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QUARTERLY AQUATIC ANIMAL DISEASE REPORT (Asia and Pacific Region)

July-September 2004

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Foreword

The third meeting of the Asia Regional Advisory Group (AG) on Aquatic Animal Health (AGM-3) was held at the NACA Headquarters, Bangkok, Thailand on 23-25 November 2004. The 10-member Advisory Group, constituted by NACA, in cooperation with OIE and FAO, advises Asian governments on aquatic animal health management. Members are experts from government and the private sector with representatives from FAO, the Aquatic Animal Health Standards Commission of the OIE and the OIE Regional Representation for Asia and the Pacific.

During the three-day meeting, the AG addressed key aquatic animal health issues in Asia, including regional disease reporting systems, emerging aquatic animal disease problems (emphasizing white tail disease in *Macrobrachium rosenbergii*, monodon slow growth syndrome, taura syndrome, infection with koi herpes virus and abalone die-offs), implementation of the Asia Regional Technical Guidelines on Health Management and the Responsible Movement of live aquatic animals, and ways to further strengthen regional and international cooperation in Asian aquatic animal health management.

The final report will be circulated to the region's fisheries and veterinary authorities and will be made available to the general public through the NACA website (www.enaca.org). Some of the key points discussed on emerging disease problems and regional reporting are summarized below as advance information.

Crustacean Diseases

The AG expressed concerns on the risks associated with live crustacean introductions and on the possibilities of pathogen exchange/movement between species (e.g. *P. monodon* to *P. vannamei* and vice versa). This is especially important owing to the poor information available on exotic pathogens and the impact of exotic pathogens on native crustacean species. Considering the possibilities of pathogen exchange/movement between species, AG strongly recommended that before importation, farmers/governments should make sure that none of the known pathogens are present and co-habitation tests be included during quarantine to ensure that unknown viral pathogens will not cause disease in important local crustacean species

Monodon Slow Growth Syndrome (MSGS) is associated with significant economic loss in Thailand alone and that it may already be present in other countries (e.g. Malaysia). A viral pathogen is possibly involved although known pathogens appear not to be involved. Although the information available so far is not conclusive, if MSGS is associated with an infectious agent, movement of *P. monodon* broodstock and post larvae (PL) might cause problems in other countries. Since no robust diagnostic test is available, MSGS will not be listed in the regional QAAD reporting list. The AG emphasized the need to increase awareness on MSGS in the region. National Coordinators (NCs) are advised to strengthen surveillance and collect information on the occurrence MSGS. An information sheet on MSGS has been developed and made available on NACA website and disseminated to NCs to increase awareness.

Taura syndrome virus (TSV) is a new exotic shrimp virus in Asia now reported from *Penaeus vannamei* in China PR, Indonesia, Thailand and Vietnam. TSV may be under-reported due to existing government restrictions on *P. vannamei* introductions and limited screening. The AG was concerned that the spread of TSV may be greater than indicated by QAAD reports and emphasized the need for improved reporting of TSV in the region indicating the species in which it occurs. The AG expressed serious concern about TSV in the region especially because the pathogen is spreading 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, P. japonicus*, *Macrobrachium rosenbergii*) can also be infected and, although no impact has been observed at the pond level, *P. monodon* infected by injection shows 10-20% mortality. NCs are advised to promote testing for TSV not only in *P. vannamei* but also in indigenous species of crustaceans.

White Body Disease in *P. monodon* is the biggest single disease problem in *P. monodon* hatcheries in Vietnam, but very little is known on its causes. NACA is in the process of developing an information sheet for this disease to raise awareness on the problem and collect further information on its occurrence and impact. NCs are urged to increase vigilance and report it under any other diseases of importance with epidemiological comments.

The AG expressed concerns regarding **infectious hypodermal and haematopoietic necrosis virus (IHHNV)**, which has become a problem for *P. vannamei* farming in the region. Considering the large scale movement and culture of *P. vannamei*, the AG stressed the need for increased vigilance on exotic pathogens like **baculovirus penaei (BP)** and **infectious myonecrosis virus (IMNV).** NCs in countries with *P. vannamei* culture should encourage testing for IHHNV and increase surveillance for other exotic pathogens.

