

Summary Sheet

Meeting dates:	Friday, July 20, 2018 - 8:30 A.M.
Agenda item:	Petitions – Listing Status for <i>Xenopus Clivli</i> and <i>Xenopus Amieti</i> (African Clawed Frogs) - Decision
Presenter(s):	Allen Pleus, Aquatic Invasive Species Unit Lead

Background summary:

The Fish and Wildlife Commission (Commission) received two petitions to change the classification of *Xenopus clivli* (common name Eritrea or Peracca's clawed frog) and *Xenopus amieti* (common name "Volcano clawed frog"), which are often lumped into the *Xenopus* common name of "African clawed frogs" due to native range. The petition is to change their classification from prohibited level 3 species to a regulated type A or regulate type B species (current classification options under RCW 77.135.030). The petitions were submitted by Mr. Paul Rudnick who is the owner of Three Rivers Mail Order Corporation and he sells this species through his "Grow-a-Frog" and "Live Cycle" kits (see attached web examples). The prohibited classification covers all members of the genus *Xenopus* and was originally adopted in 2004 (current listing under WAC 220-640-050). Definitions important to these petitions include:

- RCW 77.135.010(13) "**Invasive species**" means nonnative species of the animal kingdom that are not naturally occurring in Washington for purposes of breeding, resting, or foraging, and that pose an invasive risk of harming or threatening the state's environmental, economic, or human resources. Invasive species include all stages of species development and body parts. They may also include genetically modified or cryptogenic species.
- RCW 77.135.030 (1)(c) Species classified as **prohibited level 3** pose a moderate to high invasive risk"
- RCW 77.135.030 (2) [**Regulated type A species**] "are species that pose a low to moderate invasive risk that can be managed based on intended use or geographic scope of introduction, have a beneficial use, and are a priority for department-led or department-approved management of the species' beneficial use and invasive risks."
- RCW 77.135.030 (3)(a) "Species managed as **regulated type B** pose a low or unknown invasive risk and are possessed for personal or commercial purposes, such as for aquariums, live food markets, or as nondomesticated pets."

Mr. Rudnick states in his support letters that a rule change is necessary for the following reasons (X. clivli p.4 items A-B; X. amieti p.5 items A-C):

- A. "To protect native Washington State amphibian populations from predation and Ranavirus, B.d. and Bsal pathogens.
- B. To allow for the far superior educational experience offered by observing transparent tadpoles.
- C. To raise awareness of declining worldwide amphibian populations by literally allowing teachers and students to save a (near threatened) endangered species in classroom!"

Mr. Rudnick's petition supporting reclassification is based on the following main points:

- 1) *X. clivi* and *X. amieti* species do not meet the high invasive risk threshold of the states prohibited classification and he is certain that they are not invasive (*X. clivli* & *X. amieti* multiple notations);
 - 2) His frogs are all captive bred and isolated from other species (*X. clivli* & *X. amieti* p.1);
 - 3) He asserts his frogs as pathogen-free for the following major amphibian diseases: *Batrachochytrium dendrobatidis* (Chytrid fungus), *Ranavirus*, and *Salmonella* - this certification is unique in the nation (*X. clivli* & *X. amieti* p.1);
 - 4) These species meet the educational needs of students and K-12 teachers for tadpole to frog
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- metamorphosis curriculum requirements (*X. clivli* & *X. amieti* p.1);
- 5) His frogs are only available as direct purchase to schools and homes that avoid potential cross-contamination with other species in pet/aquarium stores (*X. clivli* & *X. amieti* p.2);
 - 6) Educators, S.T.E.M. (Science, Technology, Engineering, and Mathematics) coordinators, and school district budget directors depend on Growafrog Kits to facilitate education and foster responsible learning (*X. clivli* & *X. amieti* p.3);
 - 7) Use of these kits reduces invasive species and amphibian disease risks as opposed to public using live species from the wild or pet/aquarium vendors (*X. clivli* & *X. amieti* multiple notations);
 - 8) He asserts, "A 'blanket' prohibition of all species of *Xenopus* is unnecessary and in our opinion harmful to native amphibian and salamander populations in Washington" (*X. clivli* & *X. amieti* p.4);
 - 9) Use of alternative frog species *Hymenochirus sp.* (African dwarf frog classified as regulated type B) is "untenable" due to risk of spreading salmonella, Chytrid fungus, and *Bombina mictodeladigitora* (Bsal) diseases to humans and other amphibians and other reasons (*X. clivli* & *X. amieti* p.9-12).

