Survey of Emergent and Submerged Vegetation along the Bagdad, Florida waterfront

Prepared for:

Blackwater River Foundation

Prepared by:

Wendy Eash
Joel Worrell
Richard A. Snyder

Center for Environmental Diagnostics and Bioremediation (CEDB)
University of West Florida
11000 University Parkway
Pensacola, FL 32514
http://www.uwf.edu/cedb/
850-474-2060

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Introduction

One of the main purposes of the Blackwater River Foundation is to develop methods to reclaim, protect, preserve and restore portions of the Blackwater River Ecosystem. This project was funded in an effort to protect and preserve emergent and submerged vegetation on the portion of the Blackwater River that run along the bank of Bagdad, Florida (Figure 1). Data collected will provide the foundation with a comprehensive list of species and habitats found along the bank of the Blackwater River, and will serve as a reference for future development in the Village of Bagdad.

Figure 1 Freshwater marsh, Blackwater River, Bagdad, Florida

Materials and Methods

Data were collected along the southern bank of the Blackwater River from 30°36'25”N 87°02'30”W to 30°35'42"N 87°01'42"W. The area covered was divided into transects. Individual transect length was equivalent to the range of homogenous emergent and submerged vegetation species composition. Transect position end-points were documented using a hand-held GPS unit.

Once transects were established, substrate type and species composition for each transect were observed and recorded. Substrate type was determined using a sediment grab. Emergent vegetation was identified visually from a canoe or trolling boat, while a grappling hook and visual identification were used to determine submerged vegetation composition (Figure 2). Species present from each transect were grouped under dominant emergent vegetation, minor emergent vegetation, and submerged

vegetation. Transect Numbers, GPS coordinate, sediment type, and transect species composition were arranged in an Excel spreadsheet as a convenient reference.

Figure 2. *Sagittaria latifolia* among *Cladium jamaicense*, in freshwater marsh habitat, Blackwater River, Bagdad, FL.

Figure 3. *Juncus roemarianus* in freshwater marsh habitat, Blackwater River, Bagdad, FL.

Results

Dominant emergent vegetation species found in a majority of habitats surveyed along the bank of Bagdad included *Juncus roemarianus and Cladium jamaicense,* while the dominant submerged species was *Vallisneria Americana* (Table 1). Throughout all 22 transects taken *Cladium jamaicense* was the most commonly occurring emergent vegetation; present in 17 transects both to the north and south. *Juncus roemarianus* was another commonly occurring species; identified in half of all transects, six northern and five southern (Fig. 3). While *Ruppia maritima* was the dominant species in 1999, *Vallisneria americana* during our study was the most dominant species of submerged vegetation and was present in all transects which contained submerged vegetation. A total of 20 species were identified as having a significant presence as either major/minor emergent (16 species) or submerged vegetation (4 species).

Though there were several species found throughout the majority of the transects, some species were found only in a few transects. Species such as *Zizaniopsis miliacea* and *Sagittaria lancifolia* were only identified in one transect. Overall, the southern coordinates consisted of closely homogenous habitats while the northern habitats were more heterogeneous in structure, resulting in more frequently recorded transect points. The sediment type was uniformly mud, although some areas such as the old logging mill had wooden posts stuck in the sediment and there was cement on top of mud along the cement seawall.

Table 1 List of major emergent and submerged vegetation by transect, Bagdad, Florida

