# Appendix B: Risk species lists and recommended updates

## List B1 Current high-risk species list (specified species) – may only be imported head-off, de-gilled and eviscerated (gutted) when sourced from any country other than New Zealand

* All species of farmed finfish (fish that are grown and harvested in an aquaculture system)
* All species in the Family *Aulorhynchidae*
* All species in the Family *Embiotocidae*
* All species in the Family *Gadidae*
* All species in the Family *Gasterosteidae*
* All species in the Family *Lotidae*
* All species in the Family *Osmeridae*
* All species in the Family *Pleuronectidae*
* All species in the Family *Scophthalmidae*
* *Ambloplites* spp.
* *Ameiurus* spp.
* *Ammodytes* spp.
* *Anguilla* spp.
* *Anoplopoma* spp.
* *Apolodinotus* spp.
* *Argentina* spp.
* *Brevoortia* spp.
* *Clupea* spp. (includes herring and sprat; *Sprattus* spp. is synonymous with *Clupea* spp.; excludes *Sardinella* spp. and *Sardina*

spp.)

* *Dorosoma* spp.
* *Esox* spp.
* *Fundulus* spp.
* *Ictalurus* spp.
* *Lepomis* spp.
* *Merluccius* spp.
* *Micropterus* spp.
* *Morone* spp.
* *Moxostoma* spp.
* *Neogobius* spp.
* *Notropis* spp.
* *Paralichthys* spp.
* *Perca* spp.
* *Percopsis* spp.
* *Pimephales* spp.
* *Pomatoschistus* spp.
* *Pomoxis* spp.
* *Sander* spp.
* *Sardinops* spp.
* *Scomber* spp.
* *Sebastes* spp.
* *Stizostedion* spp.
* *Trichiurus* spp.

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1

## Table B1 Proposed update to the high-risk species list (specified species)

|  |  |  |  |
| --- | --- | --- | --- |
| **Genus** | **Action** | **Pathogen** | **Reference** |
| *Acanthopagrus* spp. | Add | VHSV | Isshiki, Nagano & Miyazaki (2003) |
| *Alosa* spp. | Add | VHSV | Ogut & Altuntas (2014) |
| *Anarhichas* spp. | Add | IPNV | Sommer et al. (2004) |
| *Belone* spp. | Add | VHSV | Ogut & Altuntas (2014) |
| *Centrolabrus* spp. | Add | VHSV | Munro et al. (2015) |
| *Ctenolabrus* spp. | Add | VHSV | Munro et al. (2015) |
| *Cyclopterus* spp. | Add | VHSV | Guðmundsdóttir et al. (2019) |
| *Dicentrarchus* spp. | Add | VHSV | OIE (2019) |
| *Engraulis* spp. | Add | VHSV | Ogut & Altuntas (2014) |
| *Epinephelus* spp. | Add | VHSV | Isshiki, Nagano & Miyazaki (2003) |
| *Eutrigla* spp. | Add | VHSV | Wallace et al. (2015) |
| *Labrus* spp. | Add | VHSV | Munro et al. (2015) |
| *Lampetra* spp. | Add | VHSV | OIE (2019) |
| *Mullus* spp. | Add | VHSV | Ogut & Altuntas (2014) |
| *Sardina* spp. | Add | VHSV | Ogut & Altuntas (2014) |
| *Scorpaena* spp. | Add | VHSV | Ogut & Altuntas (2014) |
| *Sparus* spp. | Add | VHSV | European Food Safety Authority (2008) |
| *Solea* spp. | Add | VHSV | European Food Safety Authority (2008) |
| *Symphodus* spp. | Add | VHSV | Munro et al. (2015) |
| *Trachurus* spp. | Add | VHSV | Ogut & Altuntas (2014) |

**IPNV** Infectious pancreatic necrosis virus. **VHSV** Viral haemorrhagic septicaemia virus.

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2

## List B2 Current medium-risk species list (approved specified species) – must be at least de-gilled and eviscerated (gutted) prior to importation when sourced from any country in, or island surrounding, Asia (including Japan)

* *Epinephelus* spp.
* *Evynnis* spp.
* *Lateolabrax* spp.
* *Lates calcarifer*
* *Lethrinus* spp.
* *Oplegnathus* spp.
* *Pagrus* spp.
* *Parapristipoma* spp.
* *Pseudocaranx* spp.
* *Seriola* spp.
* *Stephanolepi*s spp.
* *Takifugu* spp.
* *Thunnus* spp.