Department staff have reviewed Mr. Rudnick's petitions and greatly appreciate his interest in providing "a superior educational experience," the steps he has taken to prevent the spread of invasive species and amphibian diseases, and his explanation of the benefits of these species. However, we have the following concerns:

1. In discussions with Mr. Rudnick prior to his petitions (see attached letter of August 18, 2017), we noted that the Department can issue a permit for the scientific research or display of a prohibited species under WAC 220-640-100, but only to a Washington State institution that can ensure they are confined to a secure facility. We cannot provide such a permit to a vendor as they cannot ensure the end-user meets the confinement requirement. To date, no institution has submitted a petition for use of these species.
 2. Mr. Rudnick acknowledges two major reasons for Department staff concern:
 - a. one vendor providing certified disease-free *X. clivli* and *X. amieti* frogs is insufficient protection - he states (in regards to regulated African dwarf frogs, *X. clivli* & *X. amieti* p. 10), "We can supply non-invasive pathogen free tadpoles of *Hymenochirus* however due to co-mingling the effort is mute if our pathogen-free frog is housed in the same tank as an infected frog"; and
 - b. a vendor cannot control end-user potential for release - he states (*X. clivli* p.14; *X. amieti* p.15), "it is simply reality based that some people are 'releasers' and that the frogs we supply...are 'going to be released'."
 3. Mr. Rudnick provides evidence that *X. clivli* (p.13-18) and *X. amieti* (p.14-17) are not invasive in Washington State's environment, but the evidence is based mostly on Mr. Rudnick's personal assessment.
 4. Department Policy 5310 for Managing Invasive Species states that "prevention is the 'gold standard' when dealing with invasive species" – this is a precautionary principle where species classified as prohibited must be proven through scientific evidence they do not meet the definition of prohibited level 3 species.
 5. Another *Xenopus* species previously considered not a high invasive risk, *X. laevis*, currently infest at least six known water bodies in the state (discovered in 2015); we have removed over 6,200 *X. laevis* to date requiring the investment of over 3,100 hours of staff time resulting in a cost to the Department and local stakeholders of over \$200,000 (staff time, supplies and equipment) to conduct prevention, control, and eradication management actions (see attached flyers).
 6. There is no standard criteria or process to add, remove, or amend species on the prohibited or regulated classification list, or resources to meet the legislative directive under RCW 77.135.030(5) that states, "Prior to or at the time of classifying species by rule as prohibited or regulated under subsections (1) and (2) of this section, the department, in consultation with the invasive species council, must adopt rules establishing standards for determining invasive risk
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levels and criteria for determining beneficial use that take into consideration environmental impacts, and especially effects on the preservation of native species, salmon recovery, and threatened or endangered species.”

Staff recommendation:

- A. **Deny the petition request** – maintain classification as prohibited level 3 species for the following reasons:
- Department Policy 5310 Managing Invasive Species states that “prevention is the ‘gold standard’ when dealing with invasive species” – once it has been listed as prohibited, there is a high burden to prove it does not pose a moderate or high invasive risk.
 - An alternative pathway is possible for limited use of prohibited level 3 species for scientific research or display by a permit from an institution that can ensure they remain confined to a secure facility;
 - Reclassification opens possession, sale, transfer of these species to all Washington citizens and vendors worldwide that cannot certify their product as disease-free or that the species will not become cross-contaminated or released into the wild;
 - Washington State is currently expending significant resources to manage an invasion of another species of *Xenopus* that was formerly not considered likely to become permanently established; and
 - The Department does not have the resources, standards, or process as directed by the legislature (RCW 77.135.030(5)) to research and address invasive risk on a species-by-species approach.

Policy issue(s) and expected outcome:

Amending the classification of *X. clivli* and *X. amieti*, for the reasons proposed here, would set a very low precedent for other’s to petition the Commission for amending the classification of other prohibited species on a case-by-case basis.

Fiscal impacts of agency implementation:

No impact if petition denied. Unknown costs if petition approved to conduct public rulemaking and research risks of petition species.

Public involvement process used and what you learned:

The Commission has received these petitions requesting amendments to the prohibited level 3 classification list. No public involvement process was used in review of the petitions.

Action requested and/or proposed next steps:

Department staff recommend the Commission deny these petitions to amend the classification of *X. clivli* and *X. amieti*.

Draft motion language:

Motion: I move to deny the petition as presented by staff.

Is there a “second”?

If so, then motion maker discusses basis for motion; other Commissioners discuss views on motion; amendments, if any, proposed and addressed

Post decision communications plan:

Commission staff will provide a letter to the petitioner with the final outcome of the Commission decision regarding the petition.

