



Australian Government

**Department of Agriculture,
Water and the Environment**

Assessment of the Victorian PQ Aquatics Syngnathids Wildlife Trade Operation

December 2021

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Disclaimer

This document is an assessment carried out by the Department of Agriculture, Water and the Environment of a commercial fishery against the Australian Government *Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition*. It forms part of the advice provided to the Minister for the Environment on the fishery in relation to decisions under Parts 13 and 13A of the *Environment Protection and Biodiversity Conservation Act 1999*. The views expressed do not necessarily reflect those of the Minister for the Environment or the Australian Government.

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EXECUTIVE SUMMARY

On 3 April 2021, Mr Pang Quong from PQ Aquatics submitted an application for the PQ Aquatics Syngnathids Wildlife Trade Operation (WTO) to the Department of Agriculture, Water and the Environment (the department) for assessment under the provisions of Part 13 (protected species) and Part 13A (wildlife trade) of the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), against the Australian Government 'Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition'. A public comment period was open from 24 June 2021 to 23 July 2021. No public comments were received.

Wildlife Trade Operation

The PQ Aquatics Syngnathids WTO operates in the Victorian coastal waters of Western Port Bay and primarily, Port Phillip Bay. The commercial operation is regulated through permit conditions prescribed by the Victorian Fisheries Authority (VFA). Such conditions impose restrictions on which syngnathid species can be harvested, the level of annual harvest, which state waters can be accessed, and which captive facilities can be used to hold wild broodstock. The operation is required to keep accurate records of wild harvesting and operational activities, and frequently report to the VFA.

Target stocks

The Syngnathidae family consists of bony fishes such as seahorses, pipefishes and seadragons. The operation uses hand collection while diving to selectively target three syngnathid species in the wild: the Weedy Seadragon (*Phyllopteryx taeniolatus*), Short-headed Seahorse (*Hippocampus breviceps*) and Pot-bellied Seahorse (*Hippocampus abdominalis*). The target species naturally occur across southern Australia, with the distribution of the Pot-bellied Seahorse extending to New Zealand. While a stock assessment has not been undertaken for PQ Aquatics, it is unlikely the targeted species are being overharvested due to the small scale of the operation.

Protected species and threatened ecological communities

The impact of this operation on protected marine species and ecological communities is considered negligible. PQ Aquatics implements a low-impact and highly selective fishing method (hand collection), and removes only a small number of syngnathids each year (four specimens of each species, including gravid specimens). Syngnathids are listed as protected marine species under Part 13 of the EPBC Act. Interactions with species protected under Commonwealth legislation is unlikely, given that specimens are not harvested from Commonwealth waters. Species belonging to the *Hippocampus* genus are listed under Appendix II of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). A 2015 Non-Detriment Finding (NDF) for the CITES-listed species determined that their wild harvest and retainment as broodstock was unlikely to be detrimental to the survival of either species in Victoria.

Ecosystem impacts

The Port Phillip Bay (Western Shoreline) and Bellarine Peninsula is a significant Ramsar site within the Port Phillip Bay region. The site supports and provides vital refuge to a variety of animal species, including rare migratory shorebirds. Harvesting activities are not undertaken within or near the Ramsar site, retaining the ecological value of the area. Given the selective fishing method and harvest restrictions in place, the physical environment and foodweb will remain largely unaffected by this operation.

Conclusion

On this basis, the department considers that declaration of Victorian PQ Aquatics Syngnathids as approved Wildlife Trade Operation for three years, until December 2024, is appropriate.

Unless a specified time frame is provided, each condition must be addressed within the period of the approved Wildlife Trade Operation.

SECTION 1: ASSESSMENT SUMMARY

Guidelines assessment	Meets	Partially meets	Does not meet	Details
Management regime	8 of 9	1 of 9	0 of 9	The management arrangements of PQ Aquatics are documented, publicly available and transparent. The operation occurs in accordance with Commercial Fishing and Protected Aquatic Biota Permits, issued by the responsible Victorian Government agency. Accurate reports of harvesting and operational activities are delivered to the Victorian Fisheries Authority and Department of Agriculture, Water and the Environment on a monthly and annual basis, respectively. Given the management arrangements in place and the low level of syngnathid harvest, the risk of adverse impacts on the target species and local marine ecosystems is considered negligible.
Principle 1 (target stocks)	7 of 9	1 of 9	0 of 9 1 N/A	A stock assessment has not been undertaken for this operation. Similarly, there are no reference points which trigger further management actions to recover target stocks. Despite limited population data for the target species in Victoria, there are reliable data collection systems in place for the harvesting activities conducted by PQ Aquatics. Target stocks of syngnathid species are not considered to be overharvested due to the low level of harvest, where a maximum of 4 specimens from 3 syngnathid species can be collected annually.
Principle 2 (bycatch and TEPS)	2 of 6	0 of 6	0 of 6 4 N/A	The operation applies a selective fishing method (hand collection while diving) in state waters to prevent contact with other marine species. There are no interactions with TEPS in Commonwealth waters. The impact on bycatch species and TEPS is considered negligible, given the small scale and highly selective harvesting regime implemented by the operation.
Principle 2 (ecosystem impacts)	7 of 11	1 of 11	0 of 11 5 N/A	Impacts on the local marine ecosystem are considered negligible based on the small scale and highly selective harvesting regime implemented by the operation. PQ Aquatics poses minimal threat to important ecosystem values due to restrictions on harvesting locations, target species, annual take and fishing method.
EPBC requirements	Meets	Partially meets	Does not meet	Details
Part 12			N/A	Given that PQ Aquatics does not operate in Commonwealth waters, requirements under Part 12 of the EPBC Act are not applicable to this operation.

Part 13			N/A	Given that PQ Aquatics does not operate in Commonwealth waters, requirements under Part 13 of the EPBC Act are not applicable to this operation.
Part 13A	8/8		7 N/A	The operation is consistent with the objects of Part 13A.
Part 16	All met			The management arrangements of this operation are implemented using a precautionary approach which prevents serious or irreversible environmental damage from occurring.

