

[Jackson Park Lagoon Restoration FAQs-2014-prepared by Frank Veraldi, USACE

Question: What fish poison would be used for Jackson Park Lagoons?

Response: Rotenone is a naturally occurring chemical with insecticidal, acaricidal (mite and spider-killing) and piscicidal (fish-killing) properties, obtained from the roots of several tropical and subtropical plant species belonging to the genus *Lonchocarpus spp.* or *Derris spp.* It is a selective, non-specific insecticide, used in home gardens for insect control, for lice and tick control on pets, and for fish eradications as part of water body management. It is a contact and stomach poison to insects, that causes them to stop feeding almost immediately, eventually killing them. Rotenone exerts its toxic action by acting as a general inhibitor of cellular respiration. In gill breathing animals, it disallows oxygen to be absorbed for cellular respiration. This plant-derived piscicide has been known for centuries by Asian and Central and South American peoples, whom would harvest the roots, crush them, wave them in the water, and harvest their fish dinner. See links below for more facts and USEPA registration below.

<http://www.newmexicotu.org/Rotenone%20summary.pdf>

<http://www.pan-uk.org/pestnews/Actives/rotenone.htm>

<https://www.sdstate.edu/nrm/outreach/pond/upload/Rotenone-Starting-Over-January-February-2008.pdf>

http://www.azgfd.gov/h_f/documents/ROTENONE%20FAQ%20committee%20final%20report%20section%201-6-12.pdf

Question: What side effects of the poison could we see?

Response: There would be no side effects to any organism that does not have gills due to the very short period the Rotenone would be present in the Lagoon environment. There were various different types of toxicological studies performed on animals, and the amounts used to remove fish are well under the doses to affect any organisms aside of those with gills. See the links in the preceding question for more information.

Question: Is poisoning fish in ponds a half century behind the accepted practices of the times?

Response: Actually, this practice is about 5 centuries old; however, some ancient discoveries have withstood the test of time. In our global environment, new species are constantly introduced into new environments where they have significant negative impacts ecosystems, other organisms and often have a negative impact on biological integrity and stability of native systems. In fact, *not* controlling these species is definitely a half century behind the times. As humans are starting to realize that harsh manmade chemicals are poisoning us more so than the targeted plants and animals, we are reverting to more natural remedies to problems. Some terrible chemicals were used such as DDT, and some still used today, such as Atrazine, Paraquat, Camphor, etc. The use of Rotenone in this project is a deliberate alternative to more harsh chemicals. As described above, it is a natural, plant-derived substance that was employed by Native South Americans to catch fish for consumption. Sometimes age old techniques are the right choice vs. the modern day poisons, destruction and ignorance how our planet works.

Question: How long will the Rotenone remain active?

Response: The Rotenone would completely dissipate in 3 to 4 days.

Question: Will the poison kill the frogs, turtles, birds, amphibians and human's drinking water?

Response: Turtles and birds do not have gills, so they cannot be affected. The small amount of fish that would be killed could also be eaten by birds and turtles with no effect. The carcasses and moribund fish would be cleaned up immediately by the contractors and Corps personnel, but this is not because any danger they would have on other wildlife, it is mostly for human aesthetics and olfactory purposes. Amphibian larval stages do have gills, however, so the timing of the Rotenone application, which would be before tadpoles and efts hatch, is critical. The successful treatment of the ponds at Indian Ridge Marsh at 122nd Street and Torrence Ave. in 2011 actually caused the frog population to explode. Removing fish from a system removes amphibian predators; therefore they go unchecked and the population explodes.

It is not recommended to drink water out of Jackson Park Lagoons since the primary source of water are storm sewers and runoff from dirty roads and parking lots. Since the East & West Lagoon will be drawn down with pumps to accommodate bank grading and fish removal, Rotenone will not be able to enter Lake Michigan.

Question: Why does the whole pond have to be poisoned to remove Common Carp (Cyprinus carpio) when there are a variety of more attractive fish present?

Response: There are actually very few fish in the Jackson Park East & West Lagoons due to environmental conditions. In the winter of 2013/2014, the extreme cold and ice cover resulted in a significant fish kill in the Lagoons of Jackson Park. A fish survey conducted by Corps biologists on 15 July 2014 revealed just three species of fish in the lagoons, and only one individual per species. Species collected were one Blackstripe Topminnow (*Fundulus notatus*), one Black Crappie (*Pomoxis nigromaculatus*), and one Green Sunfish (*Lepomis cyanellus*), all under 2-inches in length. In addition to the incredibly cold winter, there are currently no aquatic plants that fish need for reproduction and there is overfishing of game species (Largemouth Bass, Channel Catfish). Currently, game fish cannot reproduce in the lagoons, due to the lack of vegetation, and the ILDNR continually stocks these species every year to keep up with fisherman taking them out of the system.

