

EXTENSION TO EXISTING APPROVED AQUACULTURE PROGRAM (AQ) AND EXTENSION TO
EXISTING APPROVED WILDLIFE TRADE OPERATION (WTO) PROPOSAL

1.0 Introduction

This proposal is for the extension to both an existing Wildlife Trade Operation (WTO) and existing Approved Aquaculture Program (AQ) that Jardini Pty Ltd currently holds and has been prepared in accordance with the Environment Protection and Biodiversity Conservation Act (EPBC) 1999.

‘A wildlife trade operation is an operation taking specimens that meets legal requirements, such as a market testing operation, a small-scale operation, a developmental operation, a commercial fishery, a provisional operation or an existing stocks operation. Wildlife trade operations are made through an instrument signed by the Australian Government environment minister and published in the Australian Government Gazette. The minister may specify the period, the circumstances or the conditions under which the operation will be subject in the declaration. Approval is for a maximum of three years. A declaration may be varied by specifying additional or new conditions or revoking or varying existing conditions by a subsequent instrument published in the Gazette.’ (Dept. Environment, 2016) The purpose of this submission by the applicant is to extend their existing approvals for their business to operate as a Wildlife Trade Operation and Approved Aquaculture Program under the EPBC Act 1999 for the breeding and export *Neoceratodus forsteri* – Australian Lungfish (CITES listed). The applicants operation does not meet the requirements for a captive breeding program as they have not bred Australian Lungfish to second-generation although they have successfully bred from wild broodstock. Approval as an aquaculture program (AQ) will satisfy the EPBC Act requirement for an EPBC Act listed threatened species, whilst approval as a WTO will satisfy the EPBC Act requirement for a species listed on Appendix II to CITES. The Australian Lungfish owned by the applicant were collected under a brood stock collection permit issued by the Department of Agriculture and Fisheries (DAF). The permit was approved by DAF to replace the previously issued brood stock permit owned by Mr Bill Proctor whom passed away and with him went the knowledge of where his brood stock were being housed.

2.0 Reporting for Previously approved WTO and AQ Programs

A condition on applicants previously approved WTO and AQ programs was to report numbers of offspring sold each year annually to the Department. The applicant maintained this condition by providing the Department with regular copies of Specimen Export Records (SER) following each export. This ensured that the applicant was compliant with all conditions previously placed them by the Department for the WTO and AQ. In addition, the Department did not request any further information from the applicant for their existing WTO and AQ programs and it was therefore affirmed that the applicant was fully compliant with all conditions of their existing WTO and AQ programs. Based on these factors the applicant can see no reason for the Department not approving an extension to their existing WTO and AQ programs with the minor amendment to conditions proposed by the applicant in section 8.0 of this document.

3.0 Statement of General Goals/aims

The primary goal of the applicant is to have their business to have their existing registration as an approved Aquaculture program and Wildlife Trade Operation be extended. This will allow the applicants business to continuing trading in captive bred Australian lungfish and to legally obtain an export permit as a WTO to export Australian Lungfish. The main goal of the operation is to breed Australian Lungfish for commercial purposes, using the brood stock collected under a DAF approved permit. The long-term goal of the applicant is to work toward breeding the Australian Lungfish to second generation. In addition, the applicant believes that a legal commercial export trade in Australian Lungfish will reduce the impact of trade on wild populations. Regular supply will reduce the incentive to illegally sell or buy wild caught animals by reducing the monetary value of the species on the international market. The intention of the applicant is to export commercially farmed Australian lungfish into the international aquarium trade industry. This will reduce the current numbers of illegally traded lungfish on the market. The applicant is planning to undertake more scientific research to enhance the understanding of this species and has university's arranged to do this through PHD students.

4.0 Harvest Details

All brood stock required for this venture have been collected under a DAF approved brood stock collection permit. The brood stock were collected using hand nets only to reduce impact to other species. No electrofishing or invasive catching techniques were used such as gill netting. Brood stock was harvested between 2016 and 2019 with a total of 28 broodstock collected. Brood stock General Fisheries Permit 188473 was used for all collection.

5.0 Impact of Harvest on the taxa and the relevant ecosystem

As mentioned within this application in the previous sections all fish will be sourced from captive bred facilities and no wild caught specimens will be harvested or exported by the applicant. Therefore, the applicant considers that there will be no harvest impact on the taxa (as outlined in Section 1 above), nor will there be any impact on their associated ecosystems. All brood stock are kept and bred in a closed, controlled environment under a DAF approved Aquaculture licence, numbers 2005BC0398 and 1902-9912SDA (2019BC0009) respectively, in accordance with the provisions of the Sustainable Planning Act 2009.

6.0 Monitoring and Assessment

For the purpose of this submission the applicant has already collected all broodstock under General Fisheries Permit 188473 which expired on 11th October 2019. All conditions and monitoring required under the General Fisheries brood stock collection permit were upheld by the applicant including the regular reporting required by completing a brood stock log book and submitting to DAF on a regular basis. The intention is to sell fish which have been bred within captive breeding programs from a very small number of wild brood stock fish so as to not impact any additional wild populations of these fish. In addition, all wild brood stock were collected from translocated wild populations in the Brisbane and Pine River systems which are not considered to be native populations. This was aimed to reduce any impact on any wild native populations of fish. Based on these conditions the applicant does not consider that there is any additional requirement to monitor or assess any wild populations of the specie outlined in this application. This in namely due to the fact that wild populations of these species will not be impacted by this WTO or AQ.

