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PANDA

Permanent network to strengthen expertise on infectious diseases of aquaculture species and scientific advice to EU policy

Coordination Action

Scientific support to policies

Work Package 2
Risk analysis of exotic, emerging and re-emerging disease hazards

Annex 6: Assessments

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Pathways of introduction, establishment, consequences and risk mitigation

6.1 Fish

6.1.1 Assessment of listed fish bacterial diseases

i) *Lactococcus garviae*

Pathways of introduction for *Lactococcus garviae* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably uncertain
Has the pathogen been spread by international trade in the products of the susceptible species?	yes	reasonably certain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in gametes of the host species?	no	very uncertain

Establishment of *Lactococcus garviae* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	one to three	very certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	days	reasonably uncertain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	not likely	reasonably uncertain
How rapidly is the pathogen liable to spread in the EU by natural means?	rapidly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	often	very certain

Consequences of *Lactococcus garviae* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	little or no importance	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	reasonably certain
How extensive is a region of the EU likely to suffer	extensive	reasonably

damage from the pathogen?		uncertain
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably uncertain
How important would other costs resulting from introduction be?	little or no importance	reasonably certain
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonably uncertain

Risk mitigation of *Lactococcus garviae* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	very likely	very certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonably certain
Is there an active surveillance system for the pathogen within the EU?	no	reasonably certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	very certain

ii) *Streptococcus agalactiae*

Pathways of introduction for *Streptococcus agalactiae* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	very uncertain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably certain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably certain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of *Streptococcus agalactiae* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	one to three	very certain
How extensive (density) are the host fish/shellfish in the EU?	rare	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	reasonably certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably certain
How rapidly is the pathogen liable to spread in the EU by natural means?	slowly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	often	reasonably certain

Consequences of *Streptococcus agalactiae* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	little or no importance	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	little or no importance	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	limited	reasonably certain
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably certain
How important would other costs resulting from introduction be?	little or no importance	reasonably certain
How likely are possible control/eradication measures to	not likely	reasonably certain

disrupt existing biological systems?		

Risk mitigation of *Streptococcus agalactiae* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	reasonably certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	reasonably certain

iii) *Streptococcus iniae*

Pathways of introduction for *Streptococcus iniae* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in the products of the susceptible species?	yes	reasonably uncertain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in gametes of the host species?	no	reasonably uncertain

Establishment of *Streptococcus iniae* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	one to three	very certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	reasonably certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably certain
How rapidly is the pathogen liable to spread in the EU by natural means?	moderate	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	often	reasonably certain

Consequences of *Streptococcus iniae* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	very certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	very extensive	reasonably certain
How likely is the presence of the pathogen in the EU to affect export markets?	very likely	reasonably certain
How important would other costs resulting from introduction be?	very important	reasonably certain
How likely are possible control/eradication measures to	very likely	reasonably certain

disrupt existing biological systems?		

Risk mitigation of *Streptococcus iniae* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	very certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	no	reasonably certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	reasonably certain

6.1.2 Assessment of listed fish parasitic diseases

i) *Ceratomyxa shasta*

Pathways of introduction for *Ceratomyxa shasta* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably uncertain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in gametes of the host species?	no	no data

Establishment of *Ceratomyxa shasta* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	one to three	reasonably certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	very uncertain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	likely	reasonably certain
How rapidly is the pathogen liable to spread in the EU by natural means?	moderate	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	never	reasonably uncertain

Consequences of *Ceratomyxa shasta* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	limited	no data
How likely is the presence of the pathogen in the EU to affect export markets?	likely	reasonably uncertain
How important would other costs resulting from	important	reasonably certain

introduction be?		
How likely are possible control/eradication measures to disrupt existing biological systems?	likely	reasonably certain

Risk mitigation of *Ceratomyxa shasta* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	reasonably certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonably uncertain
Is there an active surveillance system for the pathogen within the EU?	no	reasonably certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	reasonably certain

ii) ***Gyrodactylus salaris***

Pathways of introduction for *Gyrodactylus salaris* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably certain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Has the pathogen been spread by international trade in gametes of the host species?	no	reasonably certain

