unpublished. 11.) Others – There was no clinical signs observed despite positive bands detection. Water temperature is very high in all the 3 areas (29 – 32^{o}C) that might caused non expression of KHV. However, the farmers were told and advised to monitor the water quality and fish closely especially during rainy season towards the end of the year.

2	Viral Encephalopathy And Retinopathy Passive surveillance: 1). Reported in a) Kedah b) Trengganu 2). In; sea bass (*Lates calcarifer*) 3). Clinical signs- lethargic, dark body colouration, high parasites infestation in a) 4). Pathogen- betanodavirus; 5). Mortality rate- high mortality 6). Economic loss- n/a; 7). Geographic extent- a) few ponds with multicultured species b) hatchery 8). Containment measures- n/a 9). Laboratory confirmation- a) diagnosed by PCR 10). Publications- Unpublished. 11). Others – in Kedah case, the outbreak was enhanced by poor water quality pumped into the round tank for 3 consecutive days. Five types of bacterial spp found in sampled fish with Aeromonas and Vibrio species being dorminant. This possibly indicated the poor water quality condition. Very high infestation of Trichodina was also observed.
3	White Spot Syndrome Virus 1). Reported in a) one farm in Penang, Northen part of West Malaysia in *P. vannamei* age 30 days old. Larvae were obtained from local hatchery in northern part of Malaysia (Kedah and Penang). 2). Clinical signs - Isolated from the group,floating on water surface or near the pond bank, the head region appear reddish, skin reddish or pale color, continuous mortality, more than 50% in all pond (9 out of 10 pond). 3). Pathogen: White Spot Syndrome Virus (WSS) 4). Mortality rate: More than 50% 5). Economic loss: Na 6). Geographic extent: pond 7). Containment measures - To harvest/cull infected stock from all ponds in the farm. Treat the pond water with 30ppm chlorine for 3 days for three consecutive treatments before releasing the water out. Drying of pond under the sun will be carried out until the soil/mud on the pond bottom cracked and really dry. Drying up of the pond will be prolonged during rainy season. 8). Laboratory confirmation - Diagnosed by PCR (Commercial detection kit IQ2000 WIT MultiVir System for WSS/IHHNV/TSV. 9). Publications – unpublished 10).Others: No mortality or health related problems of shrimp were reported from the surrounding area.
4	Streptococcal infections 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 : unpublished

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

Country: MYANMAR **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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. Epitheliocystis	***	***	***		
9. Grouper iridoviral disease	***	***	***		
10. Viral encephalopathy and retinopathy	***	***	***		
11. Enteric septicaemia of catfish	***	***	***		
12. Bacterial kidney disease	***	***	***		
13. Infectious pancreatic necrosis	***	***	***		
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 *Marteilia sydneyi*					
5. Infection with *Marteilioides chungmuensis*					
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	-	-		
2. White spot disease	-	-	+()	III	1
3. Yellowhead disease (YH virus, gill-associated virus)	***	***	***		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	***	***	***		
5. Infectious hypodermal and haematopoietic necrosis	+()	-	-	III	2
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
Non OIE-listed diseases					
7. Infectious myonecrosis	***	***	***		
8. Baculoviral midgut gland necrosis	***	***	***		
9. White tail disease (MrNV and XSV)	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.Lernaesis disease (parasitic disease)	+()	-	-	I,II	3

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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	A total of 17 samples of *P. monodon* have been tested at PCR lab of Department of Fisheries (DOF) of which 1 sample (5.88%) was recorded as WSSV positive
2	A total of 17 samples of *P.monodon* have been tested at PCR lab of Department of Fisheries (DOF) of which 2 samples (11.76%) was recorded as IHHNV positive
3	1. Reported in Yangon Division, Twante Township 2. In Rohu (*Labeo rohita*) 3. Clinical signs- hemorrages appear in infected areas like skin, fins and gill. Secrete excess mucus due to irritation 4. Pathogen- *Lernaea* species 5. Mortality rate- 2% 6. Economic loss- n/a; 7. Geographic extent- Earthern ponds (growout ponds) 8. Containment measures-60 kg/ha lime was suggested to be used 9. Laboratory confirmation- level I and II (Microscopy) 10. Publications- Unpublished.

