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QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

October-December 2004

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Suraswadi Building, Department of Fisheries
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Bangkok 10900, Thailand

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Viale delle Terme di Caracalla
Rome 00100
Italy

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Foreword

Responsible introductions for sustainable aquaculture

Movement of aquatic animals has been an established practice since the mid-19th century. Majority of the live aquatic animal movements and introductions have been intentional and primarily for the purpose of aquaculture. In recent years the trend is increasing. This is mainly owing to the expansion, intensification and diversification of aquaculture, which is based heavily on movements of live aquatic animals. Often, failure to find solutions to persistent disease problems with native species is used as a justification to introduce exotic species. This is a cause for real concern.

Beginning in 1996, *P. vannamei* was introduced into Asia on a commercial scale. This started in Mainland China and Taiwan Province of China and subsequently spread to Indonesia, Viet Nam, Thailand, and Malaysia. The main reason behind the importation of *P. vannamei* to Asia has been the perceived poor performance, slow growth rate and disease susceptibility of the major indigenous cultured species (e.g. *P. monodon).* Many countries in the region (e.g. China, Thailand, Indonesia and Malaysia) now have a large and flourishing industry for *P. vannamei.*

All major cases of exotic shrimp viral transfers have been associated with movement of live shrimp (brooders and PL). Three well documented cases of viral transfers include: Infectious hypodermal and hematopoetic necrosis virus (IHHNV) from Asia to Americas; white spot syndrome virus (WSSV) initially from China to Japan but then to Asia and the Americas; and Taura syndrome virus (TSV) initially around the Americas but then to Taiwan and Asia.

Shrimp often carry multiple, persistent viral infections. These infections often produce no gross clinical signs of disease and no mortality. Many of these hidden or cryptic viruses are still unknown and hence can't be detected with the presently available molecular screening tools. When shrimp are moved to a new country, the hidden viruses can jump to local species. Therefore, many of the potential disease risks related to transboundary movements of exotic shrimp and their viral pathogens would not be known.

Threats to *P.monodon* and *P.vannamei* industry in the region could come from known and unknown viruses. These could include the unknown effect of known viruses from one species to another where they do not occur. Known, lethal (e.g. TSV) and non-lethal (e.g. LOVV, BP) viruses of *P.vannamei* could affect the native *P.monodon*. On the other hand, known lethal (e.g. WSSV, YHV) and non-lethal (e.g. IHHNV, MOV) viruses of *P.monodon* could affect the introduced *P.vannamei*. In addition, there is a big risk from the unknown (hidden) viruses of each species that may have an unexpected effect on the other.

Since 2003, there have been series of reports (see previous issues of QAAD) of serious outbreaks of TS and WSD in *P.vannamei* in many countries (e.g. China, Thailand, Indonesia) of the region. TSV is spreading in the region and changing genetically. This could conceivably lead to changes in virulence, not only to *P. vannamei* but also to local crustacean species. Species other than *P. vannamei* (e.g. *P. monodon, Macrobrachium rosenbergii*) can also be infected, although no impact has been observed in ponds.

Considering the large-scale culture of *P.vannamei* in inland freshwater areas, potential risks to *M.rosenbergii* should be taken seriously.

Since 2002, monodon slow growth syndrome (MSGS) is associated with significant economic loss in Thailand alone. Slow growth of farmed *P. monodon* has also been reported from other countries in the region (e.g. Indonesia, Malaysia). The cause of the slow growth in *P. monodon* has not been determined but recent trails indicate that a filterable infectious agent is involved. A viral pathogen is possibly involved although known pathogens (e.g. MBV, HPV) appear not to be involved. There is concern that the condition follows the importation of *P.vannamei* and may be due to the introduction of an exotic virus.

Considering the possibilities of pathogen exchange/movement between species, it is important that before importation, farmers/governments should make sure that none of the known pathogens are present and co-habitation tests are included during quarantine to ensure that unknown (hidden) viral pathogens will not cause disease in important local crustacean species (e.g. *P.monodon*, *M.rosenbergii*). Informed decisions regarding these known and unknown risks need to be taken, with close cooperation between governments and the private sector to decide on the best course of action.

Stakeholders intending to import exotic aquatic animals need to adopt more effective risk management measures, based on international and regional agreements. Known and unknown risks need to be considered. Irresponsible or ill-considered movements of exotic animals can impact aquaculture and seriously affect the livelihoods of the small-scale farmers. Data gathering, analysing and sharing information on the health of aquatic animals will become increasingly important to aid decision makers in developing sound policy. International and regional disease reporting systems play a significant role in this direction.

Reports Received by the NACA Secretariat

Country: Australia Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	-(2004)	-(2004)	+	III	1
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *Oncorhynchus masou* virus disease	0000	0000	0000		
4. Spring viraemia of carp	0000	0000	0000		
5. Viral haemorrhagic septicaemia	0000	0000	0000		
6. Viral encephalopathy and retinopathy	-(2004)	+	-(2004)	III	2
7. Infectious pancreatic necrosis	0000	0000	0000		
8. Epizootic ulcerative syndrome (EUS)	-(2004)	+	+	II	3
9. Bacterial kidney disease	0000	0000	0000		
10. Red seabream iridoviral disease	0000	0000	0000		
11. Enteric septicaemia of catfish	-(2001)	-(2001)	-(2001)		4
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	***	***	***		
13. Grouper iridoviral disease	0000	0000	0000		
14. Infection with koi herpesvirus	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Mikrocytos roughleyi*	-(2004)	-(2004)	-(2004)		5
3. Infection with *Haplosporidium nelsoni*	0000	0000	0000		
4. Infection with *Marteilia sydneyi*	-(2004)	-(2004)	-(2004)		6
5. Infection with *Perkinsus olseni/atlanticus* [b/])	+	+	+	I	7
Non OIE-listed diseases relevant to the region					
6. 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/+	0000/+	0000/+	III	8
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	-(2004)	-(2004)	-(2004)		9
5. Infectious hypodermal and haematopoietic necrosis	-(2004)	-(2004)	-(2004)		10
6. Spawner-isolated mortality virus disease	-(?)	-(?)	-(?)		11
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
8. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	0000	0000	0000		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	0000	0000	0000		
3. Abalone viral mortality	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*
Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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** 1. **Reported in Victoria** in December 2004 (last reported 1st quarter 2004). Passive surveillance: 2. **In** wild juvenile redfin perch (*Perca fluviatilis*); 3. **Clinical signs**- mortality; 4. **Pathogen**- epizootic haematopoietic necrosis virus; 5. **Mortality rate**- several hundred; 6. **Economic loss**- nil; 7. **Geographic extent**- 2 lakes; 8. **Containment measures**- Not required- occurrence in endemic area; 9. **Laboratory confirmation**- Diagnosis confirmed by histopathology, virology and immunohistochemistry; 10. **Publications**- Unpublished. Epizootic haematopoietic necrosis was not reported this period despite passive surveillance, but is known to have previously occurred in 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 Northern Territory, Queensland or Western Australia. Annual occurrence of the disease in the Australian Capital Territory, but no laboratory confirmation.
2	**Viral encephalopathy and retinopathy** 1. **Reported in Northern Territory** in November 2004 (last year reported 2002). Active surveillance: 2. **In** 24 day old, hatchery reared Barramundi (*Lates calcarifer*); 3. **Clinical signs**- none reported; 4. **Pathogen**- Nodavirus; 5. **Mortality rate**- approx 10%; 6. **Economic loss**- not identifiable; 7. **Geographic extent**- 2 tanks totaling approximately 12 sq m; 8. **Containment measures**- Not required- occurrence in endemic area; 9. **Laboratory confirmation**- Diagnosis confirmed by histopathology and PCR; 10. **Publications**- Unpublished. 1. **Reported in Queensland** in November 2004 (last reported 2nd quarter 2004). Passive surveillance: 2. **In**; 2 batches of hatchery reared Barramundi (*Lates calcarifer*) fry a) 18 days old and, b) 21 days old; 3. **Clinical signs**- a) lethargy, floating at surface and enlarged swimbladder, b) no clinical signs;