## Table B2 Proposed update to the medium-risk species list (approved specified species)

**Genus or species Action Pathogen Reference**

*Epinephelus* spp Move to high-risk list VHSV Isshiki, Nagano & Miyazaki (2003)

*Girella* spp. Add A causative agent of

RSIVD

*Larimichthys* spp. Add A causative agent of

RSIVD

*Lates calcarifer* Replace with genus A causative agent of

RSIVD

*Oxyeleotris* spp. Add A causative agent of

RSIVD

*Plectorhinchus* spp. Add A causative agent of

RSIVD

*Rachycentron* spp. Add A causative agent of

RSIVD

*Scomberomorus* spp. Add A causative agent of

RSIVD

*Trachinotus* spp. Add A causative agent of

RSIVD

OIE (2019)

OIE (2019) Listed as *Pseudosciaena crocea*

OIE (2019)

Ming-Hui et al. (2013)

OIE (2019)

OIE (2019)

OIE (2019)

OIE (2019)

**VHSV** Viral haemorrhagic septicaemia virus. **RSIVD** Red sea bream iridoviral disease.

Note: A causative agent of RSIVD is defined here as either red sea bream iridovirus (RSIV) or infectious spleen and kidney necrosis

virus (ISKNV) (OIE 2019).

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3

## List B3 Medium-risk species list (approved specified species) – must be eviscerated (gutted) prior to importation when sourced from all countries other than New Zealand

* *Acanthopagrus* spp. (former name *Mylio* spp.)
* *Dicentrarchus* spp.
* *Mugil* spp.
* *Solea* spp.
* *Sparus* spp.
* *Trachinotus* spp.
* *Thamnaconus* spp. (former name *Navodon* spp.)

**Table B3 Proposed updates to the medium-risk species list (approved specified species)**

**Genus Action Pathogen Reference**

*Acanthopagrus* spp. Move to high-risk species list VHSV Isshiki, Nagano & Miyazaki

(2003)

*Dicentrarchus* spp. Move to high-risk species list VHSV OIE (2019)

*Mugil* spp. Remove as the biosecurity risk *Photobacterium damselae* (Kahn et al. 1999)

only needs to be managed for subsp. *piscicida*baitfish

*Solea* spp. Move to high-risk species list VHSV European Food Safety

Authority (2008)

*Sparus* spp. Move to high-risk species list VHSV European Food Safety

Authority (2008)

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| --- | --- | --- |
| *Trachinotus* spp. Remove as the biosecurity risk  only needs to be managed for baitfish  *Thamnaconus* spp. Remove as the biosecurity risk  only needs to be managed for baitfish | *Photobacterium damselae* subsp. *piscicida*  *Photobacterium damselae* subsp. *piscicida* | (Kahn et al. 1999)  (Kahn et al. 1999) |

**VHSV** Viral haemorrhagic septicaemia virus.

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4

**Table B4 Current 'Specified bony fish species other than from the family Salmonidae and genus Plecoglossus' or 'baitfish list' – cannot be imported whole for use as baitfish**

**Source country Family or genus**

When sourced from all countries other than New Zealand All species of farmed bony fish (fish that are grown and harvested in an

aquaculture system)

All species in the Family *Aulorhynchidae*

All species in the Family *Embiotocidae*

All species in the Family *Gadidae*

All species in the Family *Gasterosteidae*

All species in the Family *Lotidae*

All species in the Family *Osmeridae*

All species in the Family *Pleuronectidae*

All species in the Family *Scophthalmidae*

*Acanthopagrus* spp. (former name *Mylio* spp.)

*Ambloplites* spp.

*Ameiurus* spp.

*Ammodytes* spp.

*Anguilla* spp.

*Anoplopoma* spp.

*Aplodinotus* spp.

*Argentina* spp.

*Brevoortia*s spp.

*Clupea* spp. Includes herring and sprat (*Sprattus* spp. is synonymous

with *Clupea* spp*.*) but does not include *Sardinella* spp. or *Sardina* spp.

*Dicentrarchus* spp.

*Dorosoma* spp.

*Esox* spp.

*Eutrigla* spp.

*Fundulus* spp.

*Ictalurus* spp.

*Lampetra* spp.

*Lepomis* spp.

*Merluccius* spp.

*Micropterus* spp.

*Morone* spp.

*Moxostoma* spp.

*Mugil* spp.

*Neogobius* spp.

*Notropis* spp.

*Paralichthys* spp.

*Perca* spp.

*Percopsis* spp.

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5

**Source country Family or genus**

*Pimephales* spp.

*Pomatoschistus* spp.

*Pomoxis* spp.

*Sander* spp. (former name *Stizostedion* spp.)

*Sardinops* spp.

*Scomber* spp.

*Sebastes* spp.

*Solea* spp.

*Sparus* spp.

*Thamnaconus* spp. (former name *Navodon* spp.)

*Trachinotus* spp.

