

The Commonwealth Department of Agriculture, Fisheries and Forestry has invited comments on the “Import of live sturgeon for aquaculture – Draft biosecurity import risk analysis”.

The Western Australian Department of Primary Industries and Regional Development Animal Biosecurity and Welfare branch has considered the draft report and provides the following comments.

Section	Issue	Detailed comment	Recommendation
5.1 Sourcing from disease-free stocks	Sourcing from disease-free stocks is a recommended biosecurity measure for 12 of the 13 retained hazards for live sturgeon, including 7 viral pathogens. However, the report indicates experts have suggested that health certificates or other claims of freedom from viral agents for imported sturgeon are “of little value.”	<p>Sourcing from disease-free stocks is considered to reduce the likelihood of entry of numerous hazards in this assessment. For one parasitic hazard (<i>P. hydriforme</i>) and two viral hazards (AciHV1/AciHV2 and sNCLDV), sourcing from disease-free stocks is considered sufficient to achieve Australia’s ALOP when applied as the only mitigation measure.</p> <p>However, the BIRA’s section on sourcing from disease-free stocks concludes that “experts have suggested that based on their experience, it is unlikely that foreign origin sturgeon have been examined for the presence of viral agents, and that health certificates or other claims of freedom from viral agents for imported sturgeon are therefore of little value” and “it is unknown if there have been improvements since then in guaranteeing sturgeon as disease-free, therefore the risk of spreading disease agents with live animal movements remains.”</p> <p>This statement appears to suggest that sourcing sturgeon from disease-free stocks may still present a risk of spreading disease and the level of risk reduction provided by sourcing from disease free stocks should be clarified. This would be particularly valuable for AciHV1/AciHV2 and sNCLDV as the report also indicates sturgeon may act as subclinical carriers of both viral agents, and that AciHV2 may cause a latent carrier state.</p>	Please provide more information to illustrate the level of risk reduction that is provided by sourcing from disease free stocks, particularly for those viral pathogens where sourcing from disease free stock is considered the sole biosecurity measure required to achieve Australia’s ALOP.

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5.8 Post-arrival quarantine	It is unclear whether sexually mature sturgeon are considered within scope for this BIRA, and therefore whether risk mitigation measures recommended in the WOA code are relevant to retain as possible biosecurity measures.	<p>Section 5.8 indicates the option to hold live sturgeon in PAQ until they produce a first-generation population was considered, and it is acknowledged this is a biosecurity measure recommended in the WOA Code for the importation of aquatic animals for aquaculture from a country, zone or compartment not declared free from infection with the WOA-listed fish diseases. However, this measure was not considered practical or feasible for imported larvae or juvenile sturgeon, although the report indicates it may be considered on a case-by-case basis if sexually mature sturgeon were imported.</p> <p>The scope (1.3.2) indicates the BIRA considers “the biosecurity risks associated with the unrestricted importation of live sturgeon or their reproductive material from all countries for aquaculture purposes.” It is not clear whether importation of sexually mature sturgeon is considered out of scope.</p>	Consider providing clarification on the life stages that are considered in scope for importation of live sturgeon. If sexually mature sturgeon are considered within the scope of this BIRA, then the option to hold live sturgeon in PAQ until they produce a first-generation population should be considered and, if suitable, presented as a risk mitigation measure to align with WOA recommendations.
5.6 Batch testing for hazards 20.2.6 (6) and 20.3.5(8) Post-arrival quarantine (batch testing)	<p>One of the recommended biosecurity measures for live sturgeon and reproductive material is post-arrival batch testing for nine hazards.</p> <p>There is insufficient detail on the sampling design to determine whether the sampling provides confidence that Australia’s ALOP is being met.</p>	<p>The draft BIRA indicates the sampling regime should provide at least 95% confidence of detecting a hazard if it is present at a prevalence of 2%, but that these testing parameters would be determined for any hazard requiring batch testing.</p> <p>Post-arrival batch testing is listed as a required biosecurity measure for the majority of pathogens including typical <i>A. salmonicida</i>, CyHV-3, FV3, IHNV, SVCV, VHSV, <i>Y. ruckeri</i> (Hagerman strain), AcIHV1 and AcIHV2 (if not certified free), and sNCLDV (if not certified free).</p>	The report should include the design and sampling plan that is considered appropriate for post-arrival batch testing for each hazard, including design prevalence, relevant samples, and test sensitivity. This will provide additional information on the likelihood of false negatives, and therefore an indication of the level of risk reduction that may be