Lacey African Clawed Frogs Invasive Site Management Plan: Update

Invasive Species Management Plan: The first detection of *Xenopus laevis* (African clawed frogs or “ACF”) in the Lacey, Washington, storm water ponds was July 15, 2015. WDFW continues to assist landowner City of Lacey in the removal of ACF from their three ponds in coordination with the U.S. Fish and Wildlife Service, the Department of Ecology, the Washington Invasive Species Council, and Saint Martin’s University. Total ACF captured to date in all three ponds is **6,207**. Total number of all species captured to date in the smallest Pond 1 includes:



Pond 1 Site	ACF	Bullfrog	Native	Goldfish	Total
2015-pre Salt	3,009	200	18	1,123	4,350
Salt Phase I	412	1	237	9,497	10,147
Salt Phase II	101	2	21	174	298
Total	3,522	203	276	10,794	14,794

Pond 1 salt treatment – Phase I: Toxicology research provided by Dr. Jackson Gross (Smith-Root Inc.) found that increasing salinity to 16 parts per thousand (ppt) for at least 24 hours was lethal for ACF. Based on this information, WDFW and the City of Lacey agreed to attempt an eradication of ACF from Pond 1 using salt (sodium chloride). The use of salt is covered under WDFW’s AIS Management General (NPDES) Permit and an experimental use permit for salt as a pesticide was obtained from the Washington Department of Agriculture. Effectiveness of the treatment is dependent upon having a period of no precipitation. We were within days of attempting the eradication in September 2016 when fall rains began. The long dry spell during the summer of 2017 provided the next opportunity to apply the treatment and the experimental use permit was reissued for an August application. Main actions include:

- Aug. 9: City of Lacey dedicated 5 staff and used their 6 inch pump to reduce the water level down below standard outflow pipe to calculated salinity for salt application at tonnage; an interior containment barrier was erected with help from Washington Conservation Corps (WCC) and Americore volunteers.
- Aug. 10: City of Lacey dedicated 6 staff and used their winter road salt supplies (approved in permit) to create the saline solution and delivered 8 tanker trucks of brine (2,000 gallons each); salinities of 16 ppt were measured around the pond by 1:45pm; a multi-disciplinary team of 8 people from WDFW (Fish, Habitat, and Wildlife program staff), WCC, and Americore volunteers used dip nets to collect frogs, fish, and other species from the pond; as salinity increased, ACF, Rough-skinned newts (RSN), and Goldfish became active and readily observed near surface – high goldfish numbers and breadth of sizes were unexpected; many ACF were captured trying to leave the pond, but stopped by the inner barrier fence; Dr. Marc Hayes (WDFW amphibian specialist) led data collection efforts (size, sex, life stage, etc.) on 787 of the specimens captured including - 353 ACF, 234 RSN, 196 Goldfish, 1 Bullfrog (non-native), 2 red-legged frogs (native), and 1 surprise Black Crappie fish (non-native); remaining Goldfish were only counted.
- Aug. 11: City of Lacey applied an additional 2 tanker trucks of brine to hit low salinity spots and locations where ACF were finding refuge around the stormwater input culvert. WDFW conducted post-treatment clean-up and collected an additional 59 ACF and 425 goldfish. Salinities of 16 ppt were measured around the pond at 1:45pm; a few ACF and goldfish were observed still alive at this time.
- Aug. 13: Unfortunately, overnight rain (after 59 days of no precipitation) raised water level 12-18 inches and salinity was reduced to 5 ppt.

Pond 1 salt treatment – Phase II: Live ACF and goldfish continued to be observed post phase I treatment, so a second round of salt treatment was implemented. Assumption is that remaining ACF found refuge from salinity in muddy substrate and rain diluted salinity to tolerable levels. Applied second treatment August 22
 Contact Allen Pleus, AIS Unit Lead, for more information at: Allen.Pleus@dfw.wa.gov or 360-902-2724

with extensive effort to bring salinity back up to 16 ppt and saturate substrate with brine down to clay liner (6-12") to eliminate potential refuge. Total count from phase II was: 101 ACF; 2 bullfrogs; 174 goldfish; and 21 native species (red-legged frogs and rough-skinned newts). We believe eradication was achieved.

Pond 1 post-treatment monitoring: WDFW plans to deploy traps to monitor the effectiveness of the treatment for 1-3 months depending upon capture rates and precipitation/pond levels.