SECTION 2: SUMMARY OF ISSUES REQUIRING CONDITIONS

Issue	Condition
<p><u>General Management</u></p> <p>Export decisions relate to the management arrangements in force at the time of any decision(s) made under the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act).</p> <p>To ensure that the decision(s) remain valid and export approval continues uninterrupted, the Department of Agriculture, Water and the Environment (the department) needs to be advised of any changes that are made to the management regime. This will allow it to assess whether the new arrangements are equivalent to, or better, in terms of ecological sustainability, than those in place at the time of the original decision(s).</p> <p>This includes any operational and legislated amendments that may affect the sustainability of the target species or negatively impact on byproduct, bycatch, EPBC Act protected species or the ecosystem.</p>	<p>Condition 1:</p> <p>The export of syngnathid species is restricted to specimens held or taken under permits issued by the Victorian Fisheries Authority, and offspring of these specimens.</p> <p>Condition 2:</p> <p>The operation of the Victorian PQ Aquatics Syngnathids Wildlife Trade Operation must be carried out in accordance with the management arrangements specified by the Victorian Fisheries Authority.</p> <p>Condition 3:</p> <p>PQ Aquatics must inform the Department of Agriculture, Water and the Environment of any intended material changes to the operation's management arrangements that may affect the assessment against which <i>Environment Protection and Biodiversity Conservation Act 1999</i> decisions are made.</p> <p>Condition 4:</p> <p>PQ Aquatics must inform the Department of Agriculture, Water and the Environment of any intended changes to fisheries legislation that may affect the legislative instruments relevant to this approval.</p>
<p><u>Annual Reporting</u></p> <p>It is important that Victorian PQ Aquatics Syngnathids Wildlife Trade Operation presents annual reports so the department can monitor the performance of the fishery, and the applicant's progress in implementing the conditions and recommendations described in this report; and other managerial commitments to be monitored and assessed throughout the life of the export approval. Annual reports should follow Appendix B to the <i>Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition</i> and include a description of the fishery, management arrangements in place, research and monitoring outcomes, recent catch data for all sectors of the fishery, status of target stock, interactions with species protected under the EPBC Act, impacts of the fishery</p>	<p>Condition 5:</p> <p>The Victorian PQ Aquatics Syngnathids Wildlife Trade Operation must present annual reports to the Department of Agriculture, Water and the Environment by 30 November, as per Appendix B of the <i>Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition</i>. Annual reports should include:</p> <ul style="list-style-type: none"> (i) Total harvest, including the species, location, quantities, size, reproductive state and sex of individuals collected. (ii) Results of spawning, mating and rearing trials and the number of mortalities that have occurred.

Issue	Condition
<p>on the ecosystem in which it operates and progress in implementing the department's conditions and recommendations described in the previous assessment of the fishery. Electronic copies of the guidelines are available from the department's website at http://www.environment.gov.au/resource/guidelines-ecologically-sustainable-management-fisheries.</p>	<p>(iii) Quantities and numbers of specimens for each species sold or held as stocks.</p>
<p><u>Protection of Wild Syngnathid Populations</u></p> <p>The risk of introducing disease into wild populations is known to increase when wild-caught syngnathids are released back into the environment from where they were captured. Disease transmission is common among captive fish populations. While the risk level of disease transmission for syngnathids is difficult to quantify, the department considers that the return of harvested syngnathids into the wild poses an unacceptable risk and should be prohibited.</p>	<p>Condition 6:</p> <p>Wild caught and cultured syngnathids must not be returned to the wild.</p>

Assessment history:

Information on previous assessments for the Victorian PQ Aquatics Syngnathids Wildlife Trade Operation is available on the Department's website at

<https://www.awe.gov.au/environment/marine/fisheries/vic/pqaquatics>.

1st assessment finalised December 2003. Export approval was subject to 3 conditions.

2nd assessment finalised December 2009. Export approval was subject to 6 conditions.

3rd assessment finalised December 2012. Export approval was subject to 4 conditions.

4th assessment finalised December 2015. Export approval was subject to 4 conditions and 5 recommendations.

5th assessment finalised December 2018. Export approval was subject to 4 conditions.

Fishery reporting:

Annual report

April 2020-2021 [Annual Report](#) PQ Aquatics

November 2020-2021 [Annual Report](#) PQ Aquatics

Key links:

Fishery information

Victorian Fisheries Authority (2021). Available from: <https://vfa.vic.gov.au/>

Victorian Fisheries Authority (2021). Protected Aquatic and Priority Species. Available from: <https://vfa.vic.gov.au/operational-policy/legislation-and-regulation/protected-aquatic-and-priority-species>

Victorian Fisheries Authority (2021). PAB Permit Policy Statement. Available from: <https://vfa.vic.gov.au/operational-policy/legislation-and-regulation/protected-aquatic-and-priority-species/pab-permit-policy-statement>

Management plan

Port Philip Bay (Western Shoreline) and Bellarine Peninsula, Ramsar Site Management Plan Summary, Department of Environment, Land, Water and Planning, East Melbourne. Available from: https://www.water.vic.gov.au/_data/assets/pdf_file/0021/203349/PPBWS-and-BP-Ramsar-Site-Management-Plan-Summary.pdf

Enforcing legislation

[Fisheries Act 1995](#) (Vic)

[Fisheries Regulations 2019](#) (Vic)

[EPBC Act 1999](#) (Cth)

Ecological Risk Assessment

Non-detriment finding for the export of *Hippocampus abdominalis* and *H. breviceps* from Victoria by PQ Aquatics, Department of the Environment, December 2015. Available from:

[http://spire.environment.gov.au/spire/886644/246810/338/VIC%20-%20PQ%20Aquatics/Assessment%20-%20NDF%20-%20Proposed%20harvest%20limits%20\(H.%20abdominalis_H.%20breviceps\)%20-%202015.pdf](http://spire.environment.gov.au/spire/886644/246810/338/VIC%20-%20PQ%20Aquatics/Assessment%20-%20NDF%20-%20Proposed%20harvest%20limits%20(H.%20abdominalis_H.%20breviceps)%20-%202015.pdf)