White Tail Disease (WTD) in *Macrobrachium rosenbergii* is emerging as a serious problem in the region. *T*wo viruses, *Macrobrachium rosenbergii* nodavirus (MrNA) and extra small virus (XSV) have been found to be associated with the problem. The role of MrNV and XSV is not yet clear, although it appears that XSV (a satellite virus) dependent on MrNA for RNA polymerase activity may sometimes interact with a different RNA virus. Noting the economic impact and potential for the disease to spread, the AG recommended to include "White tail disease (MrNV and XSV)" under non-OIE listed crustacean diseases relevant to the region on the Regional QAAD List. NCs in countries with susceptible species are advised to promote surveillance for WTD.

FINFISH DISEASES

The AG expressed serious concern about the spread of **Koi Herpes Virus (KHV)** within Japan and Indonesia and its potential impact on common carp and koi carp industry in the region. Considering that both "koi mass mortality" and "infection with koi herpes virus" are already listed in the QAAD, the AG recommended removing "koi mass mortality" from the QAAD list. The AG considered that level I diagnosis for "infection with KHV" would include koi mass mortality. National Coordinators (NCs) in countries or regions with susceptible species are advised to increase vigilance for KHV. A comprehensive disease card on "infection with koi herpes virus" has been posted on the NACA website and disseminated widely in the region to assist in this matter (www.enaca.org/health).

Underestimated bacterial diseases like **streptococcosis** (*Streptococcus iniae* and *S. difficilis*), **nocardosis** (*Nocardia seriolae*) and **infection with *Tenacibaculum maritimum*** are believed to be associated with serious losses in finfish culture in the region and their significance for human health is often poorly known. Considering the impact, the AG recommended to consider inclusion of bacterial diseases in the QAAD during the next AGM-4 meeting and advised NCs to collect information on these diseases and report it under any other diseases of importance with epidemiological comments

MOLLUSC DISEASES

Little attention has so far been given to molluscan diseases in the region, although serious losses are known to be occurring. The AG emphasized the need for further information on mollusk disease and called for increased efforts to better understand this problem and improve reporting of molluscan diseases. **Abalone die offs** in Taiwan Province of China and China PR are causes of concern. The occurrence of abalone mortalities, while generally accepted as being widespread, is not being officially reported, although "abalone viral mortality" is listed in the QAAD list from 2004. Considering the movement of abalone brood stock and seed in the region, and the potential impact of spread of abalone viral mortality, the AG recommended further investigations on this problem and advised NCs to increase surveillance efforts.

Regional reporting system

The FAO/NACA/OIE regional quarterly aquatic animal disease (QAAD) reporting came into effect from the 3rd quarter of 1998. Till June 2004, a total of 23 reports have been published. Of the 21 participating countries, reports could be obtained from 17 (2003/3), 20 (2003/4), 19 (2004/1) and 17 (2004/2) countries for the respective quarters. The quality of reports and epidemiological comments provided by countries has improved significantly over the years. The AG appreciated the significant improvement of QAAD disease reporting in the region over the years, and emphasized the need to further strengthen such regional reporting for a number of reasons such as:

- its scope is not only to report to OIE;
- it is especially relevant to the region;
- fisheries authorities, and not only livestock authorities, are involved in the reporting;
- regional reporting has promoted national reporting in some countries ;
- it covers diseases of regional importance even if they are not listed by the OIE;
- it creates awareness of aquatic animal health problems and serves as an early warning system for other countries;
- it highlights the need for capacity building and for prioritization of resources, as well as supporting strategy development; and
- it has significantly contributed to the improvement of disease reporting in the region.

Changes to the QAAD reporting form

List of diseases in the QAAD reporting form are revised annually to conform with changes to the OIE *Aquatic Animal Health Code* and to reflect the aquatic animal disease situation in the region. The following revisions to the QAAD list were approved by the AG.

- Adding "White Tail Disease (MrNV & XSV)" of *Macrobrachium rosenbergii* to the list of diseases prevalent in the region under non OIE-listed crustacean diseases relevant to the region;
- Moving "Necrotizing hepatopancreatitis" from under OIE-listed crustacean diseases relevant to the region to non OIE-listed crustacean diseases relevant to the region; and
- Removing "koi mass mortality" from the QAAD list under unknown diseases of serious nature, in view of the listing of "infection with koi herpes virus" in 2003.