Establishment of *Gyrodactylus salaris* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	more than three	very certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	hours	very certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	very certain
How rapidly is the pathogen liable to spread in the EU by natural means?	rapidly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	very certain
How often has the pathogen successfully established new areas outside its original range?	often	very certain

Consequences of *Gyrodactylus salaris* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	very certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	very certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	very certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	very extensive	very certain
How likely is the presence of the pathogen in the EU to affect export markets?	very likely	reasonably certain
How important would other costs resulting from introduction be?	very important	very certain

How likely are possible control/eradication measures to disrupt existing biological systems?	very likely	very certain

Risk mitigation of *Gyrodactylus salaris* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	very certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	yes	very certain
In how many EU countries is there an active surveillance system?	<50% of countries	very certain
Is there a suitable diagnostic test available?	yes	very certain

iii) *Neoparamoeba pemaquidensis*

Pathways of introduction for *Neoparamoeba pemaquidensis* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably uncertain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably uncertain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in gametes of the host species?	no	reasonably uncertain

Establishment of *Neoparamoeba pemaquidensis* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	similar	reasonably uncertain
How many different host species are present in the EU?	one to three	reasonably uncertain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	reasonably uncertain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	very certain
How rapidly is the pathogen liable to spread in the EU by natural means?	rapidly	reasonably uncertain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably uncertain
How often has the pathogen successfully established new areas outside its original range?	never	reasonably uncertain

Consequences of *Neoparamoeba pemaquidensis* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	very certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	very certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	very certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	extensive	reasonably uncertain
How likely is the presence of the pathogen in the EU to affect export markets?	likely	reasonably uncertain
How important would other costs resulting from	important	reasonably

introduction be?		uncertain
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonably certain

Risk mitigation of *Neoparamoeba pemaquidensis* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	very likely	reasonably uncertain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	reasonably certain

iv) ***Parvicapsula pseudobranchicola***

Pathways of introduction for *Parvicapsula pseudobranchicola* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	no data
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Has the pathogen been spread by international trade in gametes of the host species?	no	reasonably certain

Establishment of *Parvicapsula pseudobranchicola* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	one	very certain
How extensive (density) are the host fish/shellfish in the EU?	fairly widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	days	no data
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably certain
How rapidly is the pathogen liable to spread in the EU by natural means?	slowly	reasonably uncertain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very slowly	reasonably uncertain
How often has the pathogen successfully established new areas outside its original range?	occasionally	no data

Consequences of *Parvicapsula pseudobranchicola* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	no	no data
How important are social and cultural harm caused by the pathogen within its existing geographic range?	little or no importance	no data
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	extensive	reasonably uncertain
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably certain
How important would other costs resulting from	important	reasonably certain

introduction be?		
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonably certain

Risk mitigation of *Parvicapsula pseudobranchicola* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	very certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	yes	reasonably uncertain

v) ***Trypanoplasma (Cryptobia) salmositica***

Pathways of introduction for *Trypanoplasma (Cryptobia) salmositica* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably uncertain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in gametes of the host species?	no	reasonably uncertain

Establishment of *Trypanoplasma (Cryptobia) salmositica* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	similar	reasonably certain
How many different host species are present in the EU?	more than three	very certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	hours	reasonably certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably uncertain
How rapidly is the pathogen liable to spread in the EU by natural means?	moderate	reasonably uncertain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	occasionally	reasonably certain

Consequences of *Trypanoplasma (Cryptobia) salmositica* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	very certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	very extensive	reasonably uncertain
How likely is the presence of the pathogen in the EU to affect export markets?	very likely	reasonably uncertain
How important would other costs resulting from	very important	reasonably

introduction be?		uncertain
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonably uncertain

Risk mitigation of *Trypanoplasma (Cryptobia) salmositica* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	reasonably uncertain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonably uncertain
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	very certain