References

Atlas of Living Australia (2021). *Hippocampus abdominalis* Lesson, 1827. Available from:

<https://bie.ala.org.au/species/urn:lsid:biodiversity.org.au:afd.taxon:180e82e4-7039-43ef-b227-1e0f3b386362>

Atlas of Living Australia (2021). *Hippocampus breviceps* Peters, 1869. Available from:

<https://bie.ala.org.au/species/urn:lsid:biodiversity.org.au:afd.taxon:d3881c8e-0671-4f22-aebd-8758df915b12>

Atlas of Living Australia (2021). *Phyllopteryx taeniolatus* Lacepede, 1804. Available from:

<https://bie.ala.org.au/search?sortField=score&dir=desc&q=weedy+seadragon>

Department of Agriculture, Water and the Environment, Australian Government (2021). *Hippocampus abdominalis*, *Hippocampus breviceps* and *Phyllopteryx taeniolatus* in Species Profile and Threats Database (SPRAT). Available from: <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl>

Department of Agriculture, Water and the Environment (2021). PQ Aquatics – Application 2021, Australian Government. Available from:

<https://www.awe.gov.au/environment/marine/fisheries/vic/pqaquatics/application-2021>

S. M., Yap, N., Mertens, & K., Mills (2020). 2020 Great Victorian Fish Count, Victorian National Parks Association. Available from: https://vnpa.org.au/wp-content/uploads/2021/09/GVFC-report-2020_web.pdf

SECTION 3: DETAILED ANALYSIS AGAINST THE GUIDELINES

Guidelines criteria	Comment
THE MANAGEMENT REGIME	
The management regime does not have to be a formal statutory fishery management plan as such, and may include non-statutory management arrangements or management policies and programs. The regime should:	
Be documented, publicly available and transparent.	<p>Meets</p> <p>The management regime implemented by the Victorian PQ Aquatics Syngnathids Wildlife Trade Operation (WTO) is documented online, publicly available and transparent. The operation's 2021 proposal, which describes the management measures in place for syngnathid harvest, can be accessed from the Department of Agriculture, Water and the Environment's website. The Victorian Fisheries Authority's (VFA) website also describes the management conditions in place when harvesting syngnathids under a Protected Aquatic Biota Permit. In addition, the Victorian legislation governing fishing activity in state waters, the Fisheries Act 1995 and Fisheries Regulations 2019, is also available from the Government website for Victorian Legislation (refer to page 8).</p>
Be developed through a consultative process providing opportunity to all interested and affected parties, including the general public.	<p>Meets</p> <p>A public consultation notice, which set out the proposal to declare PQ Aquatics as an approved WTO, was released for public comment on 24 June 2021 for a minimum of 20 business days on the department's website, and closed on 23 July 2021. No public comments were received. An additional invitation to comment or raise concerns was provided to the Victorian Fisheries Authority (VFA) on 15 November 2021. The VFA responded on 19 November 2021, confirming that they are satisfied with the renewal of PQ Aquatics as an approved WTO.</p>
Ensure that a range of expertise and community interests are involved in individual fishery management committees and during the stock assessment process.	<p>Partially Meets</p> <p>There is limited industry expertise and community interest in the PQ Aquatics WTO. Expertise on stock assessment is implemented through the species-specific management conditions prescribed by the VFA permit for Protected Aquatic Biota.</p>

Be strategic, containing objectives and performance criteria by which the effectiveness of the management arrangements are measured.	<p>Meets</p> <p>The effectiveness of management arrangements is measured through monthly General Permit Activity Reports, which provide specific details of harvesting and operational activities to the VFA. Major reporting details include harvesting locations, collection dates and times, the number of harvested specimens and their respective sexes, reproductive state (i.e. gravid), eggs released, hatchling survival, growth rates and overseas sale records. The department will also monitor harvest levels through annual reporting, as a condition on the renewed approval of the PQ Aquatics WTO.</p>
Be capable of controlling the level of harvest in the fishery using input and/or output controls.	<p>Meets</p> <p>The level of harvest is controlled through a harvest quota for the three specified syngnathid species. The harvest quota, which allows a maximum of four specimens (including gravid specimens) of each species to be collected, is implemented as a condition on the applicant's VFA permit for Protected Aquatic Biota. Further controls include permit conditions which require the VFA to be notified before harvesting activities commence, the return of monthly harvest reports and the performance of site inspections by VFA officers.</p>
Contain the means of enforcing critical aspects of the management arrangements.	<p>Meets</p> <p>Critical aspects of the management arrangements are enforced through spots checks of current stock on hand, relevant collection permits for syngnathids in state waters, and the condition of captive operation facilities. Such checks are performed by VFA officers, local police and water police.</p>
Provide for the periodic review of the performance of the fishery management arrangements and the management strategies, objectives and criteria.	<p>Meets</p> <p>Regular performance reviews have been built into the management arrangement for PQ Aquatics in the form of permit conditions. Reports containing accurate records of harvesting activities, captive breeding outcomes, stock on hand, and sales are provided to the department on an annual basis. This allows the department to monitor the level of syngnathids harvested and determine whether the operation is maintaining an appropriate level of ecological sustainability.</p>