Transects	**Dominant Vegetative Species (Emergent, Upland)**	Transect Start Coordinates	Transect End Coordinates	**SAV Present**
North 1 Swamp Forest	*Magnolia virginiana, Myrica cerifera, Cyrilla racemiflora, Chamaecyparis thyoides, Cliftonia monophylla, Cladium jamaicense*	30°36'25" N 87°02'30" W	30°36'32" N 87°02'25" W	none
North 2 Swamp Forest	*Magnolia virginiana, Cyrilla racemiflora, Nyssa aquatica, Myrica cerifera, Cliftonia monophylla, Osmunda Regalis*	30°36'32" N 87°02'25" W	30°36'36" N 87°02'22" W	none
North 3 Swamp Forest	*Osmunda regalis, Myrica cerifera, Magnolia virginiana, Cyrilla racemiflora, Cladium jamaicense*	30°36'36" N 87°02'22" W	30°36'40" N 87°02'17" W	none
North 4 Marsh/Swamp Forest	*Cladium jamaicense, Hypericum nitidum, Sagittaria lancifolia, Nyssa aquatica*	30°36'40" N 87°02'17" W	30°36'41" N 87°02'11" W	*Vallisneria americana, Mayaca fluviatilis*
North 5 Marsh/Swamp Forest	*Cladium jamaicense, Cyrilla racemiflora, Myrica cerifera, Cliftonia monophylla, Eriocaulon lineare*	30°36'41" N 87°02'11" W	30°36'39" N 87°02'07" W	*Vallisneria americana, Potamogeton pectinatus,*
North 6 Marsh	*Hypericum nitidum, Cladium jamaicense, Phragmites australis, Sagittaria lancifolia, Pontederia cordata, Cyrilla racemiflora, Eriocaulon lineare*	30°36'39" N 87°02'07" W	30°36'40" N 87°02'07" W	*Vallisneria americana, Potamogeton pectinatus,*
North 7 Marsh	*Cladium jamaicense, Pontederia lanceolata, Typha latifolia*	30°36'40" N 87°02'07" W	30°36'40" N 87°02'06" W	*Vallisneria americana, Potamogeton pectinatus*
North 8 Marsh	*Myrica cerifera, Pontederia cordata, Typha latifolia*	30°36'40" N 87°02'06" W	30°36'39" N 87°02'05" W	*Vallisneria americana* (low density)
North 9 Marsh	*Typha latifolia, Pontederia cordata*	30°36'39" N 87°02'05" W	30°36'39" N 87°02'04" W	*Vallisneria americana* (low density)
North 9a Island 1 Marsh	*Hypericum nitidum, Cladium jamaicense, Pontederia cordata, Cyrilla racemiflora, Myrica cerifera, Eriocaulon lineare*	30°36'39" N 87°02'04" W	30°36'39"N 87°02'03" W	*Vallisneria americana*
North 9b Island 2 Marsh	*Hypericum nitidum, Cladium jamaicense, Juncus roemarianus, Pontederia cordata, Myrica cerifera, Eriocaulon lineare*	30°36'39"N 87°02'03" W	30°36'38" N 87°02'03" W	*Vallisneria americana*
North 10 Marsh	*Juncus roemarianus, Cladium jamaicense, Typha latifolia*	30°36'39" N 87°02'04" W	30°36'38" N 87°02'03" W	*Vallisneria americana* (low density)
North 11 Marsh	*Pontederia lanceolata, Phragmites australis, Typha latifolia, Juncus roemarianus, Sagittaria lancifolia*	30°36'38" N 87°02'03" W	30°36'38" N 87°02'02" W	*Vallisneria americana* (low density)
North 12 Marsh	*Juncus roemarianus, Cladium jamaicense, Sagittaria lancifolia*	30°36'38" N 87°02'02" W	30°36'38" N 87°02'02" W	*Vallisneria americana* (low density)
North 13 Marsh	*Phragmites australis, Cladium jamaicense*	30°36'38" N 87°02'02" W	30°36'38" N 87°02'00" W	*Vallisneria americana* (low density)

Table 1 List of major emergent and submerged vegetation by transect, Bagdad, Florida (concluded)