6.1.3 Assessment of listed fish viral diseases

i) Epizootic haematopoietic necrosis

Pathways of introduction for Epizootic haematopoietic necrosis virus to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably uncertain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in gametes of the host species?	no	reasonably certain

Establishment of Epizootic haematopoietic necrosis virus in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	reasonably certain
How many different host species are present in the EU?	more than three	very certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	reasonably certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably certain
How rapidly is the pathogen liable to spread in the EU by natural means?	slowly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably uncertain
How often has the pathogen successfully established new areas outside its original range?	never	reasonably uncertain

Consequences of Epizootic haematopoietic necrosis virus introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	little or no importance	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	little or no importance	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	very extensive	reasonably certain
How likely is the presence of the pathogen in the EU to affect export markets?	very likely	reasonably certain

How important would other costs resulting from introduction be?	very important	reasonably certain
How likely are possible control/eradication measures to disrupt existing biological systems?	very likely	reasonably certain

Risk mitigation of Epizootic haematopoietic necrosis virus in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	reasonably uncertain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonably uncertain
Is there an active surveillance system for the pathogen within the EU?	no	reasonably certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	yes	very certain

ii) Infectious salmon anaemia

Pathways of introduction for infectious salmon anaemia virus to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably certain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in gametes of the host species?	no	reasonably certain

Establishment of infectious salmon anaemia virus in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	more than three	reasonably certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	reasonably certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	reasonably certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably certain
How rapidly is the pathogen liable to spread in the EU by natural means?	slowly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	very certain
How often has the pathogen successfully established new areas outside its original range?	often	reasonably certain

Consequences of infectious salmon anaemia virus introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	no	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	very certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	very certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	very extensive	reasonably certain
How likely is the presence of the pathogen in the EU to affect export markets?	very likely	reasonably certain
How important would other costs resulting from	very important	very certain

introduction be?		
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonably certain

Risk mitigation of infectious salmon anaemia virus in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	very likely	reasonable certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonable certain
Is there an active surveillance system for the pathogen within the EU?	yes	very certain
In how many EU countries is there an active surveillance system?	>50% of countries	very certain
Is there a suitable diagnostic test available?	yes	reasonably certain

iii) Koi herpes virus

Pathways of introduction for Koi herpes virus to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably certain
Has the pathogen been spread by international trade in the products of the susceptible species?	N/A	N/A
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of Koi herpes virus in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	reasonably certain
How many different host species are present in the EU?	one	reasonably certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	days	reasonably uncertain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably certain
How rapidly is the pathogen liable to spread in the EU by natural means?	rapidly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	very certain
How often has the pathogen successfully established new areas outside its original range?	often	very certain

Consequences of Koi herpes virus introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	reasonably certain to very certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	very extensive	reasonably certain
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably certain
How important would other costs resulting from introduction be?	very important	reasonably certain

How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonably certain

Risk mitigation of Koi herpes virus in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	reasonably certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonably certain
Is there an active surveillance system for the pathogen within the EU?	no	reasonably certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	yes	reasonably certain

iv) Red sea bream iridovirus

Pathways of introduction for Red sea bream iridovirus to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably uncertain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	very certain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of Red sea bream iridovirus in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	similar	reasonably uncertain
How many different host species are present in the EU?	more than three	reasonably certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	reasonably uncertain
Are the host species farmed and/or wild?	farmed and wild	reasonably certain
How long will the pathogen live in the environment without a host?	months	very uncertain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	very uncertain
How rapidly is the pathogen liable to spread in the EU by natural means?	rapidly	very uncertain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	very uncertain
How often has the pathogen successfully established new areas outside its original range?	often	reasonably uncertain

Consequences of Red sea bream iridovirus introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably uncertain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	very uncertain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	reasonably uncertain
How extensive is a region of the EU likely to suffer damage from the pathogen?	very extensive	reasonably certain
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably uncertain
How important would other costs resulting from	very important	reasonably certain

introduction be?		
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonable uncertain