	4. **Pathogen-** betanodavirus; 5. **Mortality rate-** a) 99% mortality at harvest, b) nil; 6. **Economic loss**- not reported; 7. **Geographic extent-** single hatchery (2 batches); 8. **Containment measures-** nil; 9. **Laboratory confirmation-** a)histology, b)histology and immunohistochemistry; 10. **Publications**- Unpublished. 1. **Reported in South Australia** in November 2004 (last reported 3rd quarter 2004). Targeted surveillance: 2. **In** juvenile yellowtail kingfish (*Seriola lalandi*) in a hatchery; 3. **Clinical signs**- nil; 4. **Pathogen**- undescribed nodavirus; 5. **Mortality rate-** nil; 6. **Economic loss**- nil; 7. **Geographic extent**- single pool; 8. **Containment measures**- nil; 9. **Laboratory confirmation-** Diagnosed through screening by nested RT-PCR; 10. **Publications**- Unpublished. Not reported this period despite targeted surveillance from New South Wales (last reported 3rd quarter 2004) Not reported this period despite active surveillance from Tasmania (last year reported 2000). Not reported this period despite passive surveillance from Western Australia (last reported 1st quarter 2004). Never reported from Victoria despite passive surveillance. No information available in the Australian Capital Territory.
3	**Epizootic ulcerative syndrome** 1. **Reported in New South Wales** in December 2004 (last reported August 2004). Passive surveillance: 2. **In** 1 year old farmed silver perch (*Bidyanus bidyanus*); 3. **Clinical signs-** Fish exhibited 1-25mm red erosive ulcers on various parts of the body*;* 4. **Pathogen**- *Aphanomyces invadans*; 5. **Mortality rate**- Approximately 20%; 6. **Economic loss**- ~AU$1000; 7. **Geographic extent- S**ingle earthen pond ~0.2ha in area, on a commercial mid-north coast farm; 8. **Containment measures**- Zero water discharge. Decreased stocking density ; 9. **Laboratory confirmation**- Diagnosis made by clinical signs and confirmed by pathognomonic histopathology (florid granulomatous inflammation associated with the skin lesions); 10. **Publications**- Unpublished. 1. **Reported in Queensland** in November 2004 (last reported 3rd quarter 2004). Passive surveillance: 2. **In** a) 10 month old Murray cod (*Maccullochella peelii*), co-cultured with b) Barcoo grunter (*Scortum barcoo*); 3. **Clinical signs-** lethargy, collecting near water inlet, pale regions on head, and mortality. Haemorrhagic ulcer on single Murray cod; 4. **Pathogen-**; *Aphanomyces invadans;* 5. **Mortality rate-**; 10% combined; 6. **Economic loss-**; not reported; 7. **Geographic extent-**; single pond/single farm; 8. **Containment measures-**; nil; 9. **Laboratory confirmation-**; clinical signs and histology ; 10. **Publications**- Unpublished. Not reported during this period despite passive surveillance, but is known to have occurred in Northern Territory and Western Australia (last year reported 2004) and Victoria (last year reported 2002). Passive surveillance and never reported in South Australia and Tasmania. 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	*Mikrocytos roughleyi:* Not reported during this period despite passive surveillance, but known to have previously occurred in New South Wales (last reported 3rd quarter 2004) and Western Australia (last year reported 1996). Considered enzootic in Queensland but lack of diagnostic submissions. Active surveillance and never reported in Tasmania. Passive surveillance and never reported in Northern Territory, South Australia and Victoria. No information available in Australian Capital Territory (no marine water responsibility).

6	*Marteilia sydneyi:* Not reported this period despite passive surveillance, but known to have previously occurred, in New South Wales and Queensland (last reported 2nd quarter 2004) and Western Australia (last year reported 1994). Active surveillance and never reported in Tasmania. Passive surveillance and never reported in Northern Territory, South Australia or Victoria. No information available in the Australian Capital Territory (no marine water responsibility).
7	***Perkinsus olseni/atlanticus*** 1. **Reported in South Australia** in October, November and December 2004 (last reported 3rd quarter 2004). Targeted surveillance: 2. **In** wild (but not cultured) *Haliotis laevigata* and *H. rubra*. 3. **Clinical signs-** no unusual signs reported; 4. **Pathogen-** *Perkinsus olseni*; 5. **Mortality rate-** in wild unknown; 6. **Economic loss-** not reported from wild harvest; 7. **Geographic extent-** extent of Perkinsus infections are unknown; 8. **Containment measures-** not applicable: endemic; 9. **Laboratory confirmation-** field diagnosis only; 10. **Publications-** Unpublished. Not reported this quarter from Western Australia despite targeted surveillance, but known to have previously occurred in wild, but not in cultured *Haliotis* spp. (last year reported 2003). Not reported this quarter from New South Wales, despite passive surveillance (last year reported 2003). Targeted surveillance and never reported in Tasmania. Passive surveillance and never reported in Northern Territory, Queensland and Victoria. No information available in the Australian Capital Territory (no marine water responsibility).
8	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** 1. **Reported in Northern Territory** in October, November and December 2004 (last reported 3rd quarter 2004). Active surveillance: 2. **In** *Penaeus monodon* (wild sourced broodstock in captivity); 3. **Clinical signs-** not reported; 4. **Pathogen-** gill-associated virus; 5. **Mortality rate-** none reported; 6. **Economic loss-** not reported; 7. **Geographic extent-** not reported; 8. **Containment measures-** not reported; 9. **Laboratory confirmation-** diagnosed by PCR; 10. **Publications-** not reported. 1. **Reported in Western Australia** for the first time in December 2004. Active surveillance: 2. **In** post larvae *Penaeus monodon* (submitted for pre translocation screening) and broodstock from Joseph Bonaparte Gulf; 3. **Clinical signs-** nil; 4. **Pathogen-** gill-associated virus; 5. **Mortality rate-** nil;` 6. **Economic loss-** not reported; 7. **Geographic extent-** marine waters; 8. **Containment measures-**not applicable; 9. **Laboratory confirmation-** diagnosed by 2 step PCR; 10. **Publications-** Unpublished 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).
9	Spherical baculovirosis: Not reported this period despite passive surveillance, but known to have occurred previously in Queensland (last reported in September 2004), New South Wales and Western Australia (last year reported 2002). Never reported despite passive surveillance in Northern Territory, South Australia and Victoria. No information available in the Australia Capital Territory (no marine water responsibility) and Tasmania (susceptible species not present).

10	Infectious hypodermal and haematopoietic necrosis virus was not reported this period. This virus is known to have previously occurred in Northern Territory (last year reported 2003) and in Queensland (last reported 1st quarter 2004). No disease has been attributed to 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).
11	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 SMV-related epizootics impossible.

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

Imports of barramundi cod

Barramundi cod (*Cromileptes altivelis*) is a finfish species that can be imported live under the *Environmental Protection and Biodiversity Conservation Act 1999* administered by the Australian Government Department of Environment and Heritage. The species was included in the 1999 import risk analysis (IRA) of ornamental finfish, on the premise that imported barramundi cod would be sourced from wild populations and destined for public or home aquaria in Australia.
Advances in barramundi cod aquaculture have implications for the potential source and end-use of imported barramundi cod. The change in these risk factors may have a significant impact on the level of risk and its acceptability:

- Barramundi cod sourced from aquaculture, without any restrictions, could be expected to present different risks than wild-caught fish. The risk factors are likely to be crowding, stress, absence of predators and other conditions that favour the multiplication of disease agents, survival of infected hosts and increased prevalence of disease agents.
- Similarly, the likelihood of exposure of fish in Australia's natural waters to a disease agent via an imported fish will be different if imported barramundi cod juveniles are used for aquaculture grow-out in open or semi-open systems, or as broodstock in hatcheries.

In November 2004, AQIS accepted advice from Biosecurity Australia and suspended the importation of live barramundi cod for the ornamental fish industry, pending completion of a biosecurity policy review. Biosecurity Australia will review the quarantine conditions to ensure that the risks are appropriately managed. For more information see the Biosecurity Australia web page.[1]

[1] www.daff.gov.au/animalbiosecurity

Country: Bangladesh Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. *Oncorhynchus masou* virus disease	***	***	***		
4. Spring viraemia of carp	***	***	***		
5. Viral haemorrhagic septicaemia	***	***	***		
6. Viral encephalopathy and retinopathy	***	***	***		
7. Infectious pancreatic necrosis	***	***	***		
8. Epizootic ulcerative syndrome (EUS)	+	+	+	II	1
9. Bacterial kidney disease	***	***	***		
10. Red seabream iridoviral disease	***	***	***		
11. Enteric septicaemia of catfish	***	***	***		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	***	***	***		
13. Grouper iridoviral disease	***	***	***		
14. Infection with koi herpesvirus	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Mikrocytos roughleyi*	***	***	***		
3. Infection with *Haplosporidium nelsoni*	***	***	***		
4. Infection with *Marteilia sydneyi*	***	***	***		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	***	***	***		
Non OIE-listed diseases relevant to the region					
6. 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. Spawner-isolated mortality virus disease	***	***	***		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
8. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	***	***	***		
2. Akoya oyster disease	***	***	***		
3. Abalone viral mortality	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.Mass mortality in silver carp, catla and silver barb	+	+	+	II	2
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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) Outbreak of EUS observed during November to December. (b) Indian major carps, exotic carps, catfish, cultured small indigenous species and and wild fish are affected. (c) Lesion, haemorrhage, fin erosion and mass mortality. (d) Disease confirmed by histology. (e) Mortality rate recorded was 10-50% (f) Data on size of infected area not available (g) liming, antibiotic and herbal treatments carried out as control methods.
2	Mass mortality observed in *Catla catla*, *Barbodes gonionotus* and *Hypopthalmicthys molitrix* in Greater Mymensingh region and Gazipur durng the reporting period. Disease outbreaks in large water bodies say, 10ha and above. External signs were reddish operculum, superficial lesion, ulcers, exopthamia, blindness sometimes in both the eyes, hemorrhages and infection in the fin bases. External parasites, and bacteria *Aeromonas* spp, *Enterobacter* spp. Have been identified from the diseased fish. Fish growers use antibiotics, riboflavin, C-Vitamin, potask, alum and lime.