North 14 Marsh	*Cladium jamaicense, Juncus roemarianus, Hypericum nitidum*	30°36'38" N 87°02'00" W	30°36'37" N 87°02'98" W	*Vallisneria americana (low density)*
North 15 Marsh	*Sagittaria lancifolia, Arundo phragmites, Typha latifolia, Juncus roemarianus, Myrica cerifera, Pontederia lanceolata*	30°36'37" N 87°02'98" W	30°36'34" N 87°01'96"W	*Vallisneria americana* (low density)
South 1 Marsh	*Cladium jamaicense, Juncus roemarianus, Sagittaria lancifolia, Arundo phragmites, Typha spp.*	30°36'33" N 87°01'95" W	30°36'03" N 87°01'26"' W	*Vallisneria americana* (low density)
South 2 Marsh	*Cladium jamaicense, Juncus roemarianus, Sagittaria lancifolia, Hypericum nitidum*	30°36'03" N 87°01'24" W	30°36'02" N 87°01'24" W	*Vallisneria americana* (low density)
South 3 Marsh	*Cladium jamaicense, Juncus roemarianus, Sagittaria lancifolia*	30°36'02" N 87°01'24" W	30°36'00" N 87°01'22" W	*Vallisneria americana* (low density)
South 4 Marsh	*Cladium jamaicense, Juncus roemarianus, Sagittaria lancifolia, Typha latifolia, Zizaniopsis miliacea*	30°36'00" N 87°01'22" W	30°35'56" N 87°01'28" W	*Vallisneria americana, Potamogeton pectinatus*
South 5 Marsh	*Cladium jamaicense, Juncus roemarianus, Sagittaria latifolia, Arundo phragmites, Typha latifolia, Sagittaria lancifolia*	30°35'56" N 87°01'28" W	30°35'42" N 87°01'42" W	*Vallisneria americana, Potamogeton pectinatus*

Literature Cited

D'Asaro, C. 2007. Personal communication. University of West Florida, Pensacola, FL 32514.

Figure x. Shoreline looking north from Bagdad, FL boat ramp near transect N15.

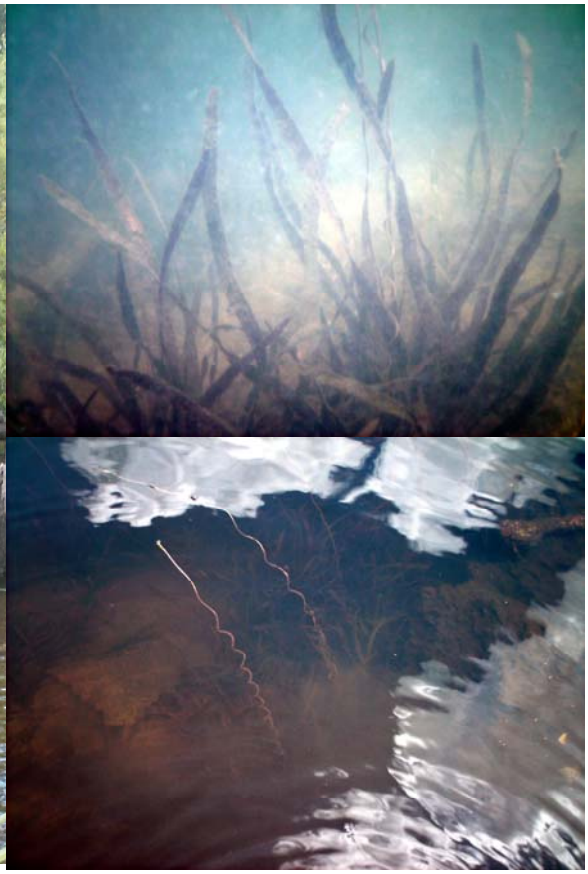

Figure x. *Vallisneria Americana* at north transect 15.

Figure x. View north along shoreline from Bagdad Boat ramp, near transect N15

Figure x. Shoreline looking south from Bagdad boat ramp in the vicinity of S1.

Figure x. View of Pond Creek shoreline looking east from the bridge.

Figure x. View of shoreline from Pond Creek Bridge looking west