Risk mitigation of Red sea bream iridovirus in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	reasonably certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonably uncertain
Is there an active surveillance system for the pathogen within the EU?	no	reasonably certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	very certain

6.1.4 Assessment of listed fish fungal diseases

i) *Aphanomyces invadans*

Pathways of introduction for *Aphanomyces invadans* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably certain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably certain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of *Aphanomyces invadans* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	not similar	reasonably certain
How many different host species are present in the EU?	more than three	very certain
How extensive (density) are the host fish/shellfish in the EU?	fairly widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	reasonably certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	very certain
How rapidly is the pathogen liable to spread in the EU by natural means?	rapidly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	often	very certain

Consequences of *Aphanomyces invadans* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	very certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	very certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	very certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	limited	reasonably certain
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably certain
How important would other costs resulting from	important	reasonably certain

introduction be?		
How likely are possible control/eradication measures to disrupt existing biological systems?	very likely	very certain

Risk mitigation of *Aphanomyces invadans* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	very certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	yes	very certain

6.2 Shellfish

6.2.1 Assessment of listed shellfish bacterial diseases

i) *Candidatus* Xenohaliotis californiensis

Pathways of introduction for *Candidatus* Xenohaliotis californiensis to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	no	no data
Has the pathogen been spread by international trade in the products of the susceptible species?	N/A	N/A
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably certain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of *Candidatus* Xenohaliotis californiensis in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	not similar	reasonably certain
How many different host species are present in the EU?	one to three	reasonably certain
How extensive (density) are the host fish/shellfish in the EU?	fairly widespread	reasonably certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	days	no data
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably certain
How rapidly is the pathogen liable to spread in the EU by natural means?	rapidly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	occasionally	very uncertain

Consequences of *Candidatus* Xenohaliotis californiensis introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	important	reasonably uncertain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	extensive	very uncertain
How likely is the presence of the pathogen in the EU	likely	very uncertain

to affect export markets?		
How important would other costs resulting from introduction be?	important	very uncertain
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonably uncertain

Risk mitigation of *Candidatus* Xenohaliotis californiensis in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	likely	reasonably uncertain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonably certain
Is there an active surveillance system for the pathogen within the EU?	no	reasonably certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	yes	very certain

ii) ***Nocardia Crassostrea***

Pathways of introduction for *Nocardia crassostrea* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	very uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in the products of the susceptible species?	N/A	N/A
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of *Nocardia crassostrea* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	similar	reasonably certain
How many different host species are present in the EU?	one to three	very certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	no data
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	likely	no data
How rapidly is the pathogen liable to spread in the EU by natural means?	slowly	no data
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	very uncertain
How often has the pathogen successfully established new areas outside its original range?	often	reasonably uncertain

Consequences of *Nocardia crassostrea* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	no	reasonably uncertain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	important	very uncertain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	important	very certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	very extensive	no data
How likely is the presence of the pathogen in the EU to affect export markets?	very likely	no data
How important would other costs resulting from introduction be?	very important	no data

How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	very certain

Risk mitigation of *Nocardia crassostrea* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	likely	very certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	yes	very certain

6.2.2 Assessment of listed shellfish parasitic diseases

i) ***Marteilioides spp. (M. chungmuensis)***

Pathways of introduction for *Marteilioides chungmuensis* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	very uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in the products of the susceptible species?	N/A	N/A
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of *Marteilioides chungmuensis* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	not similar	reasonably uncertain
How many different host species are present in the EU?	one to three	reasonably certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	no data
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	not likely	no data
How rapidly is the pathogen liable to spread in the EU by natural means?	slowly	no data
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	no data
How often has the pathogen successfully established new areas outside its original range?	occasionally	reasonably uncertain

Consequences of *Marteilioides chungmuensis* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	no	very uncertain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	important	reasonably uncertain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	extensive	no data
How likely is the presence of the pathogen in the EU to affect export markets?	likely	no data