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

Country: Hong Kong SAR, China Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	II	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. *Oncorhynchus masou* virus disease	0000	0000	0000	II	
4. Spring viraemia of carp	0000	0000	0000	III	
5. Viral haemorrhagic septicaemia	0000	0000	0000	III	
6. Viral encephalopathy and retinopathy	+	+?	+?	III	1
7. Infectious pancreatic necrosis	0000	0000	0000	III	
8. Epizootic ulcerative syndrome (EUS)	0000	0000	0000	II	
9. Bacterial kidney disease	0000	0000	0000	III	
10. Red seabream iridoviral disease	-	-	-	III	
11. Enteric septicaemia of catfish	0000	0000	0000		
Non OIE-listed diseases relevant to the region	0000	0000	0000		
12. Epitheliocystis	(2002)			II	
13. Grouper iridoviral disease	-	-	-	III	
14. Infection with koi herpesvirus	0000	0000	+	II	2
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	II	
2. Infection with *Mikrocytos roughleyi*	0000	0000	0000	II	
3. Infection with *Haplosporidium nelsoni*	0000	0000	0000	II	
4. Infection with *Marteilia sydneyi*	0000	0000	0000	II	
5. Infection with *Perkinsus olseni/atlanticus* [b/])	0000	0000	0000	II	
Non OIE-listed diseases relevant to the region					
6. 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	
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000	III	
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000	II	
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	II	
6. Spawner-isolated mortality virus disease	0000	0000	0000	II	
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000	II	
8. Necrotising hepatopancreatitis	0000	0000	0000	II	
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	0000	0000	0000	II	
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	0000	0000	0000	II	
2. Akoya oyster disease	0000	0000	0000	II	
3. Abalone viral mortality	0000	0000	0000	II	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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 disease case caused by Nervous Necrosis Virus was identified by virus isolation and/or PCR during the three month period. Histological lesions were confirmed by immunoperoxidase in affected fish. The species involved was a form of carp. Two additional cases involving giant grouper were positive by PCR but there was no evidence of disease
2	Koi Herpesvirus disease was detected for the first time in Hong Kong. A display pond open to the public contained about 150 large Koi carp. Mortalities of 2-4 fish per day continued until about half the fish had died. PCR tests were strongly positive using two distinct sets of primers followed by sequence analysis. The remaining fish were destroyed. The source of the virus was unknown as there had been no authorized addition of any new Koi for ten years

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

Country: India Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	Decmber		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *Oncorhynchus masou* virus disease	0000	0000	0000		
4. Spring viraemia of carp					
5. Viral haemorrhagic septicaemia	0000	0000	0000		
6. Viral encephalopathy and retinopathy					
7. Infectious pancreatic necrosis	0000	0000	0000		
8. Epizootic ulcerative syndrome (EUS)	-	-	-		
9. Bacterial kidney disease	0000	0000	0000		
10. Red seabream iridoviral disease	0000	0000	0000		
11. Enteric septicaemia of catfish					
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis					
13. Grouper iridoviral disease					
14. Infection with koi herpesvirus					
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Mikrocytos roughleyi*	0000	0000	0000		
3. Infection with *Haplosporidium nelsoni*	0000	0000	0000		
4. Infection with *Marteilia sydneyi*	0000	0000	0000		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
6. Infection with *Marteilioides chungmuensis*					
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	***	***	***		
2. White spot disease	+()	+()	+()	I	1
3. Yellowhead disease (YH virus, gill-associated virus)	+()	+()	+()	I	2
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)					
5. Infectious hypodermal and haematopoietic necrosis	***	***	***		
6. Spawner-isolated mortality virus disease	0000	0000	0000		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)					
8. Necrotising hepatopancreatitis					
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis					
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality					
2. Akoya oyster disease					
3. Abalone viral mortality					
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*
Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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	Reported only from limited areas off the Goa/Karnataka coast during December 2004, in Gujarat during November-December, 2004 and in Prakasam district of Andhra Pradesh
2	Reported only from Prakasam District of Andhra Pradesh

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

Country: Indonesia Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. *Oncorhynchus masou* virus disease	***	***	***		
4. Spring viraemia of carp	***	***	***		
5. Viral haemorrhagic septicaemia	***	***	***		
6. Viral encephalopathy and retinopathy	-	-	-		
7. Infectious pancreatic necrosis	0000	0000	0000		
8. Epizootic ulcerative syndrome (EUS)	-	-	-		
9. Bacterial kidney disease	0000	0000	0000		
10. Red seabream iridoviral disease	0000	0000	0000		
11. Enteric septicaemia of catfish	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	0000	0000	0000		
13. Grouper iridoviral disease	-	-	-		
14. Infection with koi herpesvirus	+()	+	+	III	1
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Mikrocytos roughleyi*	0000	0000	0000		
3. Infection with *Haplosporidium nelsoni*	0000	0000	0000		
4. Infection with *Marteilia sydneyi*	0000	0000	0000		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	+	-	-	III	
2. White spot disease	-	-	+	III	2
3. Yellowhead disease (YH virus, gill-associated virus)	***	***	***		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	***	***	***		
5. Infectious hypodermal and haematopoietic necrosis	+	***	***	III	3
6. Spawner-isolated mortality virus disease	***	***	***		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
8. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	***	***	***		
2. Akoya oyster disease	***	***	***		
3. Abalone viral mortality	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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) The outbreak of KHV at North Sumatera Province beginning at the end of October 2004, attact the cage culture of Common carp in Toba Lake. The occurance of the disease was preceded by tranfer of Common carp seed from West Sumatera, where as this area (West Sumatera) was infected by KHV since July 2004 until October; 2) Type of fish: common carp (*Cyprinus carpio*); 3) Reduce in appetite, swimming to the surface and aeration supply, necrosis of gill filaments, haemorrhagic on the surface of the body, skin lesion and necrosis; 4) Origin of sample/+/total : South Kalimantan (Cindealus-Common carp(1/4), Lihung-Common carp (3/5), Pasar Lama-Common carp (2/6), West Sumatera (Tanah datar-Common carp (2/2), Danau Maninjau-Common carp (9/9), South Jakarta (Ciganjur-Common carp (4/4), West Java (Bandung-Common carp(2/10), Cirata-Common carp(2/2), North Sumatra (Haranggaol-Common carp (8/8); 5) High mortality (60 – 70 %); 6) DGF team had been reported, the outbreak of KHV in North Sumatra especially at Lake Toba caused mass mortality of Common carp with the total economic losses about 3.400 ton as the aaproximately 40 billion rupiah. Marine and Fisheries Province Office has been reported in west Sumatra also had mass mortality of Common carp with economic losses aproximately 2.5 billion rupiah; 7) KHV has been spread to 7 district in North Sumatera i.e. Simalungun, Toba Samosir, Samosir, Karo, Dairi, Humbang Hasundutan and Nort Tapanuli; 8) In this cases, Ministry of Marine and Fisheries Affair made regulation to inhibit export Koi and Common carp from infected areas to other non infected area and other country which have no cases of KHV and decided Sumatera island to be a quarantine area for Common carp and Koi; 9) It's samples have been sent to some National Laboratories and have been diagnose by PCR method
2	Type of fish: *L. vannamei*, *P. monodon* Origin of sample/+/total : East Java – *L. vannamei* (5/7), South Sulawesi (Barru – *P. monodon* (1/2), Pangkep – *P. monodon* (2/2), Maros/Marana – *P. monodon* (1/3)
3	Type of fish: *P. monodon* Origin of sample/+/total : West Java (Indramyu) – P. monodon (4/5)

2. **New aquatic animal health regulations introduced within past six months (with effective date):** Decree of Ministry of Marine and Fisheries Affair No. PER.55/MEN/2004 decided that Sumatera island to be a quarantine area for Common carp and Koi.

Country: Iran Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	+?	-	-	III	1
3. *Oncorhynchus masou* virus disease	0000	0000	0000		
4. Spring viraemia of carp	+?	-	-	III	2
5. Viral haemorrhagic septicaemia	+?	-	-	III	3
6. Viral encephalopathy and retinopathy	0000	0000	0000		
7. Infectious pancreatic necrosis	+?	-	-	III	4
8. Epizootic ulcerative syndrome (EUS)	0000	0000	0000		
9. Bacterial kidney disease	0000	0000	0000		
10. Red seabream iridoviral disease	0000	0000	0000		
11. Enteric septicaemia of catfish	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	***	***	***		
13. Grouper iridoviral disease	***	***	***		
14. Infection with koi herpesvirus	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Mikrocytos roughleyi*	***	***	***		
3. Infection with *Haplosporidium nelsoni*	***	***	***		
4. Infection with *Marteilia sydneyi*	***	***	***		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	***	***	***		
Non OIE-listed diseases relevant to the region					
6. Infection with *Marteilioides chungmuensis*	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	-(2002)	-(2002)	-(2002)		5
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	-(2003)	-(2003)	-(2003)	III	6
6. Spawner-isolated mortality virus disease	***	***	***		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
8. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	***	***	***		
2. Akoya oyster disease	***	***	***		
3. Abalone viral mortality	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