As in the past, joint letter from OIE/NACA will be circulated together with a copy of the new QAAD reporting form (to be used from the January-March 2005 reporting period)

Reports Received by the NACA Secretariat

Country: **Australia** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	-(2004)	-(2004)	-(2004)		1
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *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)	+	+	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	***	***	***		
14. Infection with koi herpesvirus	***	***	***		
MOLLUSC DISEASES					
OIE-listed diseases					
1. Infection with *Bonamia exitiosa*	0000	0000	0000		
2. Infection with *Mikrocytos roughleyi*	+	+	-(2004)	II	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)	-(2003)	-(2003)	+	II	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 was not reported this period despite passive surveillance, but is known to have previously occurred in Victoria (last reported 1st quarter 2004), New South Wales (last year reported 2003) and South Australia (last year reported 1992). Targeted surveillance and never reported in Tasmania. Passive surveillance and never reported in 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 New South Wales** for the first time in August and September 2004: 2. **In** (a) Australian bass (*Macquaria novemaculeata*) larvae and fry **(**passive surveillance**)**. First time VER has ever been reported in this species, and (b) Barramundi (*Lates calcarifer*) in biosecure recirculation system (targeted surveillance**);** 3. **Clinical signs-** acute and chronic mortality in Australian bass; no clinical signs in barramundi; 4. **Pathogen-** Nodavirus; 5. **Mortality rate-** (a) high, (b) nil; 6. **Economic loss-** ~ AU$200 000; 7. **Geographic extent-** (a) a State Government hatchery (b) a single tank on a commercial farm; 8. **Containment measures-** (a) Government facility destocked and decontaminated with investigations of source continuing; (b) Absence of clinical signs in fish maintained under close observation within biosecure facilities; 9. **Laboratory confirmation-** Diagnosis confirmed by PCR and electron microscopy; 10. **Publications-** Unpublished. 1. **Reported in South Australia** in August and September 2004 (last year reported 1998). Targeted surveillance: 2. **In** farmed barramundi (*Lates calcarifer*); 3. **Clinical signs-** only a few fish with mild clinical signs (pale colouration & CNS signs). Larger (70-100 mm TL) fish with mild brain and retinal vacuolation histologically, with no clinical signs; 4. **Pathogen-** un-described nodavirus ~85% homology with barramundi nodavirus; 5. **Mortality rate-** 1st batch approaching 100%, 2nd batch (older fish) 50%; 6. **Economic loss-** not reported; 7. **Geographic extent-** 2 batches in single commercial facility; 8. **Containment measures-** all animal remaining from 2 infected batches destroyed and facility de-stocked and disinfected, movement restrictions put in place and trace forward of movements prior to outbreak; 9. **Laboratory confirmation-** Diagnosed by clinical signs and histology and confirmed by nested RT-PCR; 10. **Publications-** Unpublished.

	Not reported this period despite active surveillance from Northern Territory (last year reported 2002) and Tasmania (last year reported 2000). Not reported this period despite passive surveillance from Queensland (last reported 2nd quarter 2004) and 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 Queensland** in July 2004 (last reported 2nd quarter 2004). Passive surveillance: 2. **In** (a) pikey bream (*Acanthopagrus berda*) and (b) juvenile barcoo grunter (*Scortum barcoo*); 3. **Clinical signs-** (a) brown skin ulcers in wild fish; (b) red skin lesions and ulcers with severe erosion around gill operculum; 4. **Pathogen-** *Aphanomyces invadans*; 5. **Mortality rate-** (a) not reported (b) 10%; 6. **Economic loss-** (a) not reported (b) 20 fish per day from 3 tanks; 7. **Geographic extent-** (a) observed in wild river fish (b) three re-circulation tanks on a single commercial farm; 8. **Containment measures-** nil; 9. **Laboratory confirmation-** Diagnosis confirmed by histology; 10. **Publications-** Unpublished. 1. **Reported in New South Wales** in August 2004 (last reported October 2003). Passive surveillance: 2. **In** bream (*Acanthopagrus australis*); 3. **Clinical signs-** typical of infection with *Aphanomyces invadans;* 4. **Pathogen-** *Aphanomyces invadans*; 5. **Mortality rate-** nil; 6. **Economic loss-** nil; 7. **Geographic extent-** single small creek; 8. **Containment measures-** nil; 9. **Laboratory confirmation-** Diagnosis confirmed by histology ; 10. **Publications-** Unpublished. 1. **Reported in Northern Territory** in August 2004 (last year reported 2001). Passive surveillance: 2. **In** nurseryfish (*Kurtus gulliveri*); 3. **Clinical signs-** typical of infection with *Aphanomyces invadans;* 4. **Pathogen-** *Aphanomyces invadans*; 5. **Mortality rate-** nil, single fish; 6. **Economic loss-** nil; 7. **Geographic extent-** from the wild in Adelaide River; 8. **Containment measures-** nil; 9. **Laboratory confirmation-** by histopathology ; 10. **Publications-** Unpublished. Not reported during this period despite passive surveillance, but is known to have occurred in 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*** 1. **Reported in New South Wales** in July and August 2004 (last year reported 2003). Passive surveillance: 2. **In** Sydney rock oysters (*Saccostrea glomerata*); 3. **Clinical signs-** mass mortality; 4. **Pathogen-** *Mikrocytos roughleyi*; 5. **Mortality rate-** high; 6. **Economic loss-** 70% mortality on commercial leases; 7. **Geographic extent-** south coast estuaries; 8. **Containment measures-** nil; 9. **Laboratory confirmation-** Diagnosed by histology; 10. **Publications-** Unpublished.