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		It is unclear whether 95% confidence and 2% prevalence will be the parameters used for all hazards. Additional detail on the sampling design, the samples required, the tests used (and their sensitivity and specificity), and any assumptions of the sampling model should be provided to demonstrate the sampling provides sufficient confidence of freedom.	expected from batch testing post-arrival.
6 Hazard identification	Table 8 Hazard identification and refinement Euglenozoa - including <i>Myxobolus</i> species	Where species are grouped together into one hazard and some species are present in Australia, their exclusion from the risk assessment should be based on an assessment that there are not species exotic to Australia that are known to be pathogenic. Euglenozoa removed from assessment based on some species being present in Australia. Specifically for <i>Myxobolus</i> species, has it been considered whether sturgeon could potentially carry species such as <i>M.cerebralis</i> , which is exotic to Australia and could affect Australia's salmonid industry?	Where species are grouped together into one hazard and some species are present in Australia, their exclusion from the risk analysis should be based on an assessment that there are not species exotic to Australia that are known to be pathogenic.
	Table 8 Hazard identification and refinement Monogeneans removed from assessment based on some species being present in Australia	As per previous comment re grouping species together. Where species are grouped together and there is a WOA-listed species included, this should be reflected in the table. Have <i>Gyrodactylus</i> species been considered? <i>Gyrodactylus salaris</i> may significantly impact salmonid production and a <i>Gyrodactylus</i> species has been reported from sturgeon (Leis et al. (2023) doi: 10.3390/parasitologia3020021	As above. Please indicate whether there are species within the broad group that are exotic to Australia and known to be pathogenic to sturgeon or could be pathogenic to other species.

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	Table 8 Hazard identification and refinement Cestodes removed from assessment based on some species being present in Australia	As per previous comment re grouping species together. Introduced cestodes may have significant effect on the health of native species – e.g. Asian fish tapeworm.	As above. Please indicate whether there are species within the group that are exotic to Australia and known to be pathogenic to sturgeon or could be pathogenic to other species.
	Table 8 Hazard identification and refinement Digeneans and other trematodes removed from assessment based on some species being present in Australia	As per previous comment re grouping species together. Trematodes may have wide host range and are potentially zoonotic. It is important to consider if there may be some species that are exotic to Australia and are considered pathogenic to sturgeon or other species including humans.	As above. Please indicate whether there are species within the group that are exotic to Australia and known to be pathogenic to sturgeon or could be pathogenic to other species.
	Table 8 Hazard identification and refinement Nematodes removed from assessment based on some species being present in Australia	Has it been considered whether there are species within this broad group that are not present in Australia, could affect native species or humans, and could be carried by sturgeon?	As above. Please indicate whether there are species within the group that are exotic to Australia and known to be pathogenic to sturgeon or could be pathogenic to other species.
20.1 General biosecurity measures	It is unclear when the general biosecurity measures are to be applied (e.g. pre-border only, pre- and post- border)	The draft BIRA considers the scenario where imported sturgeon are cultured with other fish species. It is not clear whether culture with other fish species or amphibians within Australia would be a permissible scenario, although the report indicates there has “been interest in polyculture of juvenile sturgeon with other fish species in RAS” in some countries. The report also indicates that polycultured fish and amphibians may act as a pathway for hazards to spread between farms or to susceptible species.	Consider clarifying when the general biosecurity measures outlined in 20.1 are to be applied.

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		It is unclear when the general biosecurity measures outlined in 20.1 are to be applied, and whether they are applicable following release from biosecurity control. For example, it should be made clear whether the measure indicating “sturgeon must only be cultured with sturgeon and not with other fish or amphibians” and “the premises must provide separation from other fish populations” should be applied following release from biosecurity control.	
20.2.6(11) and 20.3.5(12) post-arrival quarantine	Minimum standards for RAS	<p>The scope of the BIRA (1.3.2) is not restricted to secure RAS and considers that imported sturgeon are cultured in land-based semi-open aquaculture systems. This approach to the assessment is supported given it allows for consideration of the higher biosecurity (disease) risks associated with culture of sturgeon in systems where other species may be present.</p> <p>However, the only scenario supported by the EPBC Act is the importation of sturgeon to a secure RAS under permit, and 20.2.6(11) and 20.3.5.(12) indicate sturgeon must enter a “secure recirculating aquaculture system approved by the appropriate state or territory governments as per the import requirements under the <i>Environment Protection and Biodiversity Conservation Act 1999</i>” once released from biosecurity control.</p>	Minimum biosecurity standards for a RAS should be developed as part of the proposed risk mitigation measures (see comment below).
		The report indicates that discharge of water and waste from sturgeon farms into natural waters, release/escape of sturgeon into natural waters, and polyculture of sturgeon with susceptible species in the	That appropriate minimum biosecurity standards for a RAS should be developed as part of the proposed risk mitigation

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		<p>same aquaculture facility, are exposure pathways that may substantially contribute to the total risk (section 4.2.3). It is suggested the likelihood of these pathways occurring may be reduced via legislative controls and acknowledges the importance of legislative controls and their enforcement by state and territory authorities in the level of risk reduction achieved.</p> <p>Requirement 20.2.6(11) and 20.3.5(12) indicates the responsibility for approving “a secure recirculating aquaculture system” lies with individual state and territory governments. However, it is unclear in the draft BIRA whether the use of a secure RAS is considered a biosecurity measure required to reduce biosecurity (disease) risk associated with importation of live sturgeon for aquaculture. It is therefore unclear what minimum standards are required to be in place to provide the level of risk reduction expected from this requirement.</p> <p>The BIRA should consider the minimum appropriate biosecurity measures/quarantine standards for a RAS that would be required to be in place prior to an import permit being granted.</p>	<p>measures. This should include consideration of the RAS system itself (e.g. location indoors or outdoors, control/treatment of discharged water etc.) plus standards related to the use of the RAS systems (e.g. is polyculture a permitted scenario).</p>