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

1. Epidemiological comments:

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

Comment No.	
1	Infectious haematopoietic necrosis virus has been reported in 6 provinces of Iran in October 2004 but just there was serological evidence of the causative agent and was not seen clinical signs during this period.
2	There was serological evidence of the causative agent in 6 provinces (Esfahan, Fars, Ardabil, Mazandaran, East Azarbayejan, Ghazvin) but clinical signs of the disase was not seen during the period
3	There was serological evidence of the causative agent in 3 provinces (Markazi, Gillan, Kermanshah) but clinical signs of the disase was not seen during the period
4	There was serological evidence of the causative agent in 2 provinces (Mazandaran, West Azarbayejan) but clinical signs of the disase was not seen during the period
5	White spot disease has not been reported during this period but was known to have occurred in Khozestan province in 2002 that was finally eradicated by active targeted surveillance system in all the coastal province
6	IHHNV has been recognized in imported shrimp (*P.monodon*) in one hatchery in Boushehr province in 2003 and was eradicated

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

Country: Japan Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	Dece,ber		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	I	
2. Infectious haematopoietic necrosis	+	+	+	III	
3. *Oncorhynchus masou* virus disease	+	+	+	III	
4. Spring viraemia of carp	0000	0000	0000	I	
5. Viral haemorrhagic septicaemia	-	-	+	III	
6. Viral encephalopathy and retinopathy	-	+	-	III	
7. Infectious pancreatic necrosis	+	+	+	III	
8. Epizootic ulcerative syndrome (EUS)	-	-	-	I	
9. Bacterial kidney disease	-	-	+	III	
10. Red seabream iridoviral disease	+	+	+	III	
11. Enteric septicaemia of catfish	0000	0000	0000	I	
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	+	+	+	III	
13. Grouper iridoviral disease	0000	0000	0000	I	
14. Infection with koi herpesvirus	+	+	+	III	2
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000	I	
2. Infection with *Mikrocytos roughleyi*	0000	0000	0000	I	
3. Infection with *Haplosporidium nelsoni*				I	1
4. Infection with *Marteilia sydneyi*	0000	0000	0000	I	
5. Infection with *Perkinsus olseni/atlanticus* [b/])	0000	0000	0000	I	
Non OIE-listed diseases relevant to the region					
6. Infection with *Marteilioides chungmuensis*	-	-	-	I	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	I	
2. White spot disease	+	-	+	III	
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000	I	
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000	I	
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	I	
6. Spawner-isolated mortality virus disease	0000	0000	0000	I	
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000	I	
8. Necrotising hepatopancreatitis	0000	0000	0000	I	
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	0000	0000	0000	I	
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	0000	0000	0000	I	2
2. Akoya oyster disease	+	+	+	II	
3. Abalone viral mortality	0000	0000	0000	I	
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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	*Haplosporidium nelsoni* was detected at 2% positive in Pacific oyster (*Crassostrea gigas*) spats collected from the North-eastern part of Japan (see OIE Disease Information on the 5 October, 2001 on the OIE internet homepage). However, mortality or disease of Pacific oyster associated with *H.nelsoni* has not been reported at all. Therefore, the symbol is not described at the portion of Haplosporidiosis in this report form.
2	In the October-Decmber 2003 report the cases of koi herpesvirus were reported under “koi mass mortality”. However, as the new item “Infection with koi herpesvirus” has been added to the QAAD report form (in use effective from January-March 2004 reporting period), the sign + is filled in “infection with koi herpesvirus” (item 14). Cases of koi mass mortality other than “Infection with koi herpesvirus” has never been recognized in the country, the sign 0000 is filled in “koi mass mortality” (item 1) under “unkown diseases of a serious nature”.

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

Country: Malaysia Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *Oncorhynchus masou* virus disease	***	***	***		
4. Spring viraemia of carp	***	***	***	III	1
5. Viral haemorrhagic septicaemia	0000	0000	0000		
6. Viral encephalopathy and retinopathy	0000	0000	0000		
7. Infectious pancreatic necrosis	-	-	-		
8. Epizootic ulcerative syndrome (EUS)	-	-	-		
9. Bacterial kidney disease	0000	0000	0000		
10. Red seabream iridoviral disease	0000	0000	0000		
11. Enteric septicaemia of catfish	***	***	***		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	***	***	***		
13. Grouper iridoviral disease	-	-	-		
14. Infection with koi herpesvirus	0000	0000	0000	III	1
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Mikrocytos roughleyi*	0000	0000	0000		
3. Infection with *Haplosporidium nelsoni*	0000	0000	0000		
4. Infection with *Marteilia sydneyi*	0000	0000	0000		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	-	-	-		
2. White spot disease	+	-	+	III	2
3. Yellowhead disease (YH virus, gill-associated virus)	-	-	-		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	-	-	-		
5. Infectious hypodermal and haematopoietic necrosis	-	-	-		
6. Spawner-isolated mortality virus disease	0000	0000	0000		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	-	-	-		
8. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	-	-	-		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*
Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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	UPM has screened 370 samples in total for SVC and KHV from Jan – Dec 2004. All specimen were negative
2	132 samples were received from spawner submitted by farmers from Kuala Selangor. One sample was found positive in the month of October and 7 samples positive in the month of December 2005

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

Country: Myanmar Period October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *Oncorhynchus masou* virus disease	0000	0000	0000		
4. Spring viraemia of carp	0000	0000	0000		
5. Viral haemorrhagic septicaemia	0000	0000	0000		
6. Viral encephalopathy and retinopathy	0000	0000	0000		
7. Infectious pancreatic necrosis	0000	0000	0000		
8. Epizootic ulcerative syndrome (EUS)	-	-	-		
9. Bacterial kidney disease	0000	0000	0000		
10. Red seabream iridoviral disease	0000	0000	0000		
11. Enteric septicaemia of catfish	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis					
13. Grouper iridoviral disease					
14. Infection with koi herpesvirus					
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*					
2. Infection with *Mikrocytos roughleyi*					
3. Infection with *Haplosporidium nelsoni*					
4. Infection with *Marteilia sydneyi*					
5. Infection with *Perkinsus olseni/atlanticus* [b/])					
Non OIE-listed diseases relevant to the region					
6. Infection with *Marteilioides chungmuensis*					
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	-	-	-		
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	-	-	-		
6. Spawner-isolated mortality virus disease	0000	0000	0000		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
8. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis					
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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.)

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

Country: Nepal Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. *Oncorhynchus masou* virus disease	***	***	***		
4. Spring viraemia of carp	***	***	***		
5. Viral haemorrhagic septicaemia	***	***	***		
6. Viral encephalopathy and retinopathy	***	***	***		
7. Infectious pancreatic necrosis	***	***	***		
8. Epizootic ulcerative syndrome (EUS)	-	-	+	I	1,2
9. Bacterial kidney disease	***	***	***		
10. Red seabream iridoviral disease	***	***	***		
11. Enteric septicaemia of catfish	***	***	***		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	***	***	***		
13. Grouper iridoviral disease	***	***	***		
14. Infection with koi herpesvirus	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Mikrocytos roughleyi*	***	***	***		
3. Infection with *Haplosporidium nelsoni*	***	***	***		
4. Infection with *Marteilia sydneyi*	***	***	***		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	***	***	***		
Non OIE-listed diseases relevant to the region					
6. 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. Spawner-isolated mortality virus disease	***	***	***		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
8. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	***	***	***		
2. Akoya oyster disease	***	***	***		
3. Abalone viral mortality	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

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

1. Epidemiological comments:

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

Comment No.	
1	Epizootic ulcerative syndrome (EUS) was reported from fish ponds at Bara and Nawalparasi districts during December 2004 (passive surveillance). About 2 ha of fish ponds were reported to be affected with the syndrome; the EUS affected fish species reported were *Cirrhinus mrigala* (Naini) and a few wild indigenous fish. The fish loss due to EUS during this period was reported to be not significant
2	Unlike in previous years 2000-2003, the reported cases of EUS outbreak during October-December 2004 found to be comparatively low. In comparision to previous years, cold wave observed during winter months (October-December) in 204 lated for short duration and normal weather conditions remained throughout reporting period. Fish farmers viewed that normal weather conditions prevailed during winter months would be the possible reason towards less severity/outbreaks of EUS.

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

Country: Pakistan Period October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. *Oncorhynchus masou* virus disease	***	***	***		
4. Spring viraemia of carp	***	***	***		
5. Viral haemorrhagic septicaemia	***	***	***		
6. Viral encephalopathy and retinopathy	***	***	***		
7. Infectious pancreatic necrosis	***	***	***		
8. Epizootic ulcerative syndrome (EUS)	-	-	-		
9. Bacterial kidney disease	***	***	***		
10. Red seabream iridoviral disease	***	***	***		
11. Enteric septicaemia of catfish	***	***	***		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	***	***	***		
13. Grouper iridoviral disease	***	***	***		
14. Infection with koi herpesvirus	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Mikrocytos roughleyi*	***	***	***		
3. Infection with *Haplosporidium nelsoni*	***	***	***		
4. Infection with *Marteilia sydneyi*	***	***	***		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	***	***	***		
Non OIE-listed diseases relevant to the region					
6. 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. Spawner-isolated mortality virus disease	***	***	***		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
8. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	***	***	***		
2. Akoya oyster disease	***	***	***		
3. Abalone viral mortality	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1. Abdominal Dropsy	+	+	-	II	1
2. Lernaesis	+			I	2
3. Anoxia		+	+		3

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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	Five cases of Abdominal dropsy (Bacterial hemorrhagic septicaemia) were reported from private fish farms (total infected area 15 acres). Oxytetracycline was suggested for the treatment of diseased fish @ 60mg/kg fish body weight for 5-7 days
2	Three cases of Lernaeasis were reported from private fish farms (infected area 6 acres). Dipterex @ 0.1 ppm was suggested to be used in the infected ponds
3	Thirteen cases of Anoxia were reported from private fish farms (affected area 7 acres). Freshwater was suggested especially at morning time.