Be capable of assessing, monitoring and avoiding, remedying or mitigating any adverse impacts on the wider marine ecosystem in which the target species lives and the fishery operates.	<p>Meets</p> <p>The adverse impacts of this operation on the wider marine ecosystem is negligible, given the low level of harvest, highly selective method of hand collection, and limited use of fishing equipment. Monthly harvest reports are also provided to the VFA, allowing Victorian authorities to further determine whether adverse impacts may exist for any relevant marine ecosystems.</p>
Requires compliance with relevant threat abatement plans, recovery plans, the National Policy on Fisheries Bycatch, and bycatch action strategies developed under the policy.	<p>Meets</p> <p>The use of a highly selective fishing method (hand collection) with minimal gear means that the impact on bycatch species and their relevant ecosystem is negligible. Where relevant, PQ Aquatics complies with management plans (e.g. threat abatement, recovery plans), action strategies and policies at the state and Commonwealth level.</p>
PRINCIPLE 1 - A fishery must be conducted in a manner that does not lead to over-fishing, or for those stocks that are over-fished, the fishery must be conducted such that there is a high degree of probability the stock(s) will recover.	
Objective 1 - The fishery shall be conducted at catch levels that maintain ecologically viable stock levels at an agreed point or range, with acceptable levels of probability.	
Information requirements	
1.1.1 There is a reliable information collection system in place appropriate to the scale of the fishery. The level of data collection should be based upon an appropriate mix of fishery independent and dependent research and monitoring.	<p>Meets</p> <p>Harvesting and operational data are collected through monthly reporting to the VFA, as well as annual reporting to the department. The annual reports provide species-specific details for harvesting activities, including the number of specimens taken, their respective sex and reproductive state (e.g. gravid), specimen age groups (e.g. juvenile, sub-adult and adult), and mortality rates. Such reports will allow the department to directly monitor harvest levels from the wild and sale records to overseas institutions.</p>
Assessment	
1.1.2 There is a robust assessment of the dynamics and status of the species/fishery and periodic review of the process and the data collected. Assessment should include a process to identify any reduction in biological diversity and /or reproductive capacity. Review should take place at regular intervals but at least every three years.	<p>Meets</p> <p>A stock assessment has not been undertaken for this operation. The department's NDF conducted in 2015 determined the CITES-listed species, including <i>Hippocampus breviceps</i> and <i>H. abdominalis</i>, could be wild harvested and retained as broodstock without detriment to the survival of Victorian populations. Given the small scale of the current operation and the low level of annual harvest, the target syngnathid species are considered unlikely to be overharvested.</p>

<p>1.1.3 The distribution and spatial structure of the stock(s) has been established and factored into management responses.</p>	<p>Meets</p> <p>A stock assessment has not been undertaken for this operation. All three syngnathid species are known to inhabit coastal waters throughout southern Australia, while populations of <i>H. abdominalis</i> also occur in the south-west of New Zealand. Quantitative data on the distribution and spatial structure of the target species is limited, particularly for wild populations inhabiting Victorian coastal waters. Populations of <i>H. abdominalis</i> have been found to be rare or scarce, and widely distributed. A 2004 study in Port Phillip Bay observed high densities of <i>H. breviceps</i>, with 0.21 adults per square metre recorded at the studied location. Large populations of this species are not typically observed outside of this region.</p> <p>In 2020, a citizen-led marine survey undertaken in Victorian coastal waters found that <i>H. abdominalis</i> was a commonly sighted non-target species (Yap, Mertens & Mills, 2020). The species was sighted in 3 of 12 surveyed locations within Port Phillip Bay (Yap et al., 2020). <i>H. breviceps</i> was sighted in only 1 of 12 surveyed locations (Yap et al., 2020). In contrast, the Weedy Seadragon was found in less than 10 per cent of surveys in and around Port Phillip Bay, with a maximum of 20 specimens in each sighted group (Yap et al., 2020).</p> <p>The NDF conducted in 2015 determined that the CITES-listed species, including <i>Hippocampus breviceps</i> and <i>H. abdominalis</i>, could be wild harvested and retained as broodstock without detriment to the survival of Victorian populations. Given that the harvest scale of PQ Aquatics is relatively low, the target species are considered unlikely to be overharvested from Victorian coastal waters. The lack of population data has been appropriately factored into management responses through continued restrictions on harvested species and numbers.</p>
<p>1.1.4 There are reliable estimates of all removals, including commercial (landings and discards), recreational and indigenous, from the fished stock. These estimates have been factored into stock assessments and target species catch levels.</p>	<p>Meets</p> <p>Syngnathid removal by PQ Aquatics can be reliably estimated through the harvest quantities prescribed by the VFA. The Protected Aquatic Biota Permit authorises a maximum of 4 specimens of each syngnathid species to be harvested on an annual basis. Syngnathid removal in state waters by other operations must also occur in accordance with a VFA permit. Given that the harvest scale of PQ Aquatics is relatively low, the target species are considered unlikely to be overharvested from Victorian coastal waters.</p>

<p>1.1.5 There is a sound estimate of the potential productivity of the fished stock/s and the proportion that could be harvested.</p>	<p>Meets</p> <p>A stock assessment has not been undertaken for this operation. A sound estimate of productivity is available for the CITES-listed <i>Hippocampus</i> species. <i>H. abdominalis</i> is a highly fecund species which produces several hundred offspring per breeding pair (Department of the Environment, 2015). <i>H. breviceps</i> will commonly breed during summer, when up to 300 offspring can be produced by a single breeding pair (Department of the Environment, 2015). Given that the harvest scale is relatively low, the target species are considered unlikely to be overharvested in Victorian coastal waters.</p>
<p>Management responses</p>	
<p>1.1.6 There are reference points (target and/or limit), that trigger management actions including a biological bottom line and/or a catch or effort upper limit beyond which the stock should not be taken.</p>	<p>Partially Meets</p> <p>The VFA permit prescribes a maximum level of harvest for each syngnathid species. Up to four specimens belonging to each species can be taken annually from Victorian coastal waters. The VFA permit has further limits on the take of Weedy Seadragons, where only one specimen can be harvested during any 48 hour period and wild harvest can occur only during the summer months of November, December and January. While these management measures maintain syngnathid harvest at a sustainable level, there are no prescribed species-specific reference points which would trigger further management actions.</p>
<p>1.1.7 There are management strategies in place capable of controlling the level of take.</p>	<p>Meets</p> <p>The level of take is adequately controlled through various management strategies. Such strategies include:</p> <ol style="list-style-type: none"> 1) The VFA must be notified before any harvesting activities take place. 2) Harvesting is restricted to Victorian coastal waters, including Port Phillip Bay and Western Port Bay. 3) Harvesting reports are completed after each harvesting activity and immediately returned to the VFA. 4) All harvested specimens are retained at the PQ Aquatics' captive facilities. 5) Only one Weedy Seadragon specimen can be harvested during any 48 hour period, with wild harvest only permitted between November and January.
<p>1.1.8 Fishing is conducted in a manner that does not threaten stocks of byproduct species.</p>	<p>Not applicable</p> <p>Stocks of byproduct species are not impacted by this operation, based on the highly selective nature of hand collection as a fishing method and minimal use of fishing gear.</p>
<p>(Guidelines 1.1.1 to 1.1.7 should be applied to byproduct species to an appropriate level)</p>	

