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| PROJECT: East MullocH DraINAGE District STormwater rEstoration AND Habitat IMPROVEMENT |
| **Funding estimate: Annual CycLe of $7350** |
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| **LEAD ORGANIZATION: East Mulloch Drainage District** Alan Freeman, Supervisor, P.O. Box 511 Estero, FL 33928 |
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| **CONTact person:** Nora Demers Associate Professor of Biology Florida Gulf Coast University 33965 239 590-7211 |
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| **Anticipated dates of Project: October 1, 2010 to July 1, 2020** |
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| The goal of this project is to remove the invasive exotics plants and replant with native plants along the slopes on the main canals of the drainage district. The plantings will help stabilize the steep shoreline and provide an aesthetic littoral area along the edge of the permanently wet canal system. This stormwater improvement should improve the water quality of the collected stormwater runoff by filtering it through a series of linear constructed native plant zones that don’t require or allow fertilizer (in keeping with recently passed county fertilizer ordinance). The littoral zone will include native upland and wetland species planted along and in the canal that are known to help absorb excess nutrients.  This project is also anticipated to help restore habitat for native land and aquatic species that inhabit the creek/drainage system, and help provide an educative and aesthetic improvement for the residents of the community that should make them more aware and respectful of the native natural environment; therefore more willing to support future taxing increases to support maintenance funding for the drainage district.  When financial conditions improve, we hope to propose more significant stormwater restoration and habitat improvement for the East Mulloch Creek drainage basin. Stormwater improvement proposed include the maintenance and restoration of the existing approximately 19 miles of canal system by dredging and restoring the system to the originally planned size and depth of the stormwater system and upgrading the system with improvements proposed by a recently completed engineering study.  **The ultimate goals of these efforts are to improve water quality that suffers from degradation due to nutrient enrichment and other pollutants, to reclaim fish and wildlife habitat, and, perhaps most importantly, promote methods to continue to educate the public and enhance personal responsibility for ecosystems of the Mulloch Creek Basin.** |

**Proposed Budget:**

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| **Item** | **Amount requested from EMDD** | **Match provided (from FGCU students and Demers)** |
| Contract with tree removal company to remove invasive Melaleuca and Brazilian pepper (100-300 linear feet depending on the density of the invasive plants to be removed) | $6000 |  |
| Hand tools and gloves for removal of air potatoes and other smaller invasive plants, post hole diggers for planting, bins for yard waste etc | $350 |  |
| Native plants | $500 |  |
| Refreshments for volunteers | $500 |  |
| Organization, preparation of refreshments and transport to work location (Demers) |  | $500 |
| University Colloquium volunteers 500 hours at $17/hour |  | $8500 |
| **TOTAL** | **$7350** | **$9000** |

**II Management Plan and Time Line (annual cycle)**

Proposed project schedule / timeline:

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| --- | --- | --- | --- | --- | --- | --- |
| Task | Nov-Jan | Feb | Mar | Apr | May | June-July |
| Planning | XXX |  |  |  |  |  |
| Contracted removal of exotics | XXX |  |  |  |  |  |
| Hand removal of exotics |  | XXX | XXX | XXX |  |  |
| Native Planting\* |  |  |  | XXX | XXX |  |
| Maintenance |  |  |  |  |  | XXX |

\* The plants that will be used to help stabilize the shore line and steep bank include buttonbush, cypress near the water. For the midslope, species will include Wax Myrtles, Myrsine and Dahoon Hollies, *Conocarpus erectus*: Green Buttonwood, *Citharexylum spinosum:* Fiddlewood, and Sea Grape.These are all shrubs/small trees that are evergreen and all will take full sun to part shade and are multiple trunk that enhance their soil stabilization quality. Several drought tolerant plants that can be in full sun to partial shade for the driest, most elevated portions of the slope include Mimosa strigillosa: Sunshine Mimosa, Borrichia frutescens: Sea Oxeye Daisy, Ernodea littoralis: Golden Creeper, Saururus cernuus: Lizard's Tail, Fl. Privet, Scorpiontail, and White Indigo Berry. All of these have excellent soil stabilization attributes and will spread easily to fill in the area, stabilize the bank, provide habitat, and create a fertilizer-free buffer zone between the residential yards and the canals, with very little maintenance.