Ponds 2 & 3: No trapping or other management actions are planned at this time due to resource limitations. We will continue to work with the City of Lacey to maintain containment fencing and removing debris from blocking overflow outlet to prevent barrier breaching through emergency spillways.

Ranavirus: Testing by WDFW's Molecular Genetics Lab for the highly virulent amphibian pathogen confirmed that ACF from the infested ponds are positive for ranavirus; based on internal and external validation of results by third party labs. Additional DNA sequencing to determine which, if any, of 13 known (published) ranavirus strains this might be has been delayed due to resource limitations. Knowing the strain will help identify which species (amphibian, reptile, fish) are most at risk.



Lacey African Clawed Frogs Invasive Site Management Plan: Update

Invasive Species Management Plan: *Xenopus laevis* (African clawed frogs: "ACF") were first detected in the Lacey, Washington storm water ponds was July 15, 2015. WDFW continues to assist landowner City of Lacey in the removal of ACF from their three ponds in coordination with the U.S. Fish and Wildlife Service, the Department of Ecology, the Washington Invasive Species Council, and Saint Martin's University. Total ACF captured to date in all three ponds is **6,203**. Total number of all species captured to date in the smallest of the three ponds, Pond 1, includes:



Site	ACF	Bullfrog	Native	Goldfish	Total
Pond 1	3,518	202	278	10,794	14,792
Pond 2	2,223	3,250	131	0	5,604
Pond 3	462	618	193	44	1,317
Total	6,203	4,070	602	10,838	21,713

Pond 1 salt treatments: Phase I was conducted on August 9-11 and Phase II was conducted August 22-23 which raised the salinity level of Pond 1 to the target 16 ppt. A total of 508 ACF, 2 bullfrogs, 260 native species (all except one were rough-skinned newts), 9,670 goldfish and one Black Crappie were removed during this period. Initial assessment of treatment results is that using salt on the larger ponds would not be effective due to permitting and difficulty in saturating sediments to toxic levels.

Pond 1 post-treatment monitoring: WDFW removed the inner fencing after a couple days and deployed traps to monitor the effectiveness of the treatment starting in October 2017.

- Salinity measurements: Dropped below 16 ppt sometime in September. August 31st reading slightly above 16 ppt; on October 31, salinity read slightly below 1 ppt.
- 6 total trapping days during the period of October 10 to November 3.
- On November 3, WDFW captured one ACF in a trap – no other species were seen in traps or in water.
- The ACF was an adult male. Possible reasons for it being in the pond include:
 - Survived treatment by burrowing in low salinity mud w/in treatment area – considered highly unlikely as crews extensively saturated substrate with brine during Phase II, salinity levels remained lethal in most parts of the pond until August 31 (9 days), and normal breathing requirements would necessitate exposure and contamination of mud refuge.
 - ACF escaped treatment between inner treatment area and outer containment barrier during Phase II – considered moderately unlikely, unless prior Phase I treatment triggered movement to the surrounding cattail area and dormancy. Extensive movement through cattails during treatment and perimeter fence monitoring found no frogs outside of inner treatment area.
 - Came from upstream of storm water ingress pipe where treatment added next to road stand pipe – assumption was that ACF migration upstream from infested pond would end at first sediment trap/junction (from pond) where elevation from ingress to egress pipes prevented further expansion due to poor ACF climbing ability, and adding brine to second stand pipe near road would provide a sufficient treatment buffer. If assumption was incorrect or originating population came from upstream, they may now be migrating downstream into pond. Extensive 2016 pre-surveys of upstream open storm water basins around parking lots and on St. Martin's campus did not detect any other populations, so difficult to assess.
 - Migrated through containment barriers from other ponds – considered moderately unlikely.

- Was transported by an animal or human from outside Pond 1 – considered possible. If someone found it hopping around outside the Pond 1 fence after escaping from infested Pond 2, they may have put it inside the Pond 1 fence.
- New aquarium dumping or malicious mischief as reason to add new ACF - considered highly unlikely.

Next Steps:

- **Pond 1:** Additional trapping and water quality measurements will resume in January as weather allows to see if more ACF exist in the pond. Current 2018 plan is to maintain containment and develop a long-term management strategy and funding proposal for the 2019 legislature.
- **Ponds 2 & 3:** No trapping or other management actions are planned at this time due to resource limitations. We will continue to work with the City of Lacey to maintain containment fencing and removing debris from blocking overflow outlet to prevent barrier breaching through emergency spillways.
- **Ranavirus:** Continuing to determine if funding exists for testing by WDFW's Molecular Genetics Lab to determine which, if any, of 13 known (published) ranavirus strains this might be. Knowing the strain will help identify which species (amphibian, reptile, fish) are most at risk.



