United States Geological Survey

Research Work Order 182

Final Report

DRY DOWN TOLERANCE OF THE FLORIDA APPLESNAIL (*POMACEA PALUDOSA* SAY): EFFECTS OF AGE AND SEASON

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Preface

The following report is the final deliverable for RWO 182 and consists of several manuscripts that have already been, or soon will be submitted to peer-reviewed journals. In addition, the report includes a first draft of a manuscript that describes the last experiment conducted under RWO 182, and the current version of the apple snail model. We decided to draft a single manuscript that combines the last dry down experiment (on hatchlings and juveniles) with the snail population model, but this could change after receiving comments on this and other manuscripts enclosed.

The timing of submittal is critical because some manuscripts will cite ones that we anticipate will be accepted for publication. For example, the manuscript on snail life history (chapter 3), will cite the manuscripts which make up Chapters 1 and 2 of this report. While writing the draft manuscripts, we realized that the one on life history had become cumbersome in its content, so we decided to pull out material for a separate shorter manuscript. We plan to make submissions of these manuscripts as follows (journals in bold):

1) "Collecting Florida applesnails (*Pomacea paludosa*) from wetland habitats using funnel traps" by Darby et al. (in review by the journal **Wetlands**)

2) "Temperature effects on Florida applesnail activity: implications for snail kite (*Rostrhamus sociabilis*) foraging success and distribution" by Stevens et al. (in review by the **Wildlife Society Bulletin**)

3) "Florida applesnail (*Pomacea paludosa* Say) life history: adaptations to unpredictable dry downs in the annually predictable dry season" by Darby et al. (intended for the journal **Wetlands**, this manuscript cites #1 and #2)

4) " Impacts of a winter lake draw down on Florida applesnail abundance", by Darby et al. (intended for the journal **Advances in Limnology**, this manuscript cites #1, #2, and #3).

5) "Size-dependent dry down tolerance of the Florida apple snail: implications for water management in Florida wetlands", by Darby et al. (intended for the journal **Ecological Applications**, this manuscript will cite #3 and #4) [All aspects of this manuscript are subject to change depending on co-author review and acceptance].

Co-authors have not given final approval of manuscripts 3 and 4. Manuscripts 3 and 4 have been sent to co-authors and other colleagues (e.g., Dr. R. Bennetts, Station Biologique Station Biologique de la Tour du Valat; Dr. C. D'Asaro, University of West Florida) for their comment. Manuscript number 5 is a first draft whose contents will be affected by the editorial process on manuscripts 1-4. The co-authorship is proposed. The authors listed must approve their inclusion; we believe each has played a critical role and warrants authorship. Formats for section headings, literature cited, figures, etc. may vary due to differences in format requirements for different journals. Figure headings were kept with the figures (when possible) for the purposes of this report.