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

Country: NEPAL **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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)	-	-	-		1
6. Red seabream iridoviral disease	***	***	***		
7. Koi herpesvirus disease	***	***	***		
Non OIE-listed diseases					
8. Epitheliocystis	***	***	***		
9. Grouper iridoviral disease	***	***	***		
10. Viral encephalopathy and retinopathy	***	***	***		
11. Enteric septicaemia of catfish	***	***	***		
12. Bacterial kidney disease	***	***	***		
13. Infectious pancreatic necrosis	***	***	***		
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 *Marteilia sydneyi*	0000	0000	0000		
5. Infection with *Marteilioides chungmuensis*	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		
Non OIE-listed diseases					
7. Infectious myonecrosis	0000	0000	0000		
8. Baculoviral midgut gland necrosis	0000	0000	0000		
9. White tail disease (MrNV and XSV)	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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	

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

Country: PHILIPPINES **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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. Epitheliocystis	0000	0000	0000		
9. Grouper iridoviral disease	0000	0000	0000		
10. Viral encephalopathy and retinopathy	-	-	-		
11. Enteric septicaemia of catfish	0000	0000	0000		
12. Bacterial kidney disease	0000	0000	0000		
13. Infectious pancreatic necrosis	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 *Marteilia sydneyi*	0000	0000	0000		
5. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	III	1
2. White spot disease	-	-	-	III	2
3. Yellowhead disease (YH virus, gill-associated virus)	-	-	-	III	
4. Spherical baculovirosis (*Penaeus monodon*-type	+	+	-		3
5. Infectious hypodermal and haematopoietic necrosis	-	-	+	III	
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
Non OIE-listed diseases					
7. Infectious myonecrosis	0000	0000	0000	III	4
8. Baculoviral midgut gland necrosis	***	***	***		
9. White tail disease (MrNV and XSV)	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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	Samples examined, (33 *P. vannanmei* nauplii, post larva, juvenile; 7 *P. monodon*) showed negative results for TSV by PCR test. Examinations conducted by BFAR-Central and Regional Fish Health laboratories and SEAFDEC-Fish Health lab.
2	A total of 361 samples (321 *P. monodon*, post larva, juvenile, adult; 40 *P. vannamei*, nauplii, post larva, juvenile showed negative results for WSV by PCR test. Examinations conducted by BFAR-Central and Regional Fish Health laboratories, NPPMCI and SEAFDEC-Fish Health lab.
3	Out of 150 samples *P. monodon* post larva, 13 samples showed the presence of spherical occlusion bodies by wet mounts of squash preparation of hepatopancreas (stained with malachite green and examined under light microscope).
4	*P. vannamei* nauplii, post larva, juvenile (30 samples) tested by PCR showed negative results for IMNV.

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

Country: SINGAPORE **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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	(2007)	(2007)	(2007)		
Non OIE-listed diseases					
8. Epitheliocystis	-	-	-		
9. Grouper iridoviral disease	-	-	-		
10. Viral encephalopathy and retinopathy	(2007)	(2007)	(2007)		
11. Enteric septicaemia of catfish	0000	0000	0000		
12. Bacterial kidney disease	0000	0000	0000		
13. Infectious pancreatic necrosis	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 *Marteilia sydneyi*	***	***	***		
5. Infection with *Marteilioides chungmuensis*	***	***	***		
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*)	***	***	***		
Non OIE-listed diseases					
7. Infectious myonecrosis	***	***	***		
8. Baculoviral midgut gland necrosis	***	***	***		
9. White tail disease (MrNV and XSV)	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1. Mullet systemic iridoviral disease	-	-	-		

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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	