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

Country: Philippines Period October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *Oncorhynchus masou* virus disease	0000	0000	0000		
4. Spring viraemia of carp	0000	0000	0000		
5. Viral haemorrhagic septicaemia	0000	0000	0000		
6. Viral encephalopathy and retinopathy	+	+	-	III	1
7. Infectious pancreatic necrosis	0000	0000	0000		
8. Epizootic ulcerative syndrome (EUS)	-	-	-		
9. Bacterial kidney disease	0000	0000	0000		
10. Red seabream iridoviral disease	0000	0000	0000		
11. Enteric septicaemia of catfish	***	***	***		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	***	***	***		
13. Grouper iridoviral disease	***	***	***		
14. Infection with koi herpesvirus	-	+?	+?	III	2
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Mikrocytos roughleyi*	0000	0000	0000		
3. Infection with *Haplosporidium nelsoni*	0000	0000	0000		
4. Infection with *Marteilia sydneyi*	0000	0000	0000		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
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. Spawner-isolated mortality virus disease	***	***	***		4
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
8. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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	*Epinephelus sp*. (grouper) eggs, fry, *Lates calcarife*, (seabass) fry, day-13, 14, and siganid fry from Iloilo and *Chanos chanos* (milkfish) fry from Iloilo, Bohol and Cebu showed positive results for VER by PCR (Nested-Step). Examination conducted by SEAFDEC-AQD, Fish Health Lab.
2	Surveillance on KHV was conducted by BFAR. Koi samples were taken from different areas. Gill samples were collected and tested for KHV using PCR. Examinations conducted by BFAR-Central Office Fish Health Lab. (*Method*: PCR protocol by SEAFDEC-AQD, Fish Health Lab., *Primer pairs used*: Gray *et al*., 2002 and National Research Institute of Aquaculture, Japan). In October 2004, 19 samples were collected from Pet Shop in Metro Manila. All the samples showed negative results after 1st step PCR and Nested-step PCR. In November 2004, 60 samples of koi fingerlings and juvenile were taken from private farm in Laguna. Gill samples from 5-8 kois were pooled. All samples were negative for KHV after 1st-step PCR. However, three (3) out of 13 samples showed positive results after nested-step-PCR. All samples examined were apparently healthy and did not show any abnormal gross signs and manifestations. In December 2004, nine (9) fingerlings (5-8 cm in size and 2.5-7.5 gm in weight) from private farm in Laguna were taken. Farm was experiencing mortalities. Some samples examined showed pale gills and manifested abnormal swimming behavior (koi were at the bottom and lie on their side). Farmers called this condition sleepy koi. All samples were negative for KHV after 1st step PCR. However, 5 samples showed positive results after nested-step PCR. Thirty samples were also collected from a farm in Rizal. The farm has no reported experience of mortality. PCR test of the 15 koi showed negative results for 1st step PCR, however, one (1) sample showed positive results after nested-step PCR. Non-lethal sampling of gills from 10 (5 juveniles and 5 breeders) imported koi from Japan in November 2004, contained in the importers quarantine facility showed negative results after 1ststep PCR. However, seven samples showed positive results after nested-step PCR. The imported stocks were all apparently healthy (showed no external gross lesions and abnormal manifestations.

3	-Seven (7) batches/samples of *P. monodon* post larva, juvenile/grow-out stage from Iloilo, Cebu, Bohol, that showed positive results for White Spot Virus by PCR test (one step and Nested). -Thirty two (32) batches/samples of *P. monodon* post larva and juveniles from grow-out farms in Camarines Sur, Quezon Province, Pampanga, Davao, Batangas, Bulacan that showed negative results for WSV by PCR test. -Examinations conducted by BFAR- Central Fish Health Lab. and SEAFDEC-AQD, Fish Health Lab.
4	Information available was in 1998, when samples of *P. monodon* from selected grow-out farms sent to Australia in October 1988 (Dr. L. Owens, James Cook University). Examination of the samples by *in-situ* hybridization using Spawner Mortality Virus (SMV) probe produced positive results.

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

Country: Singapore Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *Oncorhynchus masou* virus disease	0000	0000	0000		
4. Spring viraemia of carp	0000	0000	0000		
5. Viral haemorrhagic septicaemia	0000	0000	0000		
6. Viral encephalopathy and retinopathy	-	-	-		
7. Infectious pancreatic necrosis	0000	0000	0000		
8. Epizootic ulcerative syndrome (EUS)	0000	0000	0000		
9. Bacterial kidney disease	0000	0000	0000		
10. Red seabream iridoviral disease	0000	0000	0000		
11. Enteric septicaemia of catfish	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	-	-	-		
13. Grouper iridoviral disease	-	-	-		
14. Infection with koi herpesvirus	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Mikrocytos roughleyi*	***	***	***		
3. Infection with *Haplosporidium nelsoni*	***	***	***		
4. Infection with *Marteilia sydneyi*	***	***	***		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	***	***	***		
Non OIE-listed diseases relevant to the region					
6. 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. Spawner-isolated mortality virus disease	***	***	***		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
8. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	***	***	***		
3. Abalone viral mortality	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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.)

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

Country: Sri Lanka Period: October-December2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *Oncorhynchus masou* virus disease	0000	0000	0000		
4. Spring viraemia of carp	0000	0000	0000		
5. Viral haemorrhagic septicaemia	0000	0000	0000		
6. Viral encephalopathy and retinopathy	0000	0000	0000		
7. Infectious pancreatic necrosis	0000	0000	0000		
8. Epizootic ulcerative syndrome (EUS)	?	?	?	I	1
9. Bacterial kidney disease	0000	0000	0000		
10. Red seabream iridoviral disease	0000	0000	0000		
11. Enteric septicaemia of catfish	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	0000	0000	0000		
13. Grouper iridoviral disease	0000	0000	0000		
14. Infection with koi herpesvirus	0000	0000	0000		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Mikrocytos roughleyi*	0000	0000	0000		
3. Infection with *Haplosporidium nelsoni*	0000	0000	0000		
4. Infection with *Marteilia sydneyi*	0000	0000	0000		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
6. Infection with *Marteilioides chungmuensis*	0000	0000	0000		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000		
2. White spot disease	+	+	+	III	2
3. Yellowhead disease (YH virus, gill-associated virus)	?	?	?	I	3
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. Spawner-isolated mortality virus disease	0000	0000	0000		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	0000	0000	0000		
8. Necrotising hepatopancreatitis	0000	0000	0000		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	0000	0000	0000		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	0000	0000	0000		
2. Akoya oyster disease	0000	0000	0000		
3. Abalone viral mortality	0000	0000	0000		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])

Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease

Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*

Crustaceans: Crayfish plague (*Aphanomyces astaci*)

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/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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	Clear visual signs were not reported
2	P.onodon samples from hatcheries and farms tested with CR amplification for WSSV showed positive results. Intensity of the occurrence was similar as previous quarter
3	No symptoms were observed

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

Country: Thailand Period: October-December 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	October	November	December		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	III	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. *Oncorhynchus masou* virus disease	0000	0000	0000	III	
4. Spring viraemia of carp	0000	0000	0000	III	
5. Viral haemorrhagic septicaemia	0000	0000	0000	III	
6. Viral encephalopathy and retinopathy	-	-	+	III	1
7. Infectious pancreatic necrosis	(1985)	(1985)	(1985)	III	
8. Epizootic ulcerative syndrome (EUS)	-	-	-	II	
9. Bacterial kidney disease	***	***	***		
10. Red seabream iridoviral disease	0000	0000	0000	III	
11. Enteric septicaemia of catfish	***	***	***		
Non OIE-listed diseases relevant to the region					
12. Epitheliocystis	0000	0000	0000	II	
13. Grouper iridoviral disease	0000	0000	0000	III	
14. Infection with koi herpesvirus	0000	0000	0000	III	2
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	***	***	***		
2. Infection with *Mikrocytos roughleyi*	***	***	***		
3. Infection with *Haplosporidium nelsoni*	***	***	***		
4. Infection with *Marteilia sydneyi*	***	***	***		
5. Infection with *Perkinsus olseni/atlanticus* [b/])	***	***	***		
Non OIE-listed diseases relevant to the region					
6. Infection with *Marteilioides chungmuensis*	***	***	***		
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	+	+	+	III	3
2. White spot disease	+	+	+	III	4
3. Yellowhead disease (YH virus, gill-associated virus)	-	-	-	III	5
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	?	?	?	II	
5. Infectious hypodermal and haematopoietic necrosis	+	+	+	III	6
6. Spawner-isolated mortality virus disease	***	***	***		
7. Tetrahedral baculovirosis (*Baculovirus penaei*)	***	***	***		
8. Necrotising hepatopancreatitis	***	***	***		
Non OIE-listed diseases relevant to the region					
9. Baculoviral midgut gland necrosis	***	***	***		
UNKNOWN DISEASES OF A SERIOUS NATURE					
1. Koi mass mortality	0000	0000	0000	I	
2. Akoya oyster disease	***	***	***		
3. Abalone viral mortality	***	***	***		
ANY OTHER DISEASES OF IMPORTANCE					
1.					
2.					

