Appendix 3: Template for proposing a new EEP

TAGs can use this Template for proposing a new EEP to the EEP Committee. As per default these applications follow from the RCP publication process and the Species Assessment Sheet should be sent along with this template. In exceptional cases new EEPs may also be proposed in between RCP editions. A separate Species Assessment Sheet should be completed if an EEP is being applied for in between RCP editions. Note that not all sections below may be relevant to each programme. Also note that 'species' represents any taxonomic unit the TAG has chosen as the unit of management in an EEP.

EEP Proposal for

Common Species Name:
Scientific Species Name: Osphronemidae

Prepared by

Name(s): Nathaniel Ng – Freshwater Teleost TAG
Year: 2024

1. Contact information

Contact details of proposed EEP Coordinator

Name: Nathaniel Ng
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2. Taxonomy information

Taxonomy of the species *(indicate which taxa are included in this programme and why, and give an indication of the degree of confidence in the taxonomic identification of the individuals in the EEP population)*

This EEP covers the more than 130 species in the Asiatic family Osphronemidae. Taxonomy is this family is not fully resolved, with some uncertainty especially in the more speciose genera (e.g., *Parosphromenus*).

3. Identified roles

Identified role(s) description *(copy from the Species Assessment Sheet in RCP)*
Insurance: This direct conservation role contemplates the possibility to maintain long-term ex situ populations to preserve options for the future. The ex situ populations are a potential future source to build up (long-term) populations for reintroductions.

Exhibit: Gouramies contains many attractive species that could fulfil this non-conservation role. Furthermore, it could serve to bring specific educational messages (eg.: Osphronemidae biology)

4. Programme participants and governance

EAZA institutional scope *(As a default, participation in EEPs is obligatory for EAZA Members. If you wish for an exemption, identify which institution(s) holding this species is/are not part of the EEP and explain the underlying reasons.)*

Non-EAZA holding institutional scope *Select one or more of the options below.*

- ☐ *EAZA population/community is the dominating driver of the EEP and any non-EAZA Members will occasionally join and are not integral to the structure of the EEP.*
- ☑ *In addition to EAZA, there are other structural/equal drivers of the EEP (e.g., World Pheasant Association, …). Please describe.*
  The Parosphromenus Project is a group of fishkeepers, based in Europe, who come from various backgrounds, including hobbyists, academics, and researchers. They aim to contribute to the conservation of this group of blackwater specialists by keeping track of and maintaining insurance populations of various Parosphromenus species in their members' tanks. They also organize and conduct field studies, working with field researchers on the ground to better understand the situation for these fish in the wild.
  They are listed as a conservation partner of the IUCN SSC's Asian Species Action Partnership, and a partner also of freshwater-focused NGO SHOAL.
- ☐ *A larger initiative exists and the EAZA population is a small part of this (e.g., GSMP, …). Please describe.*

All forms/templates are available to download on the EAZA Member Area.

Additional information:

Essential non-EAZA partners not holding animals *(List the organisations, define their role, and how they will work with the EEP).*

IUCN – The IUCN Freshwater Fish Specialist Group (FFSG) serves an integral role in bringing together conservationists and stakeholders from a variety of backgrounds together in a collaborative framework, focused on the task of safeguarding threatened freshwater fishes. By working together with the IUCN FFSG, we will be able to tap onto the wealth of expertise and experience therein, and also better integrate the EEP's efforts with those of the greater international freshwater fish conservation community.

Continuing along the similar vein, SHOAL is an international conservation partnership and NGO focused on the protection of freshwater species and habitats. They likewise bring with them a large network of conservation partners and access to stakeholders (including within the native distributions of many of these threatened osphronemid species), which is something the EEP can potentially benefit greatly from.

Members of the EEP core group (Species Committee + non-voting members)

- *By default, EEPs have a Species Committee (a democratically elected representation of the holders) as part of their EEP core group (information on the Species Committee and its associated default decision making process can be found in the Population Management Manual). If that will not be the case for this EEP, explain why and define the composition, structure and decision-making process for the EEP core group.*
- *List the EEP core group members (names and institutions) (if already known): Species Committee members, Advisors, others.*

Collaboration with EAZA Working Groups and Committees *(Explain any current and/or future proposed links to existing EAZA groups and committees, such as the Animal Training Working Group, Biobanking Working Group, EAZA Group on Zoo Animal Contraception (EGZAC), EAZA Population Management Advisory Group (EPMAG), EAZA Education Committee, EAZA Nutrition Working Group, EAZA Research Committee, Reintroduction and Translocations Group, Transport Working Group,*

EAZA Veterinary Committee, EAZA Conservation Committee, Animal Welfare Working Group, Palm oil Working Group).