1.1.9 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	<p>Meets</p> <p>Given the harvesting method and stringent reporting requirements in place, the management response has a high chance of achieving its objective in avoiding overfishing and promoting population recovery.</p>
<p>If overfished, go to Objective 2: If not overfished, go to PRINCIPLE 2:</p>	
<p>Objective 2 - Where the fished stock(s) are below a defined reference point, the fishery will be managed to promote recovery to ecologically viable stock levels within nominated timeframes.</p>	
<p>Management responses</p>	
1.2.1 A precautionary recovery strategy is in place specifying management actions, or staged management responses, which are linked to reference points. The recovery strategy should apply until the stock recovers, and should aim for recovery within a specific time period appropriate to the biology of the stock.	<p>Not applicable</p> <p>Current stocks of targeted syngnathid species are not considered to be overharvested. The commercial harvest of syngnathids is prohibited in Victorian coastal waters. Harvest is allowed only for the non-commercial purposes of research, aquaculture and exhibition by public institutions. The VFA implements a precautionary approach when issuing permits to harvest syngnathid species from the wild. The harvest of seahorses and seadragons is restricted to very low annual numbers, and is only permitted by a small number of Victorian operators for aquarium breeding purposes. The incidental catch of syngnathids by other fishing activities has not been publicly reported.</p>
1.2.2 If the stock is estimated as being at or below the biological and / or effort bottom line, management responses such as a zero targeted catch, temporary fishery closure or a 'whole of fishery' effort or quota reduction are implemented.	<p>Not applicable</p> <p>Current stocks of targeted syngnathid species are not considered to be overharvested.</p>
<p>PRINCIPLE 2 - Fishing operations should be managed to minimise their impact on the structure, productivity, function and biological diversity of the ecosystem.</p>	
<p>Objective 1 - The fishery is conducted in a manner that does not threaten bycatch species.</p>	
<p>Information requirements</p>	
2.1.1 Reliable information, appropriate to the scale of the fishery, is collected on the composition and abundance of bycatch.	<p>Meets</p> <p>The composition and abundance of bycatch species is not impacted by this operation. The highly selective fishing method (hand collection) is used to harvest target species only.</p>
<p>Assessment</p>	

2.1.2 There is a risk analysis of the bycatch with respect to its vulnerability to fishing.	<p>Not applicable</p> <p>The use of a highly selective fishing method (hand collection) means that bycatch species are not captured. Further risk analysis is not required for this operation.</p>
Management responses	
2.1.3 Measures are in place to avoid capture and mortality of bycatch species unless it is determined that the level of catch is sustainable (except in relation to endangered, threatened or protected species). Steps must be taken to develop suitable technology if none is available.	<p>Not applicable</p> <p>The use of a highly selective fishing method (hand collection) means that bycatch species are not captured. No further measures are required to avoid the capture and mortality of non-target species.</p>
2.1.4 An indicator group of bycatch species is monitored.	<p>Not applicable</p> <p>The use of a highly selective fishing method (hand collection) means that bycatch species are not captured. No further monitoring of an indicator group is required.</p>
2.1.5 There are decision rules that trigger additional management measures when there are significant perturbations in the indicator species numbers.	<p>Not applicable</p> <p>There are no specific decisions rules that trigger additional management measures, in response to significant perturbations in the numbers of indicator species. The absence of decision rules is appropriate, given that bycatch species are not threatened by the harvesting method (hand collection) used by PQ Aquatics.</p>
2.1.6 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	<p>Meets</p> <p>The management response has a high chance of achieving its objective of preventing adverse impacts on non-target species.</p>
Objective 2 - The fishery is conducted in a manner that avoids mortality of, or injuries to, endangered, threatened or protected species and avoids or minimises impacts on threatened ecological communities.	
Information requirements	

2.2.1 Reliable information is collected on the interaction with endangered, threatened or protected species and threatened ecological communities.	<p>Meets</p> <p>The applicant, Mr Pang Quong, monitors the abundance and reproductive behaviour of local Weedy Seadragon populations through underwater video recordings. Interactions with endangered, threatened or protected species and/or ecological communities is limited, based on the selective fishing method (hand collection) and low harvest level (4 specimens of each species, including gravid specimens) implemented by the operation.</p>
Assessments	
2.2.2 There is an assessment of the impact of the fishery on endangered, threatened or protected species.	<p>Meets</p> <p>There is no formal assessment of the operation's impact on endangered, threatened or protected species. The applicant actively monitors the reproductive behaviour and local abundance of Weedy Seadragons through video recordings. The selective fishing method (hand collection) and low level of harvest (4 specimens of each species) reduces the impact of this operation on susceptible protected species inhabiting the same Victorian coastal waters.</p>
2.2.3 There is an assessment of the impact of the fishery on threatened ecological communities.	<p>Not applicable</p> <p>There are no threatened ecological communities listed under the EPBC Act in the prescribed harvesting regions.</p>
Management responses	
2.2.4 There are measures in place to avoid capture and/or mortality of endangered, threatened or protected species.	<p>Meets</p> <p>Interactions with protected species, including capture and mortality, are avoided through various management measures. The applicant monitors the behaviour and local abundance of Weedy Seadragons through video recordings. In addition, the VFA permit for Protected Aquatic Biota prohibits collection from Marine Reserves and other marine protected areas. The selective fishing method (hand collection) and low level of harvest (4 specimens of each species) also limits the possibility of having adverse interactions with protected species.</p>
2.2.5 There are measures in place to avoid impact on threatened ecological communities.	<p>Not applicable</p> <p>There are no threatened ecological communities listed under the EPBC Act in the prescribed harvesting region.</p>
2.2.6 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	<p>Meets</p> <p>The permit conditions prescribed by the VFA, including restrictions on harvested species, annual take and locations, ensures that the operation does not adversely impact protected marine species and ecological communities through mortality and injury.</p>