DISEASES PRESUMED EXOTIC TO THE REGION, BUT LISTED BY THE OIE[c/])
Finfish: Channel catfish virus disease; Infectious salmon anaemia; Piscirickettsiosis; Gyrodactylosis (*Gyrodactylus salaris*); White sturgeon iridoviral disease
Molluscs: Infection with *Bonamia ostreae*; *Marteilia refringens*; *Mikrocytos mackini*; *Perkinsus marinus*; *Candidatus Xenohaliotis californiensis*; *Hapolosporidium costale*
Crustaceans: Crayfish plague (*Aphanomyces astaci*)

a/ Please use the following symbols:

		+( )	Occurrence limited to certain zones
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b/ *Perkinsus olseni* and *P.atlanticus* are now considered conspecific. They may have different host species in different regions, and countries are encouraged to provide epidemiological comments where either of these agents occur.

c/ 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 VNN disease occurred in grouper (*Epinephelus coioides*) culture farm that located in Krabi province, Southern of Thailand. Groupers were cultured in 40 net-cages that placed in an old shrimp pond size 4 rai (1 rai = 1,600 m^2 surface area). About 15,000 fish averaging 2-4 cm in total length were stocked in the cages. 80% of the fish died because of the disease with typical signs of VNN. Virus was isolated in E-11 cell line and identified as VNN with RGNV genotype using RT-PCR at the Coastal Aquatic Animal Health Research Institute, Department of fisheries. All remaining fish advised to be removed from the pond and destroy then the pond was dis-infected and dried.
2	4,050 tails of ornamental fishes (including fancy carp, goldfish and guppy fish) had been sampled from 81 ornamental fish farms including fish exporting premises and fish production farms. No viruses could be isolated in KF-1 and EPC cells. PCR detection for KHV gene revealed negative. There is still no KHV disease or outbreak since August 2002.
3	A total of 589 shrimp PL samples had been tested at 4 PCR Laboratories of the DOF before stocking in culture ponds under the health management and disease control strategies. 45 specimens or 7.6% were recorded as RT-PCR positive or carrying TSV genes that advised to be destroyed.
4	A total of 1,781 shrimp PL samples had been tested at 11 PCR Laboratories of the DOF before stocking in culture ponds under the health management and disease control strategies. 16 specimens or 0.9% were recorded as PCR positive or carrying SEMBV genes that advised to be destroyed.
5	A total of 192 shrimp PL samples had been tested at 2 PCR Laboratories of the DOF before stocking in culture ponds under the health management and disease control strategies. All RT-PCR tests were negative.

6	A total of 972 shrimp PL samples had been tested at 4 PCR Laboratories of the DOF before stocking in culture ponds under the health management and disease control strategies. 511 specimens or 52.6% were 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 and grow-out ponds.

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

Grouper Iridoviral Disease - Disease Card[2]

by
Kazuhiro Nakajima[3]

Pathogen information

1. causative agent

1.1. pathogen type: virus

1.2. disease name and synonyms: grouper iridoviral disease

sleepy grouper disease

1.3. pathogen common name and synonyms: grouper iridovirus (GIV)

grouper iridovirus of Taiwan (TGIV)

Singapore grouper iridovirus (SGIV)

1.4. taxonomic affiliation

1.4.1. pathogen scientific name: grouper iridovirus (GIV)

1.4.2. phylum, class, family etc…: family: *Iridoviridae*, genus: *Ranavirus*

1.5. description of the pathogen: Causative agent is a enveloped double-stranded DNA (dsDNA) virus with a size of 160-200 nm in diameter. Viral replication occurs in the cytoplasm of the infected cell and virus grows well in cultured fish cell lines derived from grouper.

1.6. authority: F. H. C. Chua, M. L. Ng, K. L. Ng, J. J. Loo and J. Y. Wee (1994): Investigation of outbreaks of a novel disease, "Spleepy Grouper Disease", affecting the brown-spotted grouper, *Epinephelus tauvina* Forskal. *J. Fish Diseases*, **17**, 417-427.

1.7. pathogen environment: marine waters

2. modes of transmission

2.1. routes of transmission: Horizontal contact and water-borne transmission appear to be the principal mechanism for virus spread.

2.2. life cycle: replication in a cell

2.3. associated factors: unknown

2.4. additional comments: -

3. host range

3.1. host type: fish (grouper)

3.2. host scientific names: *Epinephelus tauvina, E. awoara*

3.3. other known or suspected hosts: suspiciously included other species of genus *Epinephelus*

3.4. affected life stage: fry, juvenile and adult

3.5. additional comments:

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[2] K. Nakajima (2003). Grouper iridoviral disease - disease card. Developed to support the NACA/FAO/OIE regional quarterly aquatic animal disease (QAAD) reporting system in the Asia-Pacific. NACA, Bangkok, Thailand. 4 pp.

[3] Headquarters, Fisheries Research Agency, 2-12-4, Fukuura, Kanazawa-ku, Yokohama 236-8648, Japan, Tel:+81-45-788-7512, Fax:+81-45-788-5090, e-mail: kazuhiro@fra.affrc.go.jp

4. geographic distribution

4.1. region: Southeast Asia

4.2. country: Singapore and Taiwan

4.3. additional comments: Thailand could be included as a distribution region, because iridovirus infection in cultured grouper, *E. malabaricus*, was observed in Thailand (Kasornchandra J. and Khongradit R. (1997): Isolation and preliminary characterization of a pathogenic iridovirus in nursing grouper, *Epinephelus malabaricus*. In "Diseases in Asian Aquaculture 3" (edited by Flegel T. W. and MacRae I. H.) pp.61-66.). A virus was successfully isolated in grouper fin and *Epithelioma papulosum cyprini* (EPC) cell lines. This virus grows well in these cells and produces cell-lytical CPE. These characteristics could be agreed with that of the Ranavirus.

Disease information

1. clinical signs and case description

1.1. host tissues and infected organs: Occurrence of systemic infection. Primary target organs are mostly spleen and kidney.

1.2. gross observations and macroscopic lesions: It causes extreme lethargy in the affected fish with few visible external signs except of darkened body color.

1.3 microscopic lesions and tissue abnormality: Enlarged spleen is consistently observed. Marked histological changes are seen in the spleen including necrosis of splenic pulp with generalized pyknosis, karyorrhexis and reduction of haemopoietic tissue elements.

1.4 OIE status: not listed

2. social and economic significance: The significance of this disease lies in its ability to cause losses in not only fry and juvenile of grouper but also marketable-sized grouper, a highly priced fish species in tropical mariculture.

3. zoonotic importance: none

4. diagnostic methods

4.1. screening methods

4.1.1.level I: none

4.1.2.level II: none

4.1.3.level III: none

4.2. presumptive methods

4.2.1.level I: Gross observations

High mortality of grouper occurs. The affected fish are extremely lethargic with mostly darkened body colour and have an enlarged spleen.

4.2.2.level II: Histopathology

Histopathological changes in the spleen as described in "Disease information 1.3." are observed.

4.2.3.level III: Virology

Virus isolation is carried out with grouper cell line (GF, GP, GK or GL), and a virus is isolated with cell-lytic CPE on the cells. Conventional virological study (ether, IUdR and acid sensitivity, etc.) are helpful for identification of enveloped DNA virus.

Transmission Electron Microscopy

Icosahedral morphology, 160-200 nm, dsDNA enveloped viral particles are present in the cytoplasm of infected spleen.

confirmatory methods

4.2.4. level I: none

4.2.5. level II: none

4.2.6. level III: Polymerase Chain Reaction (PCR)

Anti –sera against the virus for diagnosis are not yet available. Viral DNA sequence is useful to identify as GIV according to the sequence data mentioned in the paper of Murali *et al*. (2002) and Qin *et al*.(2003).

5. control methods: Specific control method has not been established. Usual sanitation and control procedure for viral infection are available.

Selected references

Chua, F. H. C., M. L. Ng, K. L. Ng, J. J. Loo and J. Y. Wee (1994): Investigation of outbreaks of a novel disease, "Sleepy Grouper Disease", affecting the brown-spotted grouper, *Epinephelus tauvina* Forskal. *Journal of Fish Diseases*, **17**, 417-427.

Kasornchandra, J. and R. Khongradit (1997): Isolation and preliminary characterization of a pathogenic iridovirus in nursing grouper, *Epinephelus malabaricus*. In "Diseases in Asian Aquaculture 3" (edited by Flegel T. W. and MacRae I. H.) pp.61-66.)

Chou, H.Y., C.C. Hsu and T.Y. Peng. (1998). Isolation and characterization of a pathogenic iridovirus from cultured grouper (Epinephelus sp.) in Taiwan, Fish Pathol. 33(4): 201-206

Lai, Y. -S., S. Murali, H.-Y. Ju, M.-F. Wu, I.-C. Guo, S.-C. Chen, K. Fang and C.-Y. Chang (2000): Two iridovirus-susceptible cell lines establishes from kidney and liver of grouper, *Epinephelus awoara* (Temminck & Schlegel), and partial characterization of grouper iridovirus. *Journal of Fish Diseases*, **23**, 379-388.