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

Country: THAILAND **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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	1
Non OIE-listed diseases					
8. Epitheliocystis	-	-	-	II	
9. Grouper iridoviral disease	-	-	-	III	
10. Viral encephalopathy and retinopathy	-	-	-	III	
11. Enteric septicaemia of catfish	0000	0000	0000	II	
12. Bacterial kidney disease	0000	0000	0000	II	
13. Infectious pancreatic necrosis	(1985)	(1985)	(1985)	III	
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	***	***	***	II	
Non OIE-listed diseases					
4. Infection with *Marteilia sydneyi*	0000	0000	0000	II	
5. Infection with *Marteilioides chungmuensis*	0000	0000	0000	II	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	+	-	-	III	2
2. White spot disease	+	+	-	III	3
3. Yellowhead disease (YH virus, gill-associated virus)	+	-	-	III	4
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	-	-	-		
5. Infectious hypodermal and haematopoietic necrosis	+	+	+	III	5
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
Non OIE-listed diseases					
7. Infectious myonecrosis	***	***	***		
8. Baculoviral midgut gland necrosis	***	***	***		
9. White tail disease (MrNV and XSV)	-	-	+	III	6
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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	Detections of the koi herpesvirus (KHV) genes used were a nested PCR which developed at the AAHRI, DOF. 21 koi farms/companies/hobbyists had been surveyed using nested PCR for this reporting period. No PCR positive results obtained and no disease clinical signs or outbreaks reported.
2	A total of 689 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 0.1% recorded as RT-PCR positive or carrying TSV genes that advised to be destroyed.
3	A total of 1,298 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. 11 specimens or 0.8% recorded PCR positive or carrying SEMBV genes that advised to be destroyed.
4	A total of 143 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 0.7% recorded PCR positive or carrying YHV genes that advised to be destroyed.
5	A total of 1,035 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. 193 specimens or 18.7% 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.
6	30 prawn specimens from grow-out ponds in Central region had been monitored for MrNV and XSA and revealed RT-PCR negative during the sampling period. Monitoring at the hatchery level, 45 prawn brooders and 5 post larvae specimens were RT-PCR-tested for the present of both viral genes, MrNV and XSV. The RT-PCR results were 19/45 and 3/5 specimens showed RT-PCR positive, respectively. However no disease clinical signs in all brooders. Concepts in bio-security for disease prevention had been advised to hatchery owners, operators or farmers. The disease was identified at the AAHRI, DOF.

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

Country: VIETNAM **Period: July-September 2007**

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
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, II	1
6. Red seabream iridoviral disease	0000	0000	0000		
7. Koi herpesvirus disease	0000	0000	0000		
Non OIE-listed diseases					
8. Epitheliocystis	0000	0000	0000		
9. Grouper iridoviral disease	0000	0000	0000		
10. Viral encephalopathy and retinopathy	0000	0000	0000		
11. Enteric septicaemia of catfish	+()	+()	+()	I, II	2
12. Bacterial kidney disease	0000	0000	0000		
13. Infectious pancreatic necrosis	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 *Marteilia sydneyi*	0000	0000	0000		
5. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+	+	+	I, III	3
3. Yellowhead disease (YH virus, gill-associated virus)	+	+	+	I, III	4
4. Spherical baculovirosis (*Penaeus monodon*-type	+	+	+	I, III	5
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
Non OIE-listed diseases					
7. Infectious myonecrosis	0000	0000	0000		
8. Baculoviral midgut gland necrosis	0000	0000	0000		
9. White tail disease (MrNV and XSV)	-	-	-		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Akoya oyster disease	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1. Lobster milky syndrome	+	+	+	I	6

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, BUT OF POTENTIAL RELEVANCE
Finfish: Channel catfish virus disease; Piscirickettsiosis.
Molluscs: *Mikrocytos mackini*
Crustaceans: Necrotising hepatopancreatitis**.**