	Not reported during this period despite passive surveillance, but known to have occurred in 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 July, August and September 2004 (last reported 2nd quarter 2004). Targeted surveillance: 2. **In** wild (but not cultured) *Haliotis* spp. 3. **Clinical signs-** rendered unmarketable by presence of blisters and tissue scarring; 4. **Pathogen-** *Perkinsus olseni*; 5. **Mortality rate-** in wild unknown; 6. **Economic loss-** not reported from wild harvest; 7. **Geographic extent-** sporadic distribution in Spencer Gulf; 8. **Containment measures-** not applicable: endemic; 9. **Laboratory confirmation-** nil -field level 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** 11. **Reported in Northern Territory** in July, August and September 2004 (last reported 2nd quarter 2004). Active surveillance: 12. **In** *Penaeus monodon* (wild sourced broodstock in captivity); 13. **Clinical signs-** nil; 14. **Pathogen-** gill-associated virus; 15. **Mortality rate-** none reported; 16. **Economic loss-** not reported; 17. **Geographic extent-** Northern Territory marine waters; 18. **Containment measures-**not applicable; 19. **Laboratory confirmation-** diagnosed by PCR; 20. **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. Active surveillance and never reported in Western Australia. 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** 1. **Reported in Queensland** in September 2004 (last year reported 2003). Passive surveillance: 2. **In** farmed juvenile *Penaeus merguiensis* prawns; 3. **Clinical signs-** prawns swimming lethargically with opaque, white tails 2 days prior to death. Histopathology found skeletal muscle myopathy in abdomen and thorax- *Penaeus monodon*-type

	baculovirus was an incidental finding; 4. **Pathogen-** *Penaeus monodon*-type baculovirus; 5. **Mortality rate-** nil attributable to *Penaeus monodon*-type baculovirus; 6. **Economic loss-** nil attributable to *Penaeus monodon*-type baculovirus; 7. **Geographic extent-** in a single pond on a commercial farm; 8. **Containment measures-** nil; 9. **Laboratory confirmation-** Diagnosis confirmed by histology; 10. **Publications-** nil. Not reported this period despite passive surveillance, but known to have occurred previously in 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 was not reported this period despite passive surveillance, but is known to have previously occurred in Northern Territory (last year reported 2003) and in Queensland (last reported 1st quarter 2004). 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):

In September 2004, the Australian Commonwealth Government and States' and Territories' governments endorsed changes to Australia's National List of Reportable Diseases of Aquatic Animals (National List), in line with changes recommended by Australia's National Aquatic Animal Health Technical Working Group according to recent changes to the OIE/NACA List of Reportable Diseases.

Changes to Australia's National List include the addition of *Infection with koi herpesvirus* and G*rouper iridoviral disease.*

Australia will commence reporting on the status of diseases on the updated National List with data collected for the 4th quarter of 2004 (October to December).