*Trichiurus* spp.

|  |  |
| --- | --- |
| When sourced from all countries in, and islands surrounding, Asia | *Epinephelus* spp.  *Evynnis* spp.  *Lateolabrax* spp.  *Oplegnathus* spp.  *Pagrus* spp.  *Pseudocaranx* spp.  *Seriola* spp.  *Takifugu* spp.  *Thunnus* spp. |

When sourced from Japan *Parapristipoma* spp.

*Stephanolepis* spp.

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6

**Table B5.Proposed updates to the 'Specified bony fish species other than from the family Salmonidae and genus Plecoglossu*s*' or 'baitfish list'**

**Source country Genus Action Pathogen Reference**

|  |  |
| --- | --- |
| When sourced from all countries other than New Zealand | *Alosa* spp. Add VHSV Ogut & Altuntas (2014)  *Anarhichas* spp. Add IPNV Sommer et al. (2004)  *Belone* spp. Add VHSV Ogut & Altuntas (2014)  *Centrolabrus* spp. Add VHSV Munro et al. (2015)  *Ctenolabrus* spp. Add VHSV Munro et al. (2015)  *Cyclopterus* spp. Add VHSV Guðmundsdóttir et al. (2019)  *Engraulis* spp. Add VHSV Ogut & Altuntas (2014)  *Epinephelus* spp. Add VHSV Isshiki, Nagano & Miyazaki (2003)  *Labrus* spp. Add VHSV Munro et al. (2015) |

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| --- | --- |
| *Lates* spp. Add A causative agent of  RSIVD and *Photobacterium damselae* subsp. *piscicida* | OIE (2019); Pham et al. (2020) |

*Mullus* spp. Add VHSV Ogut & Altuntas (2014)

|  |  |
| --- | --- |
| *Pagellus* spp. Add *Photobacterium*  *damselae* subsp. *piscicida*  *Rachycentron* spp. Add A causative agent of  RSIVD and *Photobacterium damselae* subsp. *piscicida* | Yiagnisis & Athanasopoulou (2011)  OIE (2019); Pham et al. (2020) |

*Sardina* spp. Add VHSV Ogut & Altuntas (2014)

*Scorpaena* spp. Add VHSV Ogut & Altuntas (2014)

*Symphodus* spp. Add VHSV Munro et al. (2015)

*Trachurus* spp. Add VHSV Ogut & Altuntas (2014)

*Thunnus* spp. Add *Photobacterium* Mladineo, Miletić & Bočina

*damselae* subsp. (2006) *piscicida*

|  |  |  |
| --- | --- | --- |
| Sourced from all countries in, and islands surrounding Asia | *Epinephelus* spp. Remove and add to baitfish list 'When sourced from all countries other than New Zealand' | VHSV Isshiki, Nagano & Miyazaki (2003) |

|  |  |
| --- | --- |
| *Girella* spp. Add A causative agent of  RSIVD  *Larimichthys* spp. Add A causative agent of  RSIVD  *Lethrinus* spp. Add A causative agent of  RSIVD  *Oxyeleotris* spp. Add A causative agent of  RSIVD  *Parapristipoma* spp. Add A causative agent of  RSIVD  Department of Agriculture, Water and the Environment  7 | OIE (2019)  OIE (2019) Listed as  *Pseudosciaena crocea*  OIE (2019)  Ming-Hui et al. (2013)  Kahn et al. (1999) |

**Source country Genus Action Pathogen Reference**

|  |  |
| --- | --- |
| *Plectorhinchus* spp. Add A causative agent of  RSIVD  *Stephanolepis* spp. Add A causative agent of  RSIVD  *Scomberomorus* spp. Add A causative agent of  RSIVD | OIE (2019)  Kahn et al. (1999)  OIE (2019) |

|  |  |  |
| --- | --- | --- |
| *Thunnus* spp. Remove and add to baitfish list 'When sourced from all countries other than New Zealand' | *Photobacterium damselae* subsp*. piscicida* | Mladineo, Miletić & Bočina (2006) |

|  |  |  |
| --- | --- | --- |
| When sourced from Japan *Parapristipoma* spp. Remove and  add to baitfish list 'when sourced from all countries in, and islands surrounding Asia'  *Stephanolepis* spp. Remove and add to baitfish list 'when sourced from all countries in, and islands surrounding Asia' | A causative agent of RSIVD  A causative agent of RSIVD | Kahn et al. (1999)  Kahn et al. (1999) |

**VHSV** Viral haemorrhagic septicaemia virus. **IPNV** Infectious pancreatic necrosis virus. **RSIVD** Red sea bream iridoviral disease. Note: A causative agent of RSIVD is defined here as either red sea bream iridovirus (RSIV) or infectious spleen and kidney necrosis virus (ISKNV) (OIE 2019).