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	The disease occurred in limited zones in Bac Giang, Đien Bien, Son La provinces (freshwater fish); Nam Đinh, Hai Phong provinces (marinewater fish) and scattered in catfish (*Pangasius micronema, Pangasius hypophthalmus*) in Soc Trang, Tien Giang provinces.
2	The disease scattered in limited zones in Vinh Long, Can Tho, Hau Giang, Đong Thap, Soc Trang, Tien Giang provinces - Pathogen: *Edwardsiella ictaluri*.
3	Infection occurred in black tiger shrimp (*Penaeus monodon*), white-leg shrimp (*Penaeus vannamei*). The disease occurred scatterly in Quang Ninh (white leg shrimp); Nam Đinh, Nghe An, Thanh Hoa (black tiger shrimp), Kien Giang, Thua Thien Hue, Quang Binh, Ca Mau, Bac Lieu, Soc Trang, Ho Chi Minh , Binh Thuan, Ninh Thuan, Soc Trang, Tien Giang, Long An provinces - Pathogen: White Spot Syndrome Virus (WSSV).
4	Infection occurred in black tiger shrimp (*Penaeus monodon*) cultured intensively - The disease scatted in 7/2007 in Thai Binh, Ca Mau, Bac Lieu, Soc Trang, Binh Thuan, Tien Giang provinces - Pathogen: Gill - associated virus (GAV).
5	Infection occurred in black tiger shrimp (*Penaeus monodon*) cultured intensively - Disease characteristic: Low growth - The disease occurred in Ho Chi Minh, Binh Thuan, Đong Nai, Tien Giang, Binh Đinh, Ca Mau, Bac Lieu, Soc Trang. - Pathogen: Monodon Baculovirus (MBV).
6	Infection occurred in lobsters (*Panulirus. ornatus, P. homarus*) cultured in floating cages on the sea in the growing out stage. - Mortality rate: maximum of 30% - Disease characteristic: lobster have black gill, uncovered head, and milky – colored abdomen traces. - The disease scattered in Khanh Hoa, Phu Yen, Binh Thuan, Ninh Thuan provinces.- Pathogen : unknown.

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

Diseases Listed by the OIE – Aquatic Animal Health Code 2007

The following diseases of fish are listed by the OIE: Article 1.2.3.1

1. Epizootic haematopoietic necrosis
2. Infectious haematopoietic necrosis
3. Spring viraemia of carp
4. Viral haemorrhagic septicaemia
5. Infectious salmon anaemia
6. Epizootic ulcerative syndrome
7. Gyrodactylosis (*Gyrodactylus salaris*)
8. Red sea bream iridoviral disease
9. Koi herpesvirus disease

The following diseases of molluscs are listed by the OIE: Article 1.2.3.2.

1. Infection with *Bonamia ostreae*
2. Infection with *Bonamia exitiosa*
3. Infection with *Marteilia refringens*
4. Infection with *Perkinsus marinus*
5. Infection with *Perkinsus olseni*
6. Infection with *Xenohaliotis californiensis*
7. Abalone viral mortality

The following diseases of crustaceans are listed by the OIE: Article 1.2.3.3.

1. Taura syndrome
2. White spot disease
3. Yellowhead disease
4. Tetrahedral baculovirosis (*Baculovirus penaei*)
5. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)
6. Infectious hypodermal and haematopoietic necrosis
7. Crayfish plague (*Aphanomyces astaci*)
8. White tail disease
9. Infectious myonecrosis
10. Necrotising hepatopancreatitis[1]
11. Hepatopancreatic parvovirus disease[1]
12. Mourilyan virus disease[1]

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[1] Listing of this disease is under study.