At this point in time, I foresee potential links with the following groups/committees: Biobanking Working Group, EAZA Population Management Advisory Group, EAZA Education Committee, EAZA Research Committee, Reintroduction and Translocations Group, EAZA Conservation Committee, Palm Oil Working Group

5. Programme characteristics

The detailed programme characteristics, goals, objectives and management strategies to fulfil the roles and goals of the EEP will be developed at a later stage as part of a Long-Term Management Plan (LTMP). The questions below are intended to help paint a rough view of what is currently intended/expected for the general EEP programme characteristics.

- *If there is a recent/active Long-term Management Plan for this species, list the demographic, genetic and other goals determined (if they still apply post RCP workshop).*

  There is no LTMP for this family at the moment.

- *What is the anticipated duration of the programme?*

  While there is no exact estimate for this programme's duration at the moment, this will definitely be a long term programme.

- *What is the anticipated likelihood and time scale of the use of the EEP population for restoration in the wild (reintroduction, reinforcement, etc.)?*

  This would vary based on the species under discussion. Many of the species under threat are limited distribution endemics facing high risk of imminent habitat destruction, which renders them very vulnerable to extinction in the near future; as such, an assurance role is anticipated to buy time for efforts on the ground targeted at longer term habitat protection and restoration.
  Depending on potential in situ partnerships and collaborations in the future, reintroduction/reinforcement where necessary is something that would be highly prioritized and encouraged.

- *Are some or all the individuals within this EEP intended to be held in specialist ex situ centres in the species' native range? Specify.*

  Not at the moment. However there is definite potential for this in the future.

- *Is it expected to be necessary that the whole population, or a certain proportion thereof, will need to be held off exhibit in order to fulfil the roles of the programme? If yes, please explain. (this question does not refer to the temporary housing of individuals off exhibit for space reasons)*

  This is likely to be true for at least some species. Due to the small size and extremely shy and sensitive nature of some osphronemid species, it is probable that some species will only be able to survive and breed reliably when held off-exhibit.
  There also definitely are species which are suitable for exhibition.

- *Does a part or the whole of the EEP population need to be held in bio-secure facilities? And/or are there known diseases that have an above average effect on fulfilling the roles of the EEP?*

  Osphronemids are susceptible to many of the same infections/parasites that are common in fish under human care, including mycobacteriosis, *Columnaris* infection, *Dactylogyrus*, *Oodinium,* etc. I am however unsure if these are expected to have an above-average effect on fulfilling the roles of the EEP.

- *What is the expected estimated number of individuals and institutions required to fulfil the selected roles? (this question will be answered in detail during the LTMP session for the taxon, but if some indication of scale is clear already, this should be stated here)*

  Estimated: 500 individuals held across 10 institutions (~50 per institution). This is to account for potential population crashes, and to maintain a reasonable amount of gene variability. Deleterious effects of inbreeding have been reported as quickly as in F2 progeny.

- *Is this EEP intended to include rearing of wild eggs/young (i.e. head-starting)?*

  Potentially in the future, yes.

- *Is this EEP intended to include ex situ breeding?*

  Definitely yes.

- *Is there likely sufficient expertise for this, or a model, taxon to achieve the roles of the programme and provide conditions for good welfare? Please indicate if Best Practice Guidelines already exist and if yes, include publication date.*

Definitely yes. Certain species of osphronemid have long histories of human care, and some of the hardier species are farmed in large numbers under human care (which brings its own threat to related species in the form of biological invasions and hybridisation risk...). Specialist hobbyist interest in the family has also resulted in there being substantial amounts of information available on the internet and through groups such as the Parosphronemus Project.
Best Practice Guidelines for the genus *Parosphromenus*, a collaboration between Parosphromenus Project and Chester Zoo, is underway.