The Jackson Park restoration plan will first focus on the removal of existing fish, including Common Carp that are bottom dwellers that uproot establishing plants and stir up mud, reducing water clarity and quality. Small, native fish species that are good food sources for resident and migratory birds will be re-introduced immediately while aquatic plants and increasingly larger fish will be introduced over time as the restoration continues and appropriate habitat is restored. If we conducted the lagoon restoration without first removing these fish, there is a very small likelihood that the aquatic plants would survive and establish, and our efforts to restore the lagoon to a thriving aquatic ecosystem would be wasted.

The term "attractive fish" is a very subjective term, and depends who is using it. Fisherman would find certain species attractive while folks that care for birds would find a different suite of species more attractive due to the sustenance provided for birds. Ichthyologists have a different perspective of fishes than fisheries biologists, where ichthyologists would find only morphological and genetic nativity attractive whereas fisheries biologists would find genetically modified or bred fishes to get bigger for stocking and catching. A person visiting the Shedd Aquarium would find different species of fish "attractive" for different reasons as well, color, size, morphology, etc.

Question: Why eliminate fish when families are happily fishing there now?

Response: The fish are not being eliminated, but interchanged with different species. The species list provided above that shows what different fish will be in the Columbia Basin, East & West Lagoons and the South Harbor, as well as what they are good for. Families will be able to fish happily once a certain level of restoration is achieved in the East & West Lagoons, which may take up to three years. Fishing may continue unrestricted in the Columbia Basin, South Harbor and Lake Michigan. A plan will be developed in conjunction with the ILDNR to keep the several species of game fish in the East & West Lagoon restoration area continually stocked yearly to keep up with fisherman removing them from the system. Also, fishing regulations could be put in place by the Chicago Park District to protect the overharvesting of fishes in such a small pond.

Also, great care should be taken when consuming fish from highly urbanized areas and bodies of water. Common Carp should not be eaten unless bought from a clean fish farm, especially by women planning to bear children. Please see Lake Michigan Fish Consumption Advisories for fishes most commonly caught for food:

<http://www.idph.state.il.us/envhealth/fishadvisory/lakemichigan.htm>

Question: What compelling reason is there for such radical treatment of a perfectly normal ecosystem?

Response: Jackson Park East & West Lagoons were created by man for the Columbia Exposition in the late 1800s, and without human intervention, the Jackson Park lagoons would be sand dunes with no fish habitat. This history alone denotes that the once unique ecosystem was replaced with a park primarily for humans. The restoration plan at Jackson Park in general is to enhance, improve and create wildlife habitat while honoring the historical significance and for park visitors to experience nature and wildlife within the city. There are hardly any fish left in the Lagoons due to the winter fish kill, overfishing and degraded habitat. The primary reason that there fish are available every year in the Lagoons is because the ILDNR has a stocking program to support fishing. Common Carp are in the system because fishermen illegally stock them. The reason for removing Common Carp, at minimum for a period of 5 years, is to establish aquatic plant growth so several species of native fishes are able to reproduce naturally.

Question: Do frogs survive the winters in Chicago.

Response: Yes, amphibians and reptiles hibernate during the winter months. Some underground, some under water, some under leaf litter, and some in trees. Some species of frogs and juvenile turtles can become completely frozen and survive the winter via specialized hibernation biomechanics.

Question: What is the difference between game fish vs. regular catch and eat fish?

Response: Usually, they are the same thing, but differences can be identified. Certain anglers are only looking to catch fish for the thrill of the “fight”, and usually target species such as Largemouth Bass (*Micropterus salmoides*), Smallmouth Bass (*Micropterus dolomieu*), Northern Pike (*Esox lucius*), Muskellunge (*Esox masquinongy*). These fish can be eaten are delicious if captured from a clean body of water.

Question: Is the fish assemblage in the Columbia Basin, East & West Lagoon and the South Harbor the same or different?

Response: The species that will make up the fish assemblage in the Columbia Basin, East & West Lagoons, and the South Harbor will all be different, see **Jackson Park Fish Chart**. The Columbia Basin will have fishes stocked and provided by the ILDNR for fishing. The East & West Lagoons will have native fishes reintroduced, both game and non game fishes. This also includes several State Endangered & Threatened species such as the Banded Killifish (*Fundulus diaphanus*), Blackchin Shiner (*Notropis heterodon*) and Iowa Darter (*Etheostoma exile*). These rare fish will not come from natural populations since they are endangered, but from rearing ponds at Prairie Crossing for this exact purpose. The fishes in the South Harbor will be those that live in Lake Michigan