6.1 Has there been a resource assessment of distribution and abundance (for example, population survey) for the harvest area? If yes, provide details.

This was assessed by DAF officers who are well trained and have undertaken many surveys of these fish in the areas proposed for collection. The DAF officers namely responsible for this are Mr Peter Kind and Mr Steven Brooks. Both officers had assessed the applicants proposed brood stock collection sites and methods for harvest.

6.2 Will there be independent supervision of the harvesting? If so, provide details (for example, State/Territory control) and how will be achieved.

No independent supervision was conducted, however the applicant did invite any parties to be present should they wish to be present.

6.3 Outline the methods to be employed to monitor the harvesting of the specimens to identify whether the species or other species in the ecosystem are affected by the harvesting.

Given the nature on harvesting is low impact (hand netting individual fish and fyke netting) and the fact that very few brood stock were collected from translocated populations it is not expected that any additional monitoring of harvest locations will be required. Further more no future broodstock harvesting is expected and therefore the operation is now mainly operating as an aquaculture facility.

6.4 Describe any other biological and environmental monitoring proposed for the harvesting area.

No additional harvesting or environmental monitoring is proposed.

7.0 Management Strategies

Each breeding season, a small proportion of the first generation offspring (future breeders) will be retained by Jardini Pty Ltd for the purposes of conservation breeding and to work toward the goal of producing second generation offspring of Australian Lungfish in a captive environment. It is estimated that the Australian Lungfish reaches maturity between 15 and 20 years of age, although breeding maturity is probably determined by size rather than age and maturity is believed to be reached somewhere between 700 and 750mm. If in the future it is agreed that the captive stock kept at the applicant's premises are required for the purpose of conservation breeding (e.g. to restock wild populations), the number of offspring retained may need to increase to meet such requirements.

8.0 Compliance

All live specimens of Australian Lungfish exported from the applicant's premises will be animals that are at least first generation, produced from the brood stock kept on the premises. To date the applicant has been required to use internal PIT tags in all progeny prior to export. This measure is over and above any measure required by any similar CITES II listed fish species world wide. Generally CITES only require internal PIT tags in CITES I specimens and CITES currently do not have any requirement for CITES II fish species such as the Australian Lungfish. Over the past few years the applicants facility has had a reduction in sales of its fish due to Illegal lungfish hitting the market at smaller sizes (ie smaller than what can successfully be PIT tagged. i.e. <8cm). We propose that our WTO and AQ is approved without the condition or requirement to PIT tag all specimens exported. This is based on the following elements.

1. It will allow the facility to sell and export smaller specimens at a cheaper rate to assist in reducing and if not eliminating the current illegal black market trading in this species.
2. PIT tagging is currently not a prescribed requirement from CITES for CITES listed II species and is only a requirement for CITES I species.
3. PIT tagging is an expensive cost (time, labour and expertise required) for the business and this adds to the product costs that also adds to our product being out competed by illegal black market stock.

If both the WTO and AQ programs are extended, all specimens of Australian Lungfish at the applicant's premises will be kept and produced in accordance with the conditions of both the AQ and WTO.

9.0 Reports

A report for each previous calendar year will be supplied to the Department of Environment upon request each year. The report will include a summary table similar to that outlined in Table 1, below. Any additional information required by the Department of Environment as a part of the WTO or AQ will be added within the annual report.

Table 1 - Annual Report Summary Table

Species	No. Species Exported	Average Size of Specimens
<i>Neoceratodus forsteri</i> – Australian Lungfish		

10.0 Background information

Taxonomy

Kingdom: Animalia

Phylum: Chordata

Class: Osteichthyes (Bony Fishes)

Order: Ceratodontiformes

Family: Ceratodontidae

Genus: Neoceratodus

Species: forsteri

Natural History

Along with the South American Lungfish *Lepidosiren paradoxa*, and four African Lungfish species in the genus *Protopterus*, the Australian Lungfish *Neoceratodus forsteri* is one of only six surviving members of a highly successful group of fishes that first appeared in the Devonian period, some 350 million years ago. A recent revision of Australian Lungfish of the family Neoceratodontidae describes 11 species of lungfish, including *N. forsteri* that once inhabited central, northern and eastern Australia. Today, the natural habitat of the Australian Lungfish is the Mary and Burnett Rivers in South-East Queensland, Australia. It is also found (possibly through translocation) in several other river systems in South-East Queensland including the Brisbane River. Fossil evidence demonstrates that the distribution of the Australian Lungfish has contracted over time. Recent scientific studies have shown the Australian Lungfish to be abundant and thriving in its natural and translocated habitats. However, the species is characterised by slow growth, long generation times, high adult survival rate and low annual recruitment rates, and thus, abundance is not necessarily a reliable indicator of the population health of Australian Lungfish. The ratio of males to females is believed to be 1:1 and Australian Lungfish spawn in their natural environment between August and December.

History of trade

Due to the restricted protection of Australian Lungfish, there was no commercial export of Australian Lungfish before 2002. However, there was evidence of substantial illegal trade, for example, the two shipments seized by Authorities in 1999. One shipment contained seven (7) individuals and was seized upon leaving Australia. The other shipment contained approximately fifty (50) finger length hatchlings and was seized by authorities on arrival in Japan. In 2001, a private company successfully bred Australian Lungfish in captivity. This subsequently resulted in an export of juvenile Australian Lungfish to Japan in September 2002 under restricted conditions. The export of juvenile Australian Lungfish has continued after the sale of this original business operation in 2009.