Objective 3 - The fishery is conducted, in a manner that minimises the impact of fishing operations on the ecosystem generally.	
Information requirements	
2.3.1 Information appropriate for the analysis in 2.3.2 is collated and/or collected covering the fishery's impact on the ecosystem and environment generally.	<p>Meets</p> <p>Robust methods of data collection are implemented for this operation. The VFA permit requires that accurate data is collected following each harvesting activity, with details including the number of stock on hand and the location that was accessed. The applicant uses underwater video recording to assess and establish trends in local population sizes for targeted syngnathid species. Information on the environmental impacts caused by this operation is not available, due to the absence of formal population monitoring programs in the area. Such information is considered unnecessary, given that the operation uses a low-impact fishing method (hand collection) and harvests a small number of specimens annually.</p>
Assessment	
2.3.2 Information is collected and a risk analysis, appropriate to the scale of the fishery and its potential impacts, is conducted into the susceptibility of each of the following ecosystem components to the fishery. <ol style="list-style-type: none"> Impacts on ecological communities <ul style="list-style-type: none"> Benthic communities Ecologically related, associated or dependent species Water column communities Impacts on food chains <ul style="list-style-type: none"> Structure Productivity/flows Impacts on the physical environment <ul style="list-style-type: none"> Physical habitat Water quality 	<p>Partially Meets</p> <p>A formal Ecological Risk Assessment (ERA) is not considered necessary for the PQ Aquatics WTO, given the small scale of the operation and the use of a selective and low-impact fishing method. The Protected Aquatic Biota Permit issued by the VFA requires accurate data to be collected on harvesting activities, including locations and dates, the number of specimens taken, their reproductive state (e.g. gravid) and respective sex, hatchling survival, growth rates and overseas sales records. The applicant, Mr Quong, also uses underwater video recordings to observe the abundance of local syngnathid populations and their reproductive behaviour.</p> <p>Environmental impact data from the PQ Aquatics WTO has not been collected. The absence of such data means that a risk analysis on the susceptibility of each ecosystem component to the operation cannot be conducted. However, the low level of harvest (4 specimens of each species) and highly selective fishing method (hand collection while diving) is expected to reduce the risk of adverse impacts on the ecological communities, food chains and physical environment found within Victorian coastal waters.</p>

Management responses	
2.3.3 Management actions are in place to ensure significant damage to ecosystems does not arise from the impacts described in 2.3.1.	<p>Meets</p> <p>Several management actions have been implemented by PQ Aquatics and the Victorian Government authority (VFA) to minimise significant damage to local ecosystems. Such management actions include species restrictions, a low level of annual harvest, restricted access to Victorian waters and a low-impact fishing method. The use of a highly selective fishing method with minimal gear (hand collection by diving) is not considered to adversely impact the marine ecosystem.</p>
2.3.4 There are decision rules that trigger further management responses when monitoring detects impacts on selected ecosystem indicators beyond a predetermined level, or where action is indicated by application of the precautionary approach.	<p>Not applicable</p> <p>Indicators of ecosystem damage have not been established for this operation or the prescribed harvesting locations. Therefore, there are no monitoring-based decision rules that trigger further management responses in response to ecosystem damage. The Protected Aquatic Biota Permit can be cancelled at any time in writing by the VFA if the applicant fails to comply with the conditions of the permit.</p>
2.3.5 The management response, considering uncertainties in the assessment and precautionary management actions, has a high chance of achieving the objective.	<p>Meets</p> <p>The management response, considering assessment uncertainties and precautionary management actions, has a high chance of achieving its intent of minimising ecosystem damage. The use of a highly selective and low-impact fishing method (hand collection while diving), as well as the management arrangements prescribed by the VFA (e.g. species and location restrictions, limited take, record keeping and reporting requirements) will reduce any potential impact on the ecosystem.</p>

SECTION 4: ASSESSMENT AGAINST THE EPBC ACT

The table below is not a complete or exact representation of the EPBC Act. It is intended to show that the relevant sections and components of the EPBC Act have been taken into account in the formulation of advice on the fishery in relation to decisions under Part 13 and Part 13A.

Part 12 – Identifying and monitoring biodiversity and making bioregional plans

Section 176 Bioregional Plans	Comment
(5) Minister must have regard to relevant bioregional plans	Not applicable The operation occurs in the Victorian state waters of Port Phillip Bay and Western Port Bay. Such areas are not located within Commonwealth marine regions which require a bioregional plan.

Part 13 – Species and communities

Given that PQ Aquatics operates only in Victorian state waters (e.g. Port Phillip Bay, Western Port Bay) and does not operate in a Commonwealth marine regions where a bioregional plan is required, Part 13 Accreditation is not applicable to this operation. The impact of this operation within Victorian state waters and on wild syngnathid populations and other EPBC Act listed Marine species, is considered in Part 13A below. PQ Aquatics is managed under the *Fisheries Act 1995* (Vic), Fisheries Regulations 2019 (Vic) and a Protected Aquatic Biota Permit issued by the Victorian Fisheries Authority.