Country: **Hong Kong China** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	II	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. *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	2.
11. Enteric septicaemia of catfish	0000	0000	0000		
Non OIE-listed diseases relevant to the region	0000	0000	0000		
12. Epitheliocystis	(2002)			II	3.
13. Grouper iridoviral disease	+	-	-	III	4.
14. Infection with koi herpesvirus	0000	0000	0000	II	
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	5.
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	Disease problems associated with Nervous Necrosis Virus infections appear to be slowly increasing in Hong Kong. Four cases of infection with a were identified by virus isolation and/or PCR during the three month period. Species involved were giant grouper and green grouper imported as small fingerlings from mainland China and Taiwan. Cases in fingerlings involved trickling mortalities that accumulated to about 10-30% after several weeks, and most also involved concomittent bacterial infections or gill parasites as well. One case involved newly-hatched fry, which were all lost. Histology found vacuolation in the brains and retinas, although in one case there were no lesions associated with the infection. Histological lesions were confirmed by immunoperoxidase in affected fish.
2	Seasonal cases of RSIV tend to occur in late Spring & Summer. There was one case of RSIV in July during this reporting period. Species involved were farmed green grouper. Significant disease with typical histological changes was found. Cumulative mortalities were 50%.
3	No further cases reported.
4	There was one disease outbreak in July green grouper fingerlings during this reporting period. Cumulative mortalities reached about 60% after 2-3 weeks, which was higher than for RSIV. Disease problems associated with Grouper Iridovirus appear to be increasing in Hong Kong.
5	No further cases reported this period, but virus is known to be present in occasional batches of otherwise healthy ornamental lobsters and crustaceans routinely tested for health certification for export. Most stock originate from breeding establishments in mainland China. No disease has ever been reported associated with positive results from PCR.

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

Country: **India** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *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)	***	***	***		
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 from very limited areas of Andhra Pradesh and Gujarat

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

Country: **Indonesia** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. *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	+()	+()	+()	III	
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
2. White spot disease	+	+	+	III	
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. 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	1. The disease still causes mortality in some areas for common carp and koi carp. The first outbreak in 2002 was associated with high mortality in East and West Jawa. 2. Koi carp and Common carp. 3. Decreased appetite, swimming near the surface and aeration supply, necrosis of gill filaments, haemorrhages on the body surface, skin lesion and necrosis. 4. Koi Herpes Virus. 5. High mortality (60 – 70 %). 6. Reports of economic loss not available, but the impact appears to be lower than in 2002 and 2003. 7. In 2004 KHV spread to other islands outside of Jawa. The affected regions include South Kalimantan, West Sumatera, Central Jawa, West Jawa and areas surrounding Jakarta. 8. Movement of Koi and Common carp from infected areas to other non infected areas within the country and export to other countries have been stopped. 9. Samples have been sent to National Laboratories and have been diagnosed as KHV positive by PCR method. 10. Unpublished

2	1. TSV is believed to have been introdced to the country through illegal introduction of *Penaeus vannamei* in 2002. Taura syndrome still causes high mortality in Jawa and is suspected in other islands. 2. *Penaeus vannamei, Penaeus stylirostris*. 3. The disease attacks shrimp in fry stage, usually 10 – 14 days after stocking. In acute case, the clinical signs are loss of appetite and red tail. In chronic case the characteristic clinical signs are melanization, poor growth and softness of the cuticle. 4. Taura Syndrome Virus. 5. High mortality (80 – 90%). 6. Estimates of economic loss not available. 7. Jawa island. 8. Presently import of SPF broodstock is allowed. 9. Samples have been sent to National Laboratories and diagnosed by PCR. 10. Unpublished

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

Country: **Iran** Period: April-June 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	April	May	June		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	-(2003)	-(2003)	-(2003)		1
3. *Oncorhynchus masou* virus disease	***	***	***		
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)	***	***	***		
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	0000	0000	0000		
2. White spot disease	-(2002)	-(2002)	-(2002)		2
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. 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	IHN has not been reported during this period.
2	White spot disease has not been reported during this period but was known to have occurred in Khoozestan province from July-September 2002 that was eventually eradicated by using active surveillance system.

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

Country: **Iran** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	-(2003)	-(2003)	-(2003)		1
3. *Oncorhynchus masou* virus disease	***	***	***		
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)	***	***	***		
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	0000	0000	0000		
2. White spot disease	-(2002)	-(2002)	-(2002)		2
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000		
6. 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 (IHN) has occurred in 4 provinces of Iran in 2003 but was not reported during this period.
2	White spot disease has not been reported during this period but was known to have occurred in Khoozestan province from July-September 2002; this was finally eradicated by active surveillance system.