Murali, S., M.-F. Wu, I.-C. Guo, S.-C. Chen,H.-W. Yang and C.-Y. Chang (2002): Molecular characterization and pathogenicity of a grouper iridovirus (GIV) isolated from yellow grouper, *Epinephelus awoara* (Temminck & Schlegel). *Journal of Fish Diseases*, **25**, 91-100.

Qin, Q. W, T. J. Lam, Y. M. Sin, H. Shen, S. F. Chang, G. H. Ngoh and C. L. Chen (2001): Electron microscopic observations of a marine fish iridovirus isolated from brown-spotted grouper, *Epinephelus tauvina*. *Journal of Virological Methods*, **98**, 17-24.

Qin, Q. W., S. F. Chang, G. H. Ngoh-Lim, S. Gibson-Kueh, C. Shi and T. J. Lam (2003): Characterzation of a novel ranavirus isolated from grouper *Epinephelus tauvina*. *Diseases of Aquatic Organisms*, **53**, 1-9.

Recent Related Publications

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.

OIE Aquatic Animal Health Code, 7th Edition, 2004
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

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

The introduction of *Penaeus vannamei* and *P. stylirostris* into the Asia-Pacific Region.
Briggs M., S. Funge-Smith, R. Subasinghe and M. Phillips. 2004. Food and Agriculture Organization of the United Nations, Regional Office for Asia and the Pacific, Bangkok. RAP Publication 2004/10.99p.
This report has attempted to gather all of the currently available data on the extent of P. vannamei and P. stylirostris importation and culture in Asia, its potential problems and benefits, and in this way serve as a source document from which to investigate further the means by which control over this issue might be re-established. Recommendations aimed at controlling the importation, testing and culture of these species have been made for all levels and are included in this report.

Capacity and Awareness Building on Import Risk Analysis for Aquatic Animals.
J.R.Arthur and M.G. Bondad-Reantaso. (eds.). Proceedings of the workshop held 1-6 April 2002 in Bangkok, Thailand and 12-17 August 2002 in Mazatlan, Mexico. APEC FWG 01/2002, NACA, Bangkok. 203p. The proceedings contains 26 technical presentations, divided into 4 parts: (a) Background for risk analysis, (b) the risk analysis process, (c) Risk analysis and the World Trade Organization: Country experiences and (d) National strategies for aquatic animal health. Available for download from www.enaca.org

Manual on risk analysis for the safe movement of aquatic animals (FWG/01/2002)
Arthur, J.R., M.G.Bondad-Reantaso, F.C.Baldock, C.J.Rodgers and B.F.Edgerton. 2004. APEC/DoF/NACA/FAO, 59p. This manual provides a simplified overview of the risk analysis process to assist responsible individuals in developing countries to begin formulating national policies and approaches to conducting risk analyses. Available for download from www.enaca.org

Fourth Edition of Manual of Diagnostic Tests for Aquatic Animals, 2003
OIE has published the Fourth Edition of Manual of Diagnostic Tests for Aquatic Animals in August 2003. The aim of the manual is to provide a uniform approach to the diagnosis of the diseases listed in the OIE Aquatic Animal Health Code, so that the requirements for health certification in connection with trade in aquatic animals and aquatic

animal products, can be met. The fourth edition includes two new chapters, one on the requirements for surveillance for international recognition of freedom from infection, and one on validation and quality control of PCR methods used for diagnosis of infectious diseases. The Manual of Diagnostic Tests for Aquatic Animals is available on www.oie.int. The book may be ordered from pub.sales@oie.int

Biosecurity Australia 2003, Import Risk Analysis Handbook
This handbook sets out the process that Biosecurity Australia follows to undertake an import risk analysis. Electronic copies are available on www.affa.gov.au/BiosecurityAustralia

Shrimp Health Management Extension Manual. 2003
This extension manual summarizes farm level risk factors and practical management practices that can be used to reduce risks of shrimp disease outbreaks and improve farm production. The recommendations are based on a study conducted by NACA in Andhra Pradesh, India. The publication is of particular relevance to Andhra Pradesh, but many recommendations are still of use to farmers from other areas. Available for download at: http://www.enaca.org/Shrimp/manual/ShrimpHealthManual.pdf

Aquaplan – a five year review 2002
This publication provides a comprehensive review of progress towards the implementation of AQUAPLAN (Australia's National Strategic Plan for Aquatic Animal Health 1998-2003) programs and projects. It can be downloaded from www.affa.gov.au

Primary Aquatic Animal Health Care in Rural, Small-scale, Aquaculture Development, 2002
Arthur, J.R.; Phillips, M.J.; Subasinghe, R.P.; Reantaso, M.B.; MacRae, I.H. (eds.) FAO Fisheries Technical Paper.No.406 .The Technical Proceedings of the Asia Regional Scoping Workshop on "Primary Aquatic Animal Health Care in Rural, Small-scale, Aquaculture Development," held in Dhaka, Bangladesh on 27-30 September 1999. The Proceedings give useful information on socio-economic impacts, risks of disease incursions and health management strategies in rural, small-scale aquaculture and enhanced fisheries programs; and identifies potential interventions for their better health management and appropriate follow-up actions. A copy could be downloaded from http://www.enaca.org/Health/Publications.htm. Copies could also be obtained from FAO through writing to rohana.subasinghe@fao.org

Survey Toolbox for Aquatic Animal Diseases: A Practical Manual. 2002
This book written by Cameron, Angus is designed for people working in the aquatic animal diseases and production. The tools presented in the book will be valuable for anybody who needs to collect reliable information about aquatic diseases or production. The structure of the book allows it to be used on three different levels. Planners, Trainers and Field Operational Staff. The prevention, control, and eradication of aquatic animal diseases depend on a good understanding of the disease and its distribution. ACIAR Monograph MN94. Also available at: http://www.aciar.gov.au/web.nsf/doc/JFRN-5J46ZY

Diseases in Asian Aquaculture IV. 2002
Triennial scientific publication of the Fish Health Section, Asian Fisheries Society. The proceedings contains 43 peer reviewed original research and review papers dealing with the diseases and health management of aquatic animals, with emphasis on the Asia-Pacific Region, presented during the Fourth Symposium on Diseases in Asian Aquaculture (DAA IV), Cebu,, Philippines, November 1999. C.R. Lavilla-Torres and E. Lacierda-Cruz (eds). Further details at: http://afs-fhs.seafdec.org.ph/daa4pub.html

Risk Analysis in Aquatic Animal Health, 2001
A publication from the OIE , edited by C.J.Rodgers, gives a very good account on the need for risk analysis, risk analysis methodology, areas of application to aquatic animal health and many case histories. A very good reference book for people interested in knowing more about risk analysis or interested in performing risk analysis (www.oie.int)

List of National Coordinators*

Country	Name and Address
Australia	Dr. Eva -Maria Bernoth (NC) Manager, Aquatic Animal Health Unit , Office of the Chief Veterinary Officer Department of Agriculture, Fisheries and Forestry GPO Box 858, Canberra ACT 2601, Australia Fax: 61-2-6272 3150; Tel: 61-2-6272 4328 Email: Eva-Maria.Bernoth@affa.gov.au Mr. Alistair Herfort (FP) Aquatic Animal Health Unit , Office of the Chief Veterinary Officer Department of Agriculture, Fisheries and Forestry GPO Box 858, Canberra ACT 2601, Australia Fax: +61 2 6272 3150; tel: +61 2 6272 4009 E-mail: Alistair.Herfort@affa.gov.au
Bangladesh	Dr. M. A. Mazid (NC) Director General, Bangladesh Fisheries Research Institute (BFRI) Mymensingh 2201, Bangladesh Fax: 880-2-55259, Tel: 880-2-54874 E-mail: dgbfr@bdonline.com
Cambodia	Mr Hav Viseth (NC) Vice Chief, Aquaculture Bureau, Department of Fisheries 186 Norodom Blvd.,P.O. Box 835, Phnom Penh, Cambodia Fax: (855) 23 210 565; Tel: (855) 23 210 565 E-mail: smallfish@online.com.kh
China	Mr Zhuzewen (NC) Disease Prevention and Control Division National Fisheries Technique Extension Center (NFTEC) Ministry of Agriculture Mai Zi Dian Street No 18 Chanyang District, Beijing 100026, China Fax: 86-10-65074250; Tel: 86-010-64195073 E-mail:zewenzhu@sina.com Prof. Yang Ningsheng (FP) Director, Information Center, China Academy of Fisheries Science 150 Qingta Cun, South Yongding Road, Beijing 100039, China Fax: 86-010-68676685; Tel: 86-010-68673942 E-mail: nsyang@cafs.ac.cn
DPR Korea	Mr. Chong Yong Ho (NC) Director of Fish Farming Technical Department, Bureau of Freshwater Culture Sochangdong Central District, P.O.Box. 95 , Pyongyong, DPR Korea Fax- 850-2-814416; Tel- 3816001, 3816121

* The matrix provides a list of National Coordinators (NC) nominated by Governments and focal points (FP) for the *Asia-Pacific Quarterly Aquatic Animal Disease Reports*.