Part 13A – International movement of wildlife specimens

Section 303BA Objects of Part 13A	
<p>(1) The objects of this Part are as follows:</p> <ul style="list-style-type: none"> (a) to ensure that Australia complies with its obligations under CITES and the Biodiversity Convention; (b) to protect wildlife that may be adversely affected by trade; (c) to promote the conservation of biodiversity in Australia and other countries; (d) to ensure that any commercial utilisation of Australian native wildlife for the purposes of export is managed in an ecologically sustainable way; (e) to promote the humane treatment of wildlife; (f) to ensure ethical conduct during any research associated with the utilisation of wildlife; and (h) to ensure the precautionary principle is taken into account in making decisions relating to the utilisation of wildlife. 	<p>The management arrangements for the fishery have been assessed and found to be consistent with the general guidance provided in the objects of Part 13A as:</p> <ul style="list-style-type: none"> • the harvest of any Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) listed species is sustainable and consistent with Australia's obligations • there are management arrangements in place to ensure that the resource is being managed in an ecologically sustainable way • the operation of Victorian PQ Aquatics Syngnathids Wildlife Trade Operation is unlikely to be unsustainable and threaten biodiversity within the next three years, and • the Environment Protection and Biodiversity Conservation Regulations 2000 do not specify fish as a class of animal in relation to the welfare of live specimens.
Section 303 CG Minister may issue permits (CITES species)	Comment
<p>(3) The Minister must not issue a permit unless the Minister is satisfied that:</p> <ul style="list-style-type: none"> (a) the action or actions specified in the permit will not be detrimental to, or contribute to trade which is detrimental to: <ul style="list-style-type: none"> (i) the survival of any taxon to which the specimen belongs; or 	<p>Meets</p> <p>Given the operations' management arrangements in place to monitor and control the level of harvest of CITES species and noting the minimal level of CITES species being exported from the operation, the department considers that the operation will not be detrimental to the survival of any taxon to which the CITES specimen belongs in the short to medium term. A condition on the WTO declaration for the operation includes annual reporting requirements, which will allow the department to monitor the status of CITES specimens harvested by the operation.</p>
<ul style="list-style-type: none"> (ii) the recovery in nature of any taxon to which the specimen belongs; or 	<p>Meets</p> <p>The CITES specimens that are harvested as part of the operation are not considered to be overfished in Victoria. Management arrangements are in place,</p>

	including annual harvest limits and spatial restrictions, to ensure that the low level of harvest continues to be ecologically sustainable.
(iii) any relevant ecosystem (for example, detriment to habitat or biodiversity); and	Meets Recognising the small scale (an annual maximum of 4 specimens of each species) and nature of the harvest (hand collection), the potential for the operation to impact unacceptably and unsustainably on any relevant ecosystem generally is considered low. The department is satisfied that the operation is conducted in a manner that minimises the impact of fishing operations on the ecosystem generally.
Section 303DC Minister may amend list (non CITES species)	Comment
(1) The Minister may, by legislative instrument, amend the list referred to in section 303DB [list of exempt native specimens] by: (a) doing any of the following: (i) including items in the list; (ii) deleting items from the list; (iii) imposing a condition or restriction to which the inclusion of a specimen in the list is subject; (iv) varying or revoking a condition or restriction to which the inclusion of a specimen in the list is subject; or (b) correcting an inaccuracy or updating the name of a species.	Not applicable The PQ Aquatics Syngnathids Wildlife Trade Operation is not eligible for listing on the List of Exempt Native Specimens (LENS), given that both CITES- and EPBC Act-listed species (<i>Hippocampus abdominalis</i> and <i>H. breviceps</i>) are being harvested.
(1A) In deciding to amend the LENS, the Minister must rely primarily on outcomes an assessment under Part 10, Divisions 1 or 2	Not applicable The areas in which PQ Aquatics operates, Port Phillip Bay and Western Port Bay in Victoria, are not managed by the Commonwealth.
(1C) The above does not limit matters that may be considered when deciding to amend LENS.	Not applicable The PQ Aquatics Syngnathids Wildlife Trade Operation is not eligible for listing on the LENS, given that both CITES- and EPBC Act-listed species are being harvested.
(3) Before amending the LENS, the Minister must consult:	Not applicable

<ul style="list-style-type: none"> (a) other Minister or Ministers as appropriate; and (b) other Minister or Ministers of each State and self-governing Territory as appropriate; and (c) other persons and organisations as appropriate. 	<p>The PQ Aquatics Syngnathids Wildlife Trade Operations is not eligible for listing on the LENS, given that both CITES- and EPBC Act-listed species are being harvested.</p>
Section 303FN Approved wildlife trade operation	Comment
<p>(3) The Minister must not declare an operation as an approved wildlife trade operation unless the Minister is satisfied that:</p> <ul style="list-style-type: none"> (a) the operation is consistent with the objects of Part 13A of the Act; and (b) the operation will not be detrimental to: <ul style="list-style-type: none"> (i) the survival of a taxon to which the operation relates; or (ii) the conservation status of a taxon to which the operation relates; and (ba) the operation will not be likely to threaten any relevant ecosystem including (but not limited to) any habitat or biodiversity; and 	<p>Meets</p> <p>The PQ Aquatics Syngnathids Wildlife Trade Operation is consistent with Objects of 13A – see above assessment against the Guidelines.</p> <p>The fishery will not be detrimental to the survival or conservation status of a taxon to which it relates, nor will it threaten any relevant ecosystem, within the next 3 years, given the management measures currently in place, which include restrictions on the number of syngnathid species and specimens harvested in Victoria, restrictions on harvesting locations, hand collection by diving, the use of designated captive facilities, and record keeping and reporting requirements.</p>
<ul style="list-style-type: none"> (c) if the operation relates to the taking of live specimens that belong to a taxon specified in the regulations – the conditions that, under the regulations, are applicable to the welfare of the specimens are likely to be complied with; and 	<p>Not applicable</p> <p>The Environment Protection and Biodiversity Conservation Regulations 2000 (EPBC Regulations) do not specify Syngnathidae as a family of animal in relation to the welfare of live specimens.</p>
<ul style="list-style-type: none"> (d) such other conditions (if any) as are specified in the regulations have been, or are likely to be, satisfied. 	<p>Not applicable</p> <p>No other conditions are specified in relation to commercial fisheries in the EPBC Regulations.</p>
<p>(4) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <ul style="list-style-type: none"> (a) the significance of the impact of the operation on an ecosystem (for example, an impact on habitat or biodiversity); and 	<p>Meets</p> <p>The PQ Aquatics Syngnathids Wildlife Trade Operation will not have a significant impact on any relevant ecosystem within the next 3 years, given the management measures currently in place, which include the arrangements described above at s303FN 3(b).</p>