How important would other costs resulting from introduction be?	very important	no data
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	very uncertain

Risk mitigation of *Marteilioides chungmuensis* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	likely	reasonably certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	no data
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	yes	very certain

ii) ***Perkinsus marinus***

Pathways of introduction for *Perkinsus marinus* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	very uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in the products of the susceptible species?	N/A	N/A
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of *Perkinsus marinus* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	similar	reasonably certain
How many different host species are present in the EU?	one	very certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	reasonably certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	likely	reasonably uncertain
How rapidly is the pathogen liable to spread in the EU by natural means?	moderate	very uncertain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	very uncertain
How often has the pathogen successfully established new areas outside its original range?	often	no data

Consequences of *Perkinsus marinus* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	very certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	very certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	very certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	extensive	no data
How likely is the presence of the pathogen in the EU to affect export markets?	very likely	no data
How important would other costs resulting from introduction be?	very important	very certain

How likely are possible control/eradication measures to disrupt existing biological systems?	likely	reasonably certain

Risk mitigation of *Perkinsus marinus* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	likely	reasonably uncertain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonably certain
Is there an active surveillance system for the pathogen within the EU?	yes	very certain
In how many EU countries is there an active surveillance system?	>50% of countries	reasonably uncertain
Is there a suitable diagnostic test available?	yes	reasonably uncertain

iii) *Perkinsus olseni/atlanticus*

Pathways of introduction for *Perkinsus olseni/atlanticus* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	very uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Has the pathogen been spread by international trade in the products of the susceptible species?	N/A	N/A
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	no data
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of *Perkinsus olseni/atlanticus* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	more than three	very certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	reasonably certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	not likely	reasonably uncertain
How rapidly is the pathogen liable to spread in the EU by natural means?	moderate	very uncertain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably uncertain
How often has the pathogen successfully established new areas outside its original range?	often	reasonably uncertain

Consequences of *Perkinsus olseni/atlanticus* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	little or no importance	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	extensive	reasonably uncertain
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably certain
How important would other costs resulting from	very important	very certain

introduction be?		
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonably certain

Risk mitigation of *Perkinsus olseni/atlanticus* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	likely	reasonably uncertain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonably certain
Is there an active surveillance system for the pathogen within the EU?	yes	reasonably uncertain
In how many EU countries is there an active surveillance system?	<50% of countries	reasonably uncertain
Is there a suitable diagnostic test available?	yes	reasonably certain

6.3 Crustacean

6.3.1 Assessment of listed crustacean bacterial diseases

i) *Coxiella cheraxi*

Pathways of introduction for *Coxiella cheraxi* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	no data
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	no data
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of *Coxiella cheraxi* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	similar	very certain
How many different host species are present in the EU?	one	no data
How extensive (density) are the host fish/shellfish in the EU?	rare	no data
Are the host species farmed and/or wild?	farmed only	no data
How long will the pathogen live in the environment without a host?	days	no data
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	no data
How rapidly is the pathogen liable to spread in the EU by natural means?	rapidly	no data
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	no data
How often has the pathogen successfully established new areas outside its original range?	occasionally	no data

Consequences of *Coxiella cheraxi* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	no	no data
How important are social and cultural harm caused by the pathogen within its existing geographic range?	little or no importance	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	limited	no data
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	very certain

How important would other costs resulting from introduction be?	little or no importance	no data
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	no data

Risk mitigation of *Coxiella cheraxi* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	no data
How likely is it that the pathogen could be eradicated from the EU?	fairly likely	no data
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	very certain

6.3.2 Assessment of listed crustacean viral diseases

i) IHHNV

Pathways of introduction for Infectious hypodermal and haematopoietic necrosis virus to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	no	reasonably uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably uncertain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	very certain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of Infectious hypodermal and haematopoietic necrosis virus in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	not similar	reasonably certain
How many different host species are present in the EU?	one to three	reasonably uncertain
How extensive (density) are the host fish/shellfish in the EU?	rare	reasonably certain
Are the host species farmed and/or wild?	farmed and wild	reasonably certain
How long will the pathogen live in the environment without a host?	days to months	very uncertain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	likely	very uncertain
How rapidly is the pathogen liable to spread in the EU by natural means?	slowly to moderate	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very slowly to moderate	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	often	reasonably certain