List of Diseases in the Asia-Pacific
Quarterly Aquatic Animal Disease Reports (Beginning 2007)

1. DISEASES PREVALENT IN THE REGION	
1.1 FINFISH DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Epizootic haematopoietic necrosis	1.Epitheliocystis
2. Infectious haematopoietic necrosis	2.Grouper iridoviral disease
3. Spring viraemia of carp	3.Viral encephalopathy and retinopathy
4. Viral haemorrhagic septicaemia	4.Enteric septicaemia of catfish
5. Epizootic ulcerative syndrome	5.Bacterial kidney disease
6. Red seabream iridoviral disease	6.Infectious pancreatic necrosis
7. Infection with koi herpesvirus	
1.2 MOLLUSC DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Bonamia exitiosa*	1. Infection with *Marteilia sydneyi*
2. Infection with *Perkinsus olseni*	2. Infection with *Marteilioides chungmuensis*
3. Abalone viral mortality	
1.3 CRUSTACEAN DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Taura syndrome	1. Infectious myonecrosis
2. White spot disease	2. Baculoviral midgut gland necrosis
3. Yellowhead disease (YH virus,gill-associated virus)	3.White tail disease (MrNV and XSV)
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	
5. Infectious hypodermal and haematopoietic necrosis	
6. Tetrahedral baculovirosis (*Baculovirus penaei*)	
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. Piscirickettsiosis
2.2 Molluscs	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Bonamia ostreae*	1. Infection with *Mikrocytos mackini*
2. Infection with *Marteilia refringens*	
3. Infection with *Perkinsus marinus*	
4. Infection with *Xenohaliotis californiensi*s	
2.3 Crustaceans	
OIE-listed diseases	**Non OIE-listed diseases**
1. Crayfish plague (*Aphanomyces astaci*)	1. Necrotising hepatopancreatitis

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. Infection with koi herpesvirus	
1.2 MOLLUSC DISEASES	
OIE-listed diseases	**Non OIE-listed diseases**
1. Infection with *Bonamia exitiosa*	1. Infection with *Marteilioides chungmuensis*
2. Infection with *Perkinsus olseni*	2. 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

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

Diseases of Tilapia: Web-based publication from Intervet. Diseases of Tilapia: http://aqua.intervet.com/news/2005-11-16_-_Disease_Tilapia.asp; Streptococcosis in Tilapia: http://aqua.intervet.com/news/2006-06-20_-_Streptococcosis_in_Tilapia.asp; Columnaris in Tilapia: http://aqua.intervet.com/news/2006-12-01_-_Columaris_in_tilapia.asp; Parasitic Diseases of Tilapia: http://aqua.intervet.com/news/2007-06-01.asp

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

Australian Aquatic Animal Disease Identification Field Guide: The second, revised edition – Aquatic Animal Diseases Significant to Australia: Identification Field Guide – has recently been released by Australia's Department of Agriculture, Fisheries and Forestry (DAFF). It is very informative and user friendly. The field guide can be downloaded from http://www.disease-watch.com. For further information and copies of the field guide, please contact Alistair Herfort at Alistair.Herfort@daff.gov.au. The field guide provides key field identification tips and differential diagnostic features for all the OIE listed diseases and therefore has considerable regional relevance. Dissemination of the information contained in the field guide to the right stakeholders could contribute significantly to improved surveillance and reporting in the region. DAFF has kindly provided NACA with copies of the field guide for wider dissemination in the region. Those interested to receive copies, please write to NACA at mohan@enaca.org

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

OIE Handbook on Import Risk Analysis for Animals and Animal Products: Vol. I Introduction and qualitative risk analysis, 2004; Vol. II Quantitative risk analysis, 2004.
Volume I of this handbook introduces the concepts of import risk analysis and discusses qualitative risk analysis while Volume II addresses quantitative risk analysis. The key issues in the discipline are explained within the frameworks provided by the World Trade Organization Agreement on the Application of Sanitary and Phytosanitary Measures and the chapters in both *Codes* on risk analysis. The handbook will provide practical guidance to Veterinary Services confronted with the need to analyse the risks posed by imports, to ensure that stakeholders, risk analysts and decision-makers can be confident that the disease risks posed have been identified and can be managed effectively. The handbook will also be useful as a training aid to address the critical need for capacity building in this discipline.

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

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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.

If you require further explanation, please write to the OIE (Tokyo), NACA (Bangkok) or FAO (Rome) at the following addresses, respectively:

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Notes

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