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

Country: **Japan** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	I	
2. Infectious haematopoietic necrosis	+	+	+	III	
3. *Oncorhynchus masou* virus disease	-	+	-	III	
4. Spring viraemia of carp	0000	0000	0000	I	
5. Viral haemorrhagic septicaemia	-	-	-	I	
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*	-	-	+	III	
CRUSTACEAN DISEASES					
OIE-listed diseases					
1. Taura syndrome	0000	0000	0000	I	
2. White spot disease	+	+	+	III	
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000	I	
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000	I	
5. Infectious hypodermal and haematopoietic necrosis	0000	0000	0000	I	
6. 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: **Lao PDR** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. *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.					
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: **Malaysia** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *Oncorhynchus masou* virus disease	***	***	***		
4. Spring viraemia of carp	0000	0000	0000	III	1
5. Viral haemorrhagic septicaemia	0000	0000	0000		
6. Viral encephalopathy and retinopathy	-	-	-		
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	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	-	-	-		
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	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	A project had been started by UPM early this year using tissue culture (FHM) and tissue smear on cyprinid (mainly aquarium fishes) to screen for SVC. So far all the specimens examined had been negative.
2	UPM had also started a project to screen for koi herpes virus (KHV) using PCR. So far the results had been negative.
3	One case of WSSV was confirmed by PCR in UPM from spawners submitted by farmer from Kuala Selangor in July. Two cases of WSSV was confirmed by PCR in UPM from PL from Penang submitted by farmers from Kuala Selangor and three cases were confirmed in Kota Kinabalu by UPM in August. No positive detection in month of September.

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

Country: **Myanmar** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *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	+()	+()	+()	III	1
3. Yellowhead disease (YH virus, gill-associated virus)	0000	0000	0000		
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	0000	0000	0000		
5. Infectious hypodermal and haematopoietic necrosis	+()	+()	+()	III	2
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					
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	A total of 35 shrimp samples (PL, Juvenile) has been tested at PCR Laboratory of DOF. 26 samples or 74.2% were recorded as WSSV positive.
2	A total of 35 samples has been tested at PCR Laboratory of DOF. 13 samples or 37.1% were recorded as IHHNV positive.

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

Country: **Nepal** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. *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.					
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: **Pakistan** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	***	***	***		
2. Infectious haematopoietic necrosis	***	***	***		
3. *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		+	+	I	
2. Lernaesis			+	I	

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: **Philippines** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *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	0000	0000	+	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					
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	*Epinephelus sp*. (grouper) eggs, *Lates calcarifer* (seabass), from Iloilo and *Chanos chanos* (milkfish-day 14 and 20) from Bohol and Cebu showed positive results for VER by PCR (Nested-Step). Examination conducted by SEAFDEC-AQD. Fish Health Lab
2	Koi herpes virus (KHV) was detected from the confiscated koi carp (illegally imported koi carp) at the Ninoy Aquino International Airport Centennial Terminal 2 on September 14, 2004 (around 9:00 PM) from a passenger from China via Hongkong. The confiscated koi carp (40 pieces) approximately 14 cm.-18 cm in size in polyethylene plastic bag were brought to the BFAR-Central Office Fish Health Laboratory (around 10:30 PM). The confiscated koi were placed in aquaria (in isolation) at the BFAR-Fish Health Lab. on September 15, 2004 (around 10:00 AM). After five days (post confiscation) some fish showed abnormal swimming behavior and some were dead. The gills of the freshly dead and moribund koi were pale (discolored patches), with necrotic gill filaments. Gills from these koi were taken and fixed in 95% ethanol for PCR test for KHV. There were 29 koi died after 5-6 days (post confiscation) and all the remaining koi also died after two weeks. All the koi were disposed sanitarily, and water, aquaria and paraphernalia used were disinfected properly. On October 18, 2004 (during the BFAR-Fish Health Staff training on PCR for KHV at SEAFDEC-AQD), the gill samples fixed in 95% ethanol were brought at the Fish Health Laboratory of SEAFDEC-AQD, Tigbauan, Iloilo. All the gill samples taken from five individual koi showed positive results for KHV after one step and Nested PCR (Primer pairs used: Gray *et al*., Journal of Fish Diseases, 25, 171-178 and National Research Institute of Aquaculture, Japan). After proficiency and optimization of the PCR protocol for KHV at BFAR-Fish Health Lab., BFAR commenced in November 2004 its surveillance for KHV by PCR in common and koi carps in the country.

3	There were 12 (batches/samples) of *P. monodon* (eggs, post larva, juvenile/grow-out, broodstock, eggs/nauplii/mysis) from Iloilo, Cebu, Iloilo, Bohol, that showed positive results for White Spot Virus by PCR test (one step and Nested). There were 15 (batches/samples) of *P. monodon* post larva from Camarines Sur, Quezon Province, Davao, Batangas, Bataan and 5 batches/samples of *P. monodon* from grow-out ponds 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: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *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	-	-	+	III	1
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.)