<p>(b) the effectiveness of the management arrangements for the operation (including monitoring procedures).</p>	<p>Meets</p> <p>The management arrangements that will be employed for the Victorian PQ Aquatics Syngnathids Wildlife Trade Operation, as outlined in in the assessment against the Guidelines (above), are likely to be effective.</p>
<p>(5) In deciding whether to declare an operation as an approved wildlife trade operation the Minister must have regard to:</p> <p>(a) whether legislation relating to the protection, conservation or management of the specimens to which the operation relates is in force in the State or Territory concerned; and</p> <p>(b) whether the legislation applies throughout the State or Territory concerned; and</p> <p>(c) whether, in the opinion of the Minister, the legislation is effective.</p>	<p>Meets</p> <p>The Victorian PQ Aquatics Syngnathids Wildlife Trade Operation will be managed under the <i>Fisheries Act 1995</i> (Vic) and Fisheries Regulations 2019 (Vic).</p> <p>The <i>Fisheries Act 1995</i> (Vic) applies throughout Victorian waters.</p> <p>The department considers that the legislation is likely to be effective.</p>
<p>(10) For the purposes of section 303FN, an operation is a wildlife trade operation if, an only if, the operation is an operation for the taking of specimens and:</p> <p>(a) the operation is a commercial fishery.</p>	<p>Meets</p> <p>Victorian PQ Aquatics Syngnathids Wildlife Trade Operation is a small scale commercial fishery.</p>

<p>(10A) In deciding whether to declare that a commercial fishery is an approved wildlife trade operation for the purposes of this section, the Minister must rely primarily on the outcomes of any assessment in relation to the fishery carried out for the purposes of Division 1 or 2 of Part 10.</p> <p>(10B) Subsection (10A) does not limit the matters that may be taken into account in deciding whether to declare that a fishery is an approved wildlife trade operation for the purposes of this section.</p>	<p>Not applicable</p> <p>There has been no request or agreement to assess the operation under Part 10 Division 1, and the fishery is not managed by the Commonwealth, so Part 10 Division 2 does not apply.</p>
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Section 303FR Public consultation	Comment
<p>(1) Before making a declaration under section 303FN, the Minister must cause to be published on the Internet a notice:</p> <ul style="list-style-type: none"> (a) setting out the proposal to make the declaration; and (b) setting out sufficient information to enable persons and organisations to consider adequately the merits of the proposal; and (c) inviting persons and organisations to give the Minister, within the period specified in the notice, written comments about the proposal. <p>(2) A period specified in the notice must not be shorter than 20 business days after the date on which the notice was published on the Internet.</p> <p>(3) In making a decision about whether to make a declaration under section 303FN, the Minister must consider any comments about the proposal to make the declaration that were given in response to the invitation in the notice.</p>	<p>Meets</p> <p>A public notice, which set out the proposal to declare PQ Aquatics an approved Wildlife Trade Operation and included the application from Mr Pang Quong, was released for public comment from 24 June 2021 to 23 July 2021, for a minimum of 20 business days. No public comments about the proposal were received. An additional invitation to comment or raise concerns was provided to the Victorian Fisheries Authority (VFA) on 15 November 2021. The VFA has no concerns or comments regarding the renewed approval of PQ Aquatics as a Wildlife Trade Operation.</p>
Section 303FT Additional provisions relating to declarations	Comments
<p>(1) This section applies to a declaration made under section 303FN, 303FO or 303FP.</p>	<p>A declaration for the Victorian PQ Aquatics Syngnathids Wildlife Trade Operation will be made under section 303FN.</p>
<p>(4) The Minister may make a declaration about a plan or operation even though he or she considers that the plan or operation should be the subject of the declaration only:</p> <ul style="list-style-type: none"> (a) during a particular period; or (b) while certain circumstances exist; or (c) while a certain condition is complied with. <p>In such a case, the instrument of declaration is to specify the period, circumstances or condition.</p>	<p>The standard conditions applied to commercial Wildlife Trade Operations include:</p> <ul style="list-style-type: none"> • operation in accordance with the management regime • notifying the department of changes to the management regime, and • annual reporting in accordance with the requirements of the Australian Government <i>Guidelines for the Ecologically Sustainable Management of Fisheries – 2nd Edition</i>. <p>The Wildlife Trade Operation instrument for the PQ Aquatics specifies the standard and any additional conditions applied.</p>

(8)	A condition may relate to reporting or monitoring.	One of the standard conditions relates to reporting.
(9)	The Minister must, by instrument published in the <i>Gazette</i> , revoke a declaration if he or she is satisfied that a condition of the declaration has been contravened.	Not applicable

Part 16 – Precautionary principle and other considerations in making decisions

Section 391 Minister must consider precautionary principle in making decisions		Comment
(1)	Minister must take account of the precautionary principle in making a decision, to the extent that the decision is consistent with other provisions under this Act.	Meets Given the various management arrangements, including restrictions on species, harvest numbers and locations, the use of a highly selective fishing method, and record keeping and reporting requirements, precautionary measures are considered to be in place to prevent serious or irreversible environmental damage being caused by this operation.
(2)	The precautionary principle is that lack of full scientific certainty should not be used as a reason for postponing a measure to prevent degradation of the environment where there are threats of serious or irreversible environmental damage.	