Consequences of Infectious hypodermal and haematopoietic necrosis virus introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	no	reasonably uncertain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	little or no importance	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	little or no importance to important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	limited	very certain

How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably certain
How important would other costs resulting from introduction be?	little or no importance to important	reasonably certain
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	very uncertain

Risk mitigation of Infectious hypodermal and haematopoietic necrosis virus in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	reasonably certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	uncertain
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	reasonably certain

ii) Taura syndrome

Pathways of introduction for Taura syndrome to the EU	Assessment	Uncertainty
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Has the pathogen been spread by international trade in the products of the susceptible species?	yes	very certain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably certain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of Taura syndrome in the EU	Assessment	Uncertainty
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	one	reasonably certain
How extensive (density) are the host fish/shellfish in the EU?	rare	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	reasonably uncertain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably certain
How rapidly is the pathogen liable to spread in the EU by natural means?	slowly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	often	very certain

Consequences of Taura syndrome introduction to the EU	Assessment	Uncertainty
Can the pathogen cause environmental harm where it occurs?	no	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	very certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	very certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	very extensive	very certain
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably certain
How important would other costs resulting from introduction be?	little or no importance	reasonably certain

How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonably uncertain

Risk mitigation of Taura syndrome in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	reasonably certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	reasonably certain
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	yes	very certain

iii) White spot

Pathways of introduction for Whitespot to the EU	Assessment	Uncertainty
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably uncertain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in the products of the susceptible species?	yes	reasonably certain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	very certain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of Whitespot in the EU	Assessment	Uncertainty
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	reasonably certain
How many different host species are present in the EU?	more than three	very certain
How extensive (density) are the host fish/shellfish in the EU?	fairly widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	reasonably certain
How long will the pathogen live in the environment without a host?	months	reasonably certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably uncertain
How rapidly is the pathogen liable to spread in the EU by natural means?	slowly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	very certain
How often has the pathogen successfully established new areas outside its original range?	often	reasonably certain

Consequences of Whitespot introduction to the EU	Assessment	Uncertainty
Can the pathogen cause environmental harm where it occurs?	yes	reasonably uncertain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	important	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	limited	very certain
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably uncertain
How important would other costs resulting from introduction be?	important	reasonably uncertain
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	reasonably uncertain

Risk mitigation of Whitespot in the EU	Assessment	Uncertainty
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	reasonably certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	no	reasonably certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	very certain

iv) Yellowhead

Pathways of introduction for Yellowhead to the EU	Assessment	Uncertainty
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	very certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably uncertain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	no	reasonably certain
Has the pathogen been spread by international trade in gametes of the host species?	N/A	N/A

Establishment of Yellowhead in the EU	Assessment	Uncertainty
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	reasonably certain
How many different host species are present in the EU?	one	reasonably certain
How extensive (density) are the host fish/shellfish in the EU?	rare	very certain
Are the host species farmed and/or wild?	farmed and wild	reasonably certain
How long will the pathogen live in the environment without a host?	months	reasonably uncertain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably uncertain
How rapidly is the pathogen liable to spread in the EU by natural means?	slowly	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	very rapidly	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	often	very certain

Consequences of Yellowhead introduction to the EU	Assessment	Uncertainty
Can the pathogen cause environmental harm where it occurs?	no	reasonably uncertain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	very important	reasonably uncertain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	limited	reasonably certain
How likely is the presence of the pathogen in the EU to affect export markets?	not likely	reasonably certain
How important would other costs resulting from introduction be?	little or no importance	reasonably uncertain
How likely are possible control/eradication measures	not likely	reasonably certain

to disrupt existing biological systems?		