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8

**Table B6 Changes that have already been made**

**Genus or species Action Pathogen Reference**

|  |  |
| --- | --- |
| *Lethrinus* spp. Added to medium-risk species list 'when sourced from all countries in, and islands surrounding Asia'  *Lates calcarifer* Added to medium-risk species list 'when sourced from all countries in, and islands surrounding Asia' | A causative agent of RSIVD OIE (2019)  A causative agent of RSIVD OIE (2019) |

*Scomber* spp. Recognised as susceptible A causative agent of RSIVD OIE (2019)

**RSIVD** Red sea bream iridoviral disease.

Note: A causative agent of RSIVD is defined here as either red sea bream iridovirus (RSIV) or infectious spleen and kidney necrosis virus (ISKNV) (OIE 2019). Recognising *Scomber* spp. as susceptible to a causative agent of RSIVD impacts baitfish imports. This is withstanding the fact that the recognition doesn't require any change to a risk species list, as the genus already appears on the high-risk species list (specified species) and the baitfish list as susceptible to VHSV.

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9

**References**

European Food Safety Authority. 2008. Scientific Opinion of the Panel on AHAW on a request from the European Commission on aquatic animal species susceptible to diseases listed in the Council Directive 2006/88/EC. *The EFSA Journal*. 808, pp. 1–144.

Guðmundsdóttir, S., Vendramin, N., Cuenca, A., Kristmundsson, A., Iburg, M, T., Olesen, J, N. 2019. Outbreak of viral haemorrhagic septicaemia (VHS) in lumpfish (*Cyclopterus lumpus*) in Iceland caused by VHS virus genotype IV. Journal of Fish Diseases. (42), pp. 47–62.

Isshiki, T., Nagano, T. and Miyazaki, T. 2003. Susceptibility of Various Marine Fish Species to Viral haemorrhagic septicaemia Virus Isolated from Japanese Flounder. *Fish Pathology*, 38(3), pp.113115.

Kahn, S., Beers, P., Findlay, V., Peebles, I., Durham, P., Wilson, D. and Gerrity, S. (1999*). Import Risk Analysis on Non-viable Salmonids and Non-salmonid Marine finfish*. Australia: Commonwealth of Australia, pp.182– 276.

Ming-Hui, C., Shao-Wen, H., Chen-Hsuan, C., Po-Yang, C., Cheng-Chung, L., Tien-Huan, H., Chin-Fu, C, Shiun-Long, L., Ching-Yu, T., Chau-Loong, T. 2013. Red sea bream iridovirus infection in marble goby (Bleeker, *Oxyeleotris marmoratus*) in Taiwan. African Journal of Microbiology Research, 7 (12), pp. 1009-1014.

Mladineo, I., Miletić, I & Bočina, I. 2006. Photobacterium damselae subsp. piscicida Outbreak in Cage-Reared Atlantic Bluefin Tuna *Thunnus thynnus*. *Journal of Aquatic Animal Health*. 18 (1), pp. 51-54.

Munro E, S., McIntosh R, E., Weir S, J., Noguera, J, M., Sandilands, I., Matejusova, A, S., Mayes, R., Smith A. 2015. Mortality event in wrasse species (Labridae) associated with the presence of viral haemorrhagic septicaemia virus. *Journal of Fish Diseases*. 38 (4), pp.335-341.

Ogut H, Altuntas C. 2014. Survey of viral haemorrhagic septicaemia virus in wild fishes in the southeastern Black Sea. *Diseases of Aquatic Organisms*. 109(2), pp.99-106.

OIE 2019, *Manual of diagnostic tests for aquatic animals* 2019, World Organisation for Animal Health (OIE), Paris, available at <http://www.oie.int/en/standard-setting/aquatic-manual/access-online/> accessed 02 July 2020.

Pham, T, H., Cheng, T, C., Wang, P, C., Chen, S, C. 2020. Genotypic diversity, and molecular and pathogenic characterization of *Photobacterium damselae* subsp. *piscicida* isolated from different fish species in Taiwan. *Journal of Fish Diseases*. 43, pp. 757– 774.

Sommer A, I., Amundsen S, M., Rasmussen E, Mennen S. 2004. Susceptibility of spotted wolffish *Anarhichas minor* to experimental infection with nodavirus and infectious pancreatic necrosis virus. *Diseases of Aquatic Organisms*. 59(2), pp.101-108.

Wallace I, S., Donald K, Munro L, A., Pert C, C., Stagg, H. 2015. A survey of wild marine fish identifies a potential origin of an outbreak of viral haemorrhagic septicaemia in wrasse, Labridae, used as cleaner fish on marine Atlantic salmon, Salmo salar L., farms. *Journal of Fish Diseases*. 38 (6) pp.515-521.

Yiagnisis M., Athanasopoulou F. 2011. *Bacteria Isolated From Diseased Wild and Farmed Marine Fish in Greece*. In book: Recent Advances in Fish Farms

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10