Comment No.	
1	Whitespot syndrome virus (WSSV) was detected in a batch of 10-week-old tiger shrimp, *Penaeus monodon* originally imported as post larvae from Malaysia, by nested PCR using Fast Target™ WSSV detection kit and by histology. The affected shrimps showed great size variation, with bodyweight ranging from 0.54g to 6.67g and severe external body and gill fouling. Increasing daily mortality of 1-2 kg shrimp were reported at the time of sample submission. The batch was culled, and water & tank system disinfected accordingly.

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

Country: **Thailand** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000	III	
2. Infectious haematopoietic necrosis	0000	0000	0000	III	
3. *Oncorhynchus masou* virus disease	0000	0000	0000	III	
4. Spring viraemia of carp	0000	0000	0000	III	1
5. Viral haemorrhagic septicaemia	0000	0000	0000	III	
6. Viral encephalopathy and retinopathy	-	-	-	III	
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
+	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	300 kois had been sampled from 30 ornamental fish exporting premises. No viruses could be isolated in EPC cells.
2	300 kois had been sampled from 30 ornamental fish exporting premises. 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 1,050 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. 64 specimens or 6.1% were recorded as RT-PCR positive or carrying TSV genes that advised to be destroyed.
4	A total of 4,629 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. 23 specimens or 0.5% were recorded as PCR positive or carrying SEMBV genes that advised to be destroyed.
5	A total of 934 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. 18 specimens or 1.93% were recorded as RT-PCR positive or carrying YHV genes that advised to be destroyed.
6	A total of 1,851 shrimp PL samples had been tested at 3 PCR Laboratories of the DOF before stocking in culture ponds under the health management and disease control strategies. 423 specimens or 22.85% were recorded as PCR positive or carrying IHHNV genes that advised to be destroyed.

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

Rule of the Department of Fisheries for importation of live aquatic animals and their gametes designated for culture including koi fish (color carp or fancy carp) and common carp (*Cyprinus carpio*)

WTO Notification #G/SPS/N/THA/114 posted on 17th September 2004

Effective date; November, 1 2004

The Department of Fisheries (DOF) has established a strategy to control trans-boundary movement of aquatic animal diseases using quarantine measures on imports as follows:

- Pre-importation: facilities of Thai aquatic animal farms or companies have to achieve the quarantine standard of the DOF before receiving an import permit.
- Arrival of aquatic animals and their gametes at the port: the imported animals and their gametes must be accompanied with Certificate of Origin and Health. The fish will be subjected to quarantine at the certified quarantine areas of the importing farms or companies.
- Post-importation: aquatic animals will be quarantined for at least 15 days. Fish health inspectors will examine the animals for diseases listed in the OIE, koi herpesvirus and other contagious pathogens. If serious pathogens are found, the animals and their gametes will be destroyed without compensation.

Country: **Vietnam** Period: July-September 2004

Item	Disease status [a/]			Level of diagnosis	Epidemiological comment numbers
DISEASES PREVALENT IN THE REGION	Month				
FINFISH DISEASES	July	August	September		
OIE-listed diseases					
1. Epizootic haematopoietic necrosis	0000	0000	0000		
2. Infectious haematopoietic necrosis	0000	0000	0000		
3. *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	+	+	+	II and 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	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*	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	+	+	+	II and III	2
3. Yellowhead disease (YH virus, gill-associated virus)	+	+	+	II and III	3
4. Spherical baculovirosis (*Penaeus monodon*-type baculovirus)	+	+	+	II and III	3
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.)

Comment No.	
1	VNN was detected on grouper, cobia cultured in Cat ba, Quang Ninh, Vung tau however, the infected rates at those sites were low. The methods of detection were PCR and histopathology. The virus was also isolated using SSN1 and E11 cell lines at RIA1 and RIA2
2	The disease found in different provinces culturing *P.monodon* .PCR and Histopathology were used to detect WSD at RIA1,2,3 and some provincial labs. The disease caused different levels of loss for farmers depending location and level of investment.
3	Yellow head virus and Spherical baculovirus also detected by PCR and histopathological methods. During this period the disease occurred in some provinces only.

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

Official document 1070/CLTY-TY dated 16/6 does not allow any factories, sales agencies producing, selling malachite green and advises farmers on the negative effect of using malachite green as well as not using it.