Hong Kong China	Dr Jim Chu Aberdeen Fisheries Office 100 A, Shek Pai Wan Road Aberdeen, Hong Kong Tel: 852-2873833; Fax: 852-28700324 E-Mail: jim_cw_chu@afcd.gov.hk
India	Mr.M.K.R.Nair (NC) Fisheries Development Commissioner Ministry of Agriculture, Krishi Bhawan, New Delhi 110001 Tel: 91 11 338 6370; Fax: 91 11 338 4030 E-mail: m.k.r.nair@mailcity.com
Indonesia	Dr Darnas Dana (NC) Director for Fish Health and Environment Ministry of Marine affairs and Fisheries Jl. Harsono RM No. 3, Ragunan Pasar Minggu Tromol Pos No.: 1794/JKS Jakarta – 12550 Indonesia Tel: 7804116-119; Fax: 62 21 78835853; 7803196 E-mail: dfhe@indosat.net.id Mr. Agus Sunarto (FP) Fish Health Research Laboratory Central Research Institute of Aquaculture Ministry of Marine Affairs and Fisheries Jakarta, Indonesia E-mail: agussunarto@hotmail.com
Iran	Dr. Reza Pourgholam (NC) National Coordinator Veterinary Organization Ministry of Jihad – E – Sazandegi Vali-ASR Ave, S.J.Asad Abadi St PO Box 14155 – 6349, Tehran, Iran Tel: 8857007-8857193; Fax: 8857252 Dr. A.E. Maghsodi Fard (FP) Manager Director of Aquatic Animal Diseases Department amaghsodifard@yahoo.com
Japan	Mr. Mahito Masuda (NC) Fisheries Health Protection Office Fish Ranching and Aquaculture Division Fishery Agency 1-2-1, Kasumigaseki Chiyoda-ku, Tokyo 100-8907, Japan Fax: 813-3591-1084; Tel: 813-350-28111(7365) E-mail: mahito_masuda@nm.maff.go.jp Dr. Hiroshi Kimiya (FP) Director, Office of Fish Health Protection

Lao PDR	Mr. Khampet Roger (NC) National Coordinator Fisheries and Livestock Department Ministry of Agriculture, Forestry and Fisheries P.O. Box 811, Vientianne, Lao PDR TeleFax: (856-21) 415674; Tel: (856-21) 416932 E-mail: eulaodlf@laotel.com Mr. Bounma Luang Amath (FP) Focal Point for Disease Reporting Fisheries and Livestock Department Ministry of Agriculture, Forestry and Fisheries P.O. Box 811, Vientianne, Lao PDR TeleFax: (856-21) 415674; Tel: (856-21) 416932 E-mail: eulaodlf@laotel.com
Malaysia	Mr. Ambigadevi Palanisamy (NC) National Coordinator Fisheries Research Institute, Department of Fisheries Penang, Malaysia E-mail: ambigadevip@yahoo.com Dr. Ong Bee Lee (FP) Head, Regional Veterinary Laboratory Services Department of Veterinary Services, 8th & 9th Floor, Wisma Chase Perdana Off Jln Semantan 50630, Kuala Lumpur, Malaysia Fax: (60-3) 254 0092/253 5804; Tel: (60-3) 254 0077 ext.173 E-mail: ong@jph.gov.my
Myanmar	Ms. Daw May Thanda Wint (NC) Assistant Staff Officer, Aquatic Animal Health Section Department of Fisheries Sinmin Road, Alone Township , Yangon, Myanmar Fax: (95-01) 228-253; Tel: (95-01) 283-304/705-547 E-mail: dof@mptmail.net.mm
Nepal	Mr. Gagan B.N. Pradhan (NC) Fisheries Development Officer Directorate of Fisheries Development Central Fisheries Building, Balaju, Kathmandu, Nepal Tel: + 350 662 E-mail: dofd@mail.com.np Mr. Shankar Prasad Dahal (FP) Assistant Fisheries Development Officer Directorate of Fisheries Development Central Fisheries Building, Balaju, Kathmandu, Nepal Tel: + 350 662 E-mail: dofd@mail.com.np
Pakistan	Dr. Muhammad Hayat (NC) Assistant Fisheries Development Commissioner Livestock Division, Ministry of Food, Agriculture and Livestock 10th Floor, Shaheed-e-Millat Secretariat (Livestock Wing) I Islamabad Fax: 92-51-922 1246; Tel: 92-51-920 8267 ahc@isb.paknet.com.pk

Philippines	Dr. Joselito R. Somga (NC) Aquaculturist II, Fish Health Section, BFAR 860 Arcadia Building, Quezon Avenue, Quezon City 1003 Fax: (632)3725055/4109987; Tel:(632) 3723878 loc206 or 4109988 to 89 E-mail: jsomga@bfar.da.gov.ph
Republic of Korea	Dr. Mi-Seon Park (NC) Director of Pathology Division National Fisheries Research and Development Institute 408-1 Sirang, Kijang, Pusan 619-900 Korea RO Tel: 82-51-720-2470; Fax: 82-51-720-2498 E-mail: parkms@haema.nfrda.re.kr
Singapore	Mr Hanif Loo Jang Jing (NC) Programme Executive (Aquaculture) Aquaculture Branch Food Supply & Technology Department Agri-Food & Veterinary Authority of Singapore 5 Maxwell Road, #01-00, Tower Block, MND Complex, Singapore 069110 Tel: 65 – 63257636; Fax: 65 – 63257677 Email: loo_jang_jing@ava.gov.sg Dr. Susan Kueh (FP) Agri-Food and Veterinary Authority of Singapore Central Veterinary Laboratory, 60 Sengkang East Way, Singapore 548596 Tel: (65) 3863572; Fax No. (65) 3862181 E-mail: Susan_KUEH@ava.gov.sg
Sri Lanka	Mr Mahinda Kulathilaka (FP) Assistant Manager National Aquatic Resources Research and Development Agency Ministry of Fisheries and Ocean Resources Mattakkuliya Colombo 15 Tel: 94 1 2521005; Fax: 94 1 2521932 E-mail: hamkulathilaka@yahoo.com
Thailand	Dr. Somkiat Kanchanakhan (NC) Fish Virologist, Aquatic Animal Health Research Institute (AAHRI) Department of Fisheries , Kasetsart University Campus Jatujak, Bangkok 10900, Thailand Fax: 662-561-3993; Tel: 662-579-4122, 6977 E-mail: somkiatkc@fisheries.go.th
Vietnam	Dr. Le Thanh Luu (NC) Vice-Director Research Institute for Aquaculture No. 1 (RIA No. 1) Dinh Bang, Tien Son, Bac Ninh, Vietnam Fax: 84-4-827-1368; Tel: 84-4-827-3070 E-mail: ria1@hn.vnn.vn Ms Phan Thi Van (FP) RIA No.1,Dinh Bang , Tien Son, Bac Ninh, Vietnam Fax: 84-4-827-1368; Tel : 84-4-827 - 3070 E-mail: ria1@hn.vnn.vn; phanvan@hn.vnn.vn

List of Diseases in the Asia-Pacific
Quarterly Aquatic Animal Disease Reports (Beginning 2004)

DISEASES PREVALENT IN THE REGION
FINFISH DISEASES
OIE-listed diseases
1. Epizootic haematopoietic necrosis
2. Infectious haematopoietic necrosis
3. *Oncorhynchus masou* virus disease
4. Spring viraemia of carp
5. Viral haemorrhagic septicaemia
6. Viral encephalopathy and retinopathy
7. Infectious pancreatic necrosis
8. Epizootic ulcerative syndrome (EUS)
9. Bacterial kidney disease
10. Red seabream iridoviral disease
11. Enteric septicaemia of catfish
Non OIE-listed diseases relevant to the region
12. Epitheliocystis
13. Grouper iridoviral disease
14. Infection with koi herpesvirus
MOLLUSC DISEASES
OIE-listed diseases
1. Infection with *Bonamia exitiosa*
2. Infection with *Mikrocytos roughleyi*
3. Infection with *Haplosporidium nelsoni*
4. Infection with *Marteilia sydneyi*
5. Infection with *Perkinsus olseni/atlanticus* [b/])
Non OIE-listed diseases relevant to the region
6. 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. Spawner-isolated mortality virus disease
7. Tetrahedral baculovirosis (*Baculovirus penaei*)
8. Necrotising hepatopancreatitis
Non OIE-listed diseases relevant to the region
9. Baculoviral midgut gland necrosis
UNKNOWN DISEASES OF A SERIOUS NATURE
1. Koi mass mortality
2. Akoya oyster disease
3. Abalone viral mortality

New Instructions on how to fill in the QUARTERLY AQUATIC ANIMAL DISEASE REPORT

(Revised during the Provisional Meeting of the AG[4], 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.

[4] 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:

OIE East 311, Shin Aoyama Building, 1-1-1 Minami Aoyama, Minato-ku,
Tokyo 107-0062, Japan
Tel: +81-3-5411-0520; Fax: +81-3-5411-0526
E-mail: oietokyo@tky.3web.ne.jp

NACA P. O. Box 1040, Kasetsart Post Office, Bangkok 10903, Thailand
Tel: 66-2-561-1728/9 (ext. 117); Fax: 66-2-561-1727
Dr. C.V. Mohan
E-mail: mohan@enaca.org

FAO Fishery Resources Division, Fisheries Department
FAO of the United Nations
Viale delle Terme di Caracalla, 00100 Rome
Tel. +39 06 570 56473; Fax + 39 06 570 530 20
E-mail: Rohana.Subasinghe@fao.org

Notes

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Website: **http://www.enaca.org**

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