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

Mailing Address: P.O. Box 43200, Olympia, WA 98504-3200 • (360) 902-2200 • TDD (360) 902-2207
Main Office Location: Natural Resources Building, 1111 Washington Street SE, Olympia, WA

August 18, 2017

Mt. Paul Rudnick
Grow-a-Frog
15520 Cortez Boulevard
Brooksville, Florida 34613-6151

Dear Mr. Rudnick,

Thank you for contacting the Washington State Department of Fish and Wildlife (Department) with your request for an Aquatic Invasive Species (AIS) Permit to allow the general importation and possession of *Xenopus clivii* and *Xenopus amietii*, both classified as prohibited species in Washington State under WAC 220-640-040. The Department appreciates your interest in providing live frog products for biological education to residents of our state in your Grow-a-Frog kits. Education is an important tool to connect children and adults to nature, illustrate the complexity of biological life, and emphasize the need to protect it.

However, the Department respectfully disagrees with your views on the invasive risk of *Xenopus sp.* and the potential for release and establishment in our state waters. For example, we are currently battling several infestations of *Xenopus laevis* that have also tested positive for ranavirus, a highly virulent pathogen that can spread to other species. In one of these locations, we have captured over 6,100 *Xenopus* to date which has cost the state and landowner over \$120,000 in staff time (2,700 hours) and supplies to manage. This effort is ongoing and not expected to end soon as invasive species are very difficult to eradicate once established.

In regard to your request to allow importation and possession of a prohibited species, Washington State laws and rules limit the ability of the Department to issue an Aquatic Invasive Species (AIS) Permit for scientific research or display only to educators and researchers who can maintain a secure facility that prevents the intended or unintended release of the species.

The Revised Code of Washington (RCW) 77.135.040(1) states that prohibited species "may not be possessed, introduced on or into a water body or property, or trafficked, without department authorization, a permit, or as otherwise provided by rule." The rule providing direction on permitting import/possession of prohibited species for scientific research or display purposes is Washington Administrative Code (WAC) 220-640-010(2)(b), which requires confinement in a "secure facility." The Department interprets the term secure facility to mean a laboratory in a higher academic or scientific research institution. In very limited situations, this could include a K-12 institution. Under these regulations, educators and researchers from those facilities can apply to the Department for an AIS

Mr. Paul Rudnick
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Permit to import/possess the specified prohibited species - and must demonstrate their ability to meet the security requirements.

You are welcome to request a rule change for the classification of one or more *Xenopus sp.* by submitting a petition to the Washington State Fish and Wildlife Commission. Please contact Tami Lininger at Tami.Lininger@dfw.wa.gov for more information on the petition process as necessary. Given the concerns that Department staff have with the ecological impacts of this species, including potential risks to our native species from predation, diseases and parasites, we would have grave concerns about removing the prohibited status of *Xenopus sp.* at this time.

Sincerely,



Allen Pleus
Aquatic Invasive Species Unit Lead

cc: James Unsworth, Director
Ron Warren, Assistant Director, Fish Program
Tami Lininger, Executive Assistant, Washington Fish and Wildlife Commission

Encl: Fish and Wildlife Rule Change Petition

Screen shots from Grow-a-Frog web site (www.growafrog.com/)

Kit includes:

- see thru Grow-a-Frog tadpole 'ready to morph.'
- Fun & Fact Handbook
 - Larger habitat
 - Stage One food
- Nutri-Sand growth media
 - Serving spoon
- Our 4 way guarantees !!



Life Cycle Kit



The Growafrog Life Cycle Kit is our premier metamorphosis kit for education and science fair projects. It includes tadpoles in all 4 stages of metamorphosis... PLUS a little baby froglet 'just past morph'. This allows you to 'complete' your class project in one period - not weeks! Of course, you also care for and grow these remarkable see thru tadpoles to observe their metamorphosis - and to distribute tadpoles and frogs to individual students or groups.

Life Cycle Kits include the following: 1 juvenile tadpole, a hind limb tadpole, a front limb tadpole, a 'metamorphic climax' (1 week to frog stage) tadpole and a little baby frog PLUS tadpole food, a complete Stage Two Super Offer, 3 tadpole habitats.. PLUS Cindy Gay's wonderful Lesson Plan via download, Science Project Ideas AND a magnifying glass !! All for just \$39.95 + 24.95 shipping.

This very complete kit is an outstanding value and is offered for educational purposes, only.