Monodon slow growth syndrome (MSGS) – Information Sheet[1]

T.W. Flegel[2] and C.V. Mohan[3]

Background

During 2002, slow growth of farmed *P. monodon* was reported throughout shrimp growing areas of Thailand and figures indicated that annual production volume was down by approximately 36 %. The cause of the slow growth in Thai *P. monodon* has not been determined but recent trails indicate that a filtrable infectious agent is involved. Bacteria-free filtrates from slow growing *P. monodon* have been shown by Dr. Boonsirm Withyachumnarnkul to cause slow growth in experimental shrimp. In addition, extracts from the experimentally infected shrimp have a similar effect on new groups of experimentally injected *P. monodon* but no visible effect on experimentally injected *P. vannamei* (B. Withyachumnarnkul, unpublished).

A new type of yellow head virus (YHV) has been found in these shrimp, but preliminary tests (unpublished) suggest that it is not correlated with the problem. Since the slow growth problem occurred following the large scale importations of Pacific white shrimp (*Penaeus vannamei* also called *Litopenaeus vannamei*) from the Americas and from China/Taiwan, it is possible that the syndrome may be due to introduction of an exotic virus.

In late 2002, lymphoid organ vacuolisation virus (LOVV)-like viral particles were detected in several captured *P. monodon* broodstock from Thailand (DV Lightner, personal communication). Prior to the importation of *P. vannamei*, LOVV was only known in the Americas. During the interval of initial *P. vannamei* importation into Thailand, many Thai hatchery operators produced postlarvae (PL) for both *P. vannamei* and *P. monodon* in the same facility, sometimes holding broodstock in common tanks. This would have provided an ideal opportunity for pathogen transfer between the species. The practice is now discouraged, and most major Thai producers of *P. vannamei* PL do so in dedicated facilities.

Etiology

Our survey has shown that known pathogens are unlikely to be the cause of slow growth syndrome in *P. monodon* (Chayaburakul et al. 2004). Ultracentrifuge bands of tissue homogenates show 2 previously unreported viral-like particles and extracts of these bands give products by RT-PCR but not by PCR, suggesting involvement of RNA viruses

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[1] T.W. Flegel and C.V. Mohan (2004). Monodon slow growth syndrome (MSGS) – Information Sheet. Developed to support the regional quarterly aquatic animal disease (QAAD) reporting system in the Asia-Pacific. NACA, Bangkok, Thailand. 2pp

[2] Centex Shrimp, Chalermprakiat Building, Faculty of Science, Mahidol University, Rama 6 Rd, Bangkok 10400, Thailand, sctwf@mucc.mahidol.ac.th

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Working Case Definition

As the etiology is still uncertain, there is no clear case definition for this syndrome. The following features can be used as a working case definition for surveillance and epidemiological purposes to collate more information about this syndrome in the region. We call it monodon slow growth syndrome or MSGS. Thus, any putative agent could be called monodon slow growth agent or MSGA.

The suspected population must have a coefficient of variation (CV = Standard deviation/Mean) of more than 35% by weight and absence of hepatopancreatic parvovirus (HPV) or of other severe hepatopancreatic infections by known agents while also complying with any 3 out of the 5 following gross signs:

- Unusually dark color;
- Average daily weight gain of less than 0.1 g/day at 4 months;
- Unusually bright yellow markings;
- "Bamboo-shaped" abdominal segments; and
- Brittle antennae

Recommendations

As of now there is no tested management approach to tackle this problem. However, it is well known that viruses can move between species. Pathogens like-WSSV, YHV, IHHNV and MOV may jump from *P. monodon* to *P. vannamei* while pathogens like LOVV, TSV, BP and Reo-like virus may jump from *P. vannamei* to *P. monodon*. Implementing the following recommendations might help to reduce the impact of slow growth syndrome.

- In countries where *P. vannamei* has already been introduced, *P. vannamei* and *P. monodon* should be reared separately, particularly at the hatchery phase.
- National authorities should increase surveillance for slow growth syndrome in *P. monodon*.
- Countries considering introduction of *P. vannamei* or any other crustacean should follow the full ICES protocol with the addition of co-habitation tests employing important, endemic crustacean species. This will reduce the risk of importing exotic viral pathogens that may damage local aquaculture or fisheries.

Reference

Chayaburakul K, Nash G, Pratanpipat P, Sriurairatana S and Withyachunarnkul B (2004). Multiple pathogens found in growth retarded black tiger shrimp *Penaeus monodon* cultivated in Thailand. Diseases of Aquatic Organisms, 60: 89-96.

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)

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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:

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