Risk mitigation of Yellowhead in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	very certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	reasonably certain

6.4 Amphibian

6.4.1 Assessment of listed amphibian viral diseases

i) Ranavirus

Pathways of introduction for Ranavirus (*Iridoviridae*) to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	reasonably uncertain
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in gametes of the host species?	no	reasonably uncertain

Establishment of Ranavirus (*Iridoviridae*) in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	more than three	very certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	reasonably certain
How long will the pathogen live in the environment without a host?	months	very certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	reasonably uncertain
How rapidly is the pathogen liable to spread in the EU by natural means?	moderate	reasonably certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	moderate	reasonably certain
How often has the pathogen successfully established new areas outside its original range?	occasionally	reasonably certain

Consequences of Ranavirus (*Iridoviridae*) introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	reasonably certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	important	reasonably certain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	very important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	extensive	reasonably certain
How likely is the presence of the pathogen in the EU to affect export markets?	likely	reasonably certain

How important would other costs resulting from introduction be?	important	reasonably certain
How likely are possible control/eradication measures to disrupt existing biological systems?	likely	reasonably certain

Risk mitigation of Ranavirus (*Iridoviridae*) in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	likely	reasonably certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	no	reasonably uncertain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	yes	very certain

6.4.2 Assessment of listed amphibian fungal diseases

i) *Batrachochytrium dendrobatidis*

Pathways of introduction for *Batrachochytrium dendrobatidis* to the EU	**Assessment**	**Uncertainty**
Is there trade in live host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Is there trade in products of the host species (legal or illegal) into the EU from a known positive country?	yes	reasonably certain
Has the pathogen been spread by international trade in the products of the susceptible species?	no	no data
Is there trade in gametes of the host species (legal or illegal) into the EU from a known positive country?	yes	very uncertain
Has the pathogen been spread by international trade in gametes of the host species?	no	very uncertain

Establishment of *Batrachochytrium dendrobatidis* in the EU	**Assessment**	**Uncertainty**
How similar are the climatic conditions that would affect pathogen establishment in the EU compared to the area of current distribution?	very similar	very certain
How many different host species are present in the EU?	more than three	very certain
How extensive (density) are the host fish/shellfish in the EU?	very widespread	very certain
Are the host species farmed and/or wild?	farmed and wild	very certain
How long will the pathogen live in the environment without a host?	months	very certain
How likely is the reproductive strategy of the pathogen and duration of life cycle to aid establishment?	very likely	very certain
How rapidly is the pathogen liable to spread in the EU by natural means?	moderate	very certain
How rapidly is the pathogen liable to spread in the EU by human assistance?	moderate	very certain
How often has the pathogen successfully established new areas outside its original range?	often	very certain

Consequences of *Batrachochytrium dendrobatidis* introduction to the EU	**Assessment**	**Uncertainty**
Can the pathogen cause environmental harm where it occurs?	yes	very certain
How important are social and cultural harm caused by the pathogen within its existing geographic range?	important	reasonably uncertain
How important is economic loss to cultivated fish caused by the pathogen within its existing geographic range?	important	reasonably certain
How extensive is a region of the EU likely to suffer damage from the pathogen?	very extensive	very certain
How likely is the presence of the pathogen in the EU to affect export markets?	likely	reasonably certain

How important would other costs resulting from introduction be?	important	reasonably certain
How likely are possible control/eradication measures to disrupt existing biological systems?	not likely	very certain

Risk mitigation of *Batrachochytrium dendrobatidis* in the EU	**Assessment**	**Uncertainty**
How likely are existing control or husbandry measures (in cultured/farmed populations) to prevent establishment of the pathogen?	not likely	very certain
How likely is it that the pathogen could be eradicated from the EU?	not likely	very certain
Is there an active surveillance system for the pathogen within the EU?	no	very certain
In how many EU countries is there an active surveillance system?	N/A	N/A
Is there a suitable diagnostic test available?	no	very certain