

Some thoughts on Apple snail control work and Three Mile Creek Invasives Plan.

RE: Meeting on 11-01-19 at AM/NS, Calvert

Our District V Office Fisheries staff would like to support the planned efforts on invasive apple snail control; however, see our role as more in consulting/advising information/research efforts for other NGO's/agencies, assisting in background as needed.

Our office has approximately 30 snail traps and stakes which we are happy to loan out (donate) to data collection team (??) for abundance monitoring purposes. We got them via USFWS who purchased from Van Dyke Environmental (i.e., Snail Busters). We are available to help train staff as data collectors, preferably on a one-time basis. My thoughts are, Larisa has mentioned data collection several times and feel she might have the staff built to do that work??

NOTE: For water modeling purposes, mean (average) monthly discharge flows at Ziegler Rd. gage #02471013 (discontinued), from January 2000 to September 2003, ranged from = 7.7 to 43.7 cfs. MAX flows in May-July were 27 to 359 cfs (these data not reviewed myself outside these 3 months). I have these reports if you want the MAX flow data for fall months which should be closer to base flow (approx. August-November).

NOTE: Based on a small-scale study of Apple snail egg masses (approx. 74 masses, by Lindsey. MacMillan, UAB), volumes measures of individual egg masses average 2525 eggs per clutch (mass), PER female. The MAX and MIN number of eggs per clutch ranged from 104 to 5667, respectively. Female snails lay approximately 1 egg mass per month during the warm spring to fall (March to November) months. SO, a lot of @^#%\$ eggs per female annually!!!

Will research potential of invasives species grants through USFWS/NOAA.

Will research alternatives to Chelated copper (looking into iron phosphate product similar to current submergent/instream-applied chemicals?). We applied NATRIX (by SePRO) brand, a liquid chelated copper product (5 applications) at 0.50 ppm for effective kills May-October 2013-2016. 0.3 ppm (2 applications) was not very effective at all. Could FERROX be applied in mass? When I queried, sales person had no definitive studies on large-scale control. Katie, as you asked, there is also Metaldehyde and Niclosomide used in snail control in Mississippi, but NOT sure they are licensed for use across U.S. or can be used in Alabama.

Interested in implementing an alternative approach to collecting apple snail egg masses; perhaps providing instruction on use of organic oil applications to isolate (smother) egg masses.

I feel apple snail control (elimination) is impossible in areas outside of (i.e., downstream of) the 2 Langan Lake pools (i.e., downstream TMC creek channel AND reservoir pools below Langan Lake Dam; tidal TMC, Spring Creek and One Mile Creek), given current state of waterways, plant abundance.

The invasives report ENVIROSCIENCE provided to MBNEP stated that our agency could possibly provide field assistance to study/collect fishes in the TMC (p 221) to examine extent of Tilapia

population....probably NOT! Our take is, we have done many collections in the TMC: We have collected nearly 30 Tilapia (50 – 286 mm TL) and this distribution shows reproduction. NOT surprising since Smith-Vaniz documented Tilapia in Alabama nearly 40 years ago. We have also seen them in creel buckets at Langan and collected in many bodies of water around Mobile. It is safe to say they have naturalized to public waters in the Mobile area. The report went on to state idea of stocking Blue Catfish (p. 30) in the TMC as a biocontrol. Like Redear Sunfish, they might be a predator of snails. I am skeptical of their efficacy, though there is some documentation. Stocking Blue Catfish is not a problem with our agency, though a permit would be required. We would prefer the stock of Blue Catfish came from Alabama waters, though.

That said, it will still be very unlikely to eliminate apple snails in **Langan Lake** unless there is:

1. Consideration of dredging which will eliminate or reduce plant beds AND their habitats (mucky, shallow soil at lake margins). It will also homogenize the lake margins allowing more effective control using chemicals.
2. Emergent plant control at lake nearshore margins is key to long term control of apple snails given their basic life requirement as egg mass substrates.
3. Consideration of chemical control in either or both chemical instream applications (copper or other) and bait (i.e., FERROX).
4. Hand-collection of adults, by trained and engaged long term staff, if performed, should be done in very regular intervals (Not less than every 1-2 days) across the entirety of ALL lake shorelines AND in both lake pools.
5. Collection of snail egg masses is difficult and as it slows walking collectors, workers *could* consider spraying organic oils (e.g., PAM, refined coconut – consider study of morpholine, organic “unrefined” coconut oil). We have some cans to donate if you want to consider this. I think since we are using minute amounts and they are considered organic materials, there should be no violation of use of these materials NOR need of commercial applicator license.