- *Will (non-)breeding and transfer recommendations be issued? If yes, with what frequency? (naturally problems will need to be solved throughout the year, but with what frequency will recommendations be issued for the whole population at once)*

I can foresee such recommendations being issued, though of course it will depend on the exact species being discussed. Given the relatively short lifespans of many osphronemids, and the fact that there is often some level of attrition during transport, I imagine that most (if not all) transfers will require the receiving institution to breed the fish they receive. This will also be very important for maintaining genetic integrity, given the not-insubstantial risk of random occurrences (e.g., system/power failures, water quality crashes, infectious outbreaks, etc.) which have the potential to wipe out colonies unexpectedly.
Frequency of recommendations will also vary depending on the species and its demographics within the EEP at any given time.

- *Do you anticipate that the EEP population will be (largely) closed or will there be regular planned additions of individuals? In case of the latter, will this be for genetic and/or demographic reasons and what will be the source (other ex situ sources and/or from the wild)?*

I anticipate that there will be a need to bring in individuals on a regular, planned basis, at least in the first few years, for most range-restricted species. This will be mainly for the sake of capturing and maintaining genetic variability.

Of course, in cases where a starting founding population is large enough and the captive population is stable and maintained in a way that maximises genetic variability, this may not be needed.
When possible, ex situ sources will be used; sourcing from the wild should only be done when properly and sufficiently justified.

- *Do you expect genetic and demographic management in this EEP to be individual and/or group-based?*

I expect management in this EEP to be group-based and/or population-based, given the difficulty of identifying and tracing specific individuals and their pedigrees. This is especially true for the smaller, shyer species.

- *Do you expect genetic management in this EEP to be based on pedigree analysis, group history analysis, and/or molecular genetics?*

I expect it to be based on a combination of group history and molecular genetics.
Group history would be the single easiest way of genetic management, and can be utilized in species for which taxonomy is unambiguous and we have reason to be confident that populations are not closely related. In these cases, we can turn to molecular genetics only when there is a specific need/want to assess the genetic health of the ex situ population at a particular point in time.
However, for species complexes for which taxonomy is unclear and/or we are unsure of relatedness (e.g., certain *Parosphromenus* sp.) molecular genetics could turn out to be the most efficient and accurate way of assessing species limits as well as overall population genetic health.
Additionally, given the rate at which costs of applying molecular tehniques are dropping, it may not be long before they become affordable enough to be utilized much more frequently.

- *Do you anticipate, or proactively plan for, biobanking and/or assisted reproduction to be key components of this programme?*

I do not anticipate at this point that assisted reproduction will be a key component of this programme, though I do see a wealth of research applications for biobanking in the form of tissue sample collection for molecular genetics. These sample collections should however ideally only be done when individuals expire for other reasons. Given how sensitive/delicate some of these species are, tissue sample collection even from healthy individuals could end quite badly.

- *Do you anticipate certain national or international legislation to form a particular hindrance (more than average) to achieving the roles of your EEP (e.g., CITES, BALAI, governmental ownership, etc.). If so, explain how.*

  It would depend on the species under discussion, especially if augmentation from wild populations is deemed to be necessary. Care must be taken to ensure that the procurement of any individuals for the EEP is done so in full accordance with the prevailing legal requirements of each involved country.

- *Are there any other issues/plans related to in situ conservation support that you feel should be mentioned and are not evident from the role description of the EEP?*

  Not at this moment.

- *Is there a research component/aspect to the EEP that is expected to have important consequences for the design of the EEP programme (e.g. housing and husbandry of a significant proportion of the population, etc.)? If yes, explain.*

  I believe that the majority of the genera within the family has at least one species being maintained and bred successfully by aquarists, which puts us in a good starting place as far as husbandry research is concerned. That said, I can foresee husbandry research being needed for the more sensitive species, and of course for certain species complexes, underlying taxonomic uncertainties will need to first be ironed out (using integrated molecular and morphological approaches, for reliability).

- *Do you anticipate there to be any sizeable political, social, or public conflicts of interest related to the EEP programme and how do you plan to deal with them?*

  I do not foresee such conflicts at the moment.

- *Any important additional programme characteristics that you would like to mention?*

  None that I can think of.

6. References (if any)