

**YEAR 2000 BIOLOGICAL COMMUNITY ANALYSIS
FOR
BIG SLOUGH,
HUDSON BAYOU AND
PHILLIPPI CREEK BASIN,
SARASOTA COUNTY, FLORIDA"**



Ardaman & Associates, Inc.

OFFICES

Orlando, 8008 S. Orange Avenue, Orlando, Florida 32809, Phone (407) 855-3860

Bartow, 1525 Centennial Drive, Bartow, Florida 33830, Phone (863) 533-0858

Cocoa, 1300 N. Cocoa Blvd., Cocoa, Florida 32922, Phone (321) 632-2503

Fort Lauderdale, 3665 Park Central Boulevard North, Pompano Beach, Florida 33064, Phone (954) 969-8788

Fort Myers, 9970 Bavaria Road, Fort Myers, Florida 33913, Phone (941) 768-6600

Miami, 2608 W. 84th Street, Hialeah, Florida 33016, Phone (305) 825-2683

Port Charlotte, 740 Tamiami Trail, Unit 3, Port Charlotte, Florida 33954, Phone (941) 624-3393

Port St. Lucie, 1017 S.E. Holbrook Ct., Port St. Lucie, Florida 34952, Phone (561) 337-1200

Sarasota, 2500 Bee Ridge Road, Sarasota, Florida 34239, Phone (941) 922-3526

Tallahassee, 3175 West Tharpe Street, Tallahassee, Florida 32303, Phone (850) 576-6131

Tampa, 3925 Coconut Palm Drive, Suite 115, Tampa, Florida 33619, Phone (813) 620-3389

West Palm Beach, 2511 Westgate Avenue, Suite 10, West Palm Beach, Florida 33409, Phone (561) 687-8200

MEMBERS:

A.S.F.E.

American Concrete Institute

American Society for Testing and Materials

Florida Institute of Consulting Engineers



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

August 29, 2000
File No. 97-8710

TO: Sarasota County Government
Transportation Department Stormwater
1301 Cattlemen Road, Building A
Sarasota FL 34232

Attention: Mr. John Ryan

SUBJECT: Year 2000 Biological Community Analysis for Big Slough, Hudson Bayou and
Phillippi Creek Basin, Sarasota County, Florida

Ladies and Gentlemen:

As requested, the dry season biological community sampling and analysis has been conducted at the above referenced sites with regard to Sarasota County Transportation Department Contract No. 98-346, Work Assignment 00-16 conducted under Purchase Order 004857. This report will document the results of the year 2000 dry season biological field sampling and analysis program.

On April 27 and 28, 2000, dip net sample collection was performed at the fresh water sites including Stations 1 and 2 in Phillippi Creek and Stations 5 and 6 located in the Myakkahatchee Creek (Big Slough). Petite Ponar sampling was performed at brackish water sites 3 and 4 located in Hudson Bayou. The field sampling and analysis was conducted by Vanasse, Hangen, Brustlin, Inc. (VHB). The specific sampling methods and results of the microinvertebrate analysis are summarized in the attached VHB report dated August 25, 2000. The sampling conducted by VHB was considered to be the dry season sampling. The wet season biological sampling was conducted in late July. The results will be forwarded when received from VHB.

It has been an ongoing pleasure to be of assistance to you with this project. Please contact our office when we may be of further service to you or should you have any questions concerning this report.

Very truly yours,

Ardaman & Associates, Inc.

Noel Hackett
707

Ashby Hoover, P.E.
Project Engineer
Eng. Reg. No. 49942

Gary H. Schmidt, P.E.
Vice President
Eng. Reg. No. 12305

AH/GHS:nh



Vanasse Hangen Brustlin, Inc.
Environmental Services Division, SE

August 24, 2000

Mr. Chip Hoover
ARDAMAN & ASSOCIATES, INC.
2500 Bee Ridge Road
Sarasota, Florida 34239

RE: **Macroinvertebrate Analysis of Selected Sites along Phillippi Creek,
Big Slough and Hudson Bayou, Sarasota County, Florida**

Dear Mr. Hoover:

Pursuant to our agreement of January 17, 2000, macroinvertebrate analyses were performed at sites associated with the Sarasota County Monitoring Program. Specifically, qualitative dip net sampling was performed at four freshwater sites, which include Stations 1 and 2 located along Phillippi Creek and Stations 5 and 6 located along Myakkahatchee Creek (Big Slough). In addition, petite ponar sampling of the substratum was performed at brackish water Sites 3 and 4 located along Hudson Bayou.

Sampling was conducted on April 27 and 28, 2000. Dip net sample collection generally followed the U.S. Environmental Protection Agency (EPA) Benthic Macroinvertebrate Dip Net Sample Collection procedures (SOP #BA-7) as described below.

A Physical/Chemical Characterization Field Data Sheet and Freshwater Benthic Habitat Assessment Field Data Sheet were filled out at each sampling station. EPA's procedures for completion of these forms were used at the sampling location. Copies of the completed sheets are attached as **Appendix A**.

A dip net with No. 30 mesh was then used to conduct 20 sweeps at each station. Sweeps were concentrated within the major habitat types, as recommended in SOP #BA-7, based on the initial station assessment. The number of 0.5-meter sweeps from each habitat was recorded on the field data sheet. Samples collected in each sweep were placed in individual containers labeled with the date, station number and sweep number. Samples were mixed with a solution of 10% formalin and rose bengal to preserve and stain the organisms and returned to the laboratory.

5010 U.S. 19 North, Post Office Box 35
Palmetto, Florida 34220-0035
Palmetto/941.722.6667
Bradenton/941.747.0006
Tampa/813.229.3516
FAX 941.722.8384

Mr. Chip Hoover
August 24, 2000
Page 2

Each sample was then picked pursuant to EPA's Benthic Macroinvertebrate Qualitative (Dip Net) Sample Handling procedures (SOP #BA-8). The discreet samples for each station were composited and a representative subsample was sieved through a 0.5 mm mesh sieve. The entire contents of the 0.5 mm sieve were then placed in a gridded white enamel pan. The pan had 24 numbered grids measuring 5 cm by 5 cm. A random number table was used to select a grid, the contents of which were then removed to another pan for picking. The number of organisms picked was recorded. Picking continued until the entire sample was processed or 100 organisms were picked. Once processing of a grid began, it was completed even if the 100 organism minimum was reached. All samples picked were checked by another technician to provide quality assurance. The total number of organisms and number of grids processed were recorded for each sample. Picked organisms were stored in 70 percent ethanol and subsequently identified.

Ponar sampling involved the collection of three replicate samples from the two stations in Hudson Bayou. Following collection, samples were field-sieved through a 0.5 mm mesh sieve, preserved and stained with a formalin/rose bengal solution, and returned to the laboratory for picking, sorting and identification to the lowest practical taxa.

Results of the survey, including statistical analyses (total organisms, richness, Shannon Diversity [base 10], Simpsons Diversity, Equitability and density [organisms/m²]), are provided in tabular form (**Tables 1 and 2**). Note: Shannons Diversity is a relative index for comparing different landscapes (or sample sites) to each other or the same landscape at different times. In this index absolute magnitude is not important. Simpsons Diversity represents the probability that any two samples selected at random within the same landscape at any one time will be different. The higher the value (which cannot exceed one), the greater the likelihood that any two random samples will be different. **Tables 3 and 4** provide comprehensive phylogenetic species lists of benthic macroinvertebrates collected by Vanasse Hangen Brustlin, Inc. during the dip net sampling and petite ponar sampling, respectively.

Should you have any questions, please do not hesitate to call me.

Sincerely,

VANASSE HANGEN BRUSTLIN, INC.



Gary R. Lightbourn
Environmental Scientist

GRL:bls
Enclosures as Stated

TABLE 1. RESULTS OF DIP NET SAMPLING WITHIN STATIONS 1 AND 2 OF PHILLIPPI CREEK AND STATIONS 5 AND 6 OF MYAKKAHATCHEE CREEK, SARASOTA COUNTY MONITORING PROGRAM, SARASOTA, COUNTY FLORIDA, APRIL 2000

Taxa	Site				Total
	1	2	5	6	
HYALELLA AZTECA	42	23	3	18	86
CAENIS SP.	2	13	23	16	54
DERO DIGITATA	2			34	36
BAETIDAE SP.	1	16	2	1	20
TANYTARSUS SP.			11	8	19
AULODRILUS PIGUETI		2	4	6	12
CHIRONOMUS SP.				10	10
TRICLADIDA SP.	2	2	1	4	9
CLADOTANYTARSUS SP.			2	6	8
ANCYLIDAE SP.	3		1	3	7
PALAEEMONETES PALUDOSUS	4		3		7
TUBIFICIDAE SP. W/OUT HAIRS		1	4	1	6
ABLABESMYIA MALLOCHI			5		5
COENAGRIONIDAE SP.	1		1	3	5
CRYPTOTENDIPES SP.			5		5
GLYPTOTENDIPES SP.				5	5
MALCOSTRICA SP.			4		4
NEMERTEA SP.		1	2	1	4
PROCLADIUS SP.		2	1	1	4
ASHEUM BECKAE				3	3
LIBELLULIDAE SP.		1		2	3
MENETUS DILATATUS	3				3
PSEUDOCHIRONOMUS SP.		1		2	3
TUBIFICIDAE SP. WITH HAIRS		2		1	3
CULICOIDES SP.	2				2
ENALLAGMA SP.		1	1		2
HELOBDELLA STAGNALIS		1		1	2
ILYODRILUS TEMPLETONI		2			2
LABRUNDINIA VIRESCENS		2			2
LARSIA SP.				2	2
OXYETHIRA SP.		1		1	2
POLYPEDILUM SCALAENUM		2			2
PRISTINA PROBOSCIDEA		1		1	2
SLAVINA APPENDICULATA			1	1	2
STENELMIS SP.	1		1		2

