

From: [McBride, Michelle](#)
To: [Lysynski, Heather](#); [Edwards, Kevin](#)
Subject: RE: ECAC meeting agenda item
Date: Friday, June 10, 2022 1:18:02 PM
Attachments: [image001.png](#)

Hello,

I forwarded the brochure to our City Veterinarian and she has responded with the following:

The pamphlet has some great information about goldfish and how they are detrimental to the environment but I have concerns about the recommended methods of euthanasia.

Anesthetizing with clove oil, freezing, and Alka Seltzer are NOT considered humane, these recommendations should be changed to the humane methods recommended by the AVMA. The American Veterinary Medical Association recognises two humane methods for fish euthanasia – decapitation and MS-222. However, decapitation and pithing is technically challenging and rather unsightly, so I can only recommend MS-222.

I've copied the information below from this website - <https://companion-animals.extension.org/humane-methods-of-euthanasia-for-fish/> authored by Dr. Chen and Dr. Sharma. Please let me know if they would like any additional information.

Humane Methods of Euthanasia for Fish

Euthanasia is a common procedure offered for dogs, cats, rabbits, and other pets that are frequent patients to veterinary clinics. However, when it comes to fish, little information is readily available regarding the possibility of euthanasia.

Owners must conduct their own research, typically by visiting fish forums, fish websites, and other sources to acquire information. Although these sources can provide some answers, the information is not always accurate and may represent only the opinions of other fish owners. Fortunately, the *AVMA Guidelines for the Euthanasia of Animals* report published in 2007, accessible online at http://www.avma.org/issues/animal_welfare/euthanasia.pdf, reviewed and recognized humane methods of animal and fish euthanasia.

Listed below are some of the more practical and AVMA-recognized methods of euthanizing fish.

Methods

The American Veterinary Medical Association (AVMA) recognizes two humane methods of euthanasia for fish: use of **tricaine methanesulfonate**, commonly referred to as **TMS** or **MS-222**, and **decapitation**.

- TMS is a white, powdered muscle relaxant that is mixed directly into the water. The AVMA suggests that larger fish be flushed on the undersides of the gills with TMS. TMS is acidic and needs to be buffered with sodium bicarbonate (baking soda) in the aquarium to maintain a neutral pH level. Without being buffered, the acidity of the compound can burn the fish and cause unnecessary distress. TMS can be purchased as is or as part of a product specifically made for fish euthanasia.
- Decapitation is also deemed humane as long as it is followed by **pithing**, which is the destruction of the brain. After decapitation, insert a probe into the head and swish it around to destroy the central nervous system. Similar to a lobotomy, pithing is done because, unlike mammals, fish can remain conscious after decapitation due to their unique physiology. Cranial concussion, or stunning, prior to decapitation and/or pithing is also recommended. However, since this method requires skill and precision that might be challenging.

Some methods of euthanasia commonly discussed by fish owners include the use of clove oil, freezing, and carbon dioxide. None of these are recommended. Freezing has been shown not to induce loss of consciousness, so it may still cause distress to the animal. Carbon dioxide in water causes acidity in the water, and has been banned as a method of euthanasia in aquaculture in most countries because of the negative impact it has on fish welfare.

Based on the recognized methods of fish euthanasia, the simplest and most effective method is the use of TMS. Decapitation and pithing is a cost-effective, but potentially more challenging, method. Freezing and carbon dioxide use should be used only as a last resort. Effective euthanasia can reduce a beloved fish's prolonged suffering.

Pauline Chen and Daniela Sharma, Ph.D. – Rutgers University

Thanks,

Tracy Satchell, DVM, MS (Shelter Medicine) [she/her]



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As part of our ongoing efforts to stop the spread of COVID-19, the City of London has made changes to many City services. Visit our [website for the latest information about City service and COVID-19](#).

From: Brendon Samuels <bsamuel2@uwo.ca>
Sent: Thursday, June 2, 2022 3:35 PM
To: Lysynski, Heather <hlysynsk@London.ca>
Cc: s.levin s.levin <s.levin@sympatico.ca>
Subject: [EXTERNAL] ECAC meeting agenda item

Hi Heather,

Sandy asked me to email you about adding an item to the next ECAC meeting agenda. This is a carryover from the previous EEPAC meeting, related to the education pamphlet about Goldfish and the environment. A few changes have been made to reflect feedback from the group at the last meeting.

I am no longer a member of this committee (but am a member of ESACAC) so I'm not sure if

the procedure is different in this case. I will not be attending ECAC meetings regularly moving forward, but can attend meetings on an as-needed basis if there is an item up for discussion that could use my input.

I am sharing this now so that staff have an opportunity to review the current draft of the pamphlet and pass it along to Corporate Communications for feedback. I have not heard anything back from City staff outside of the last EEPAC meeting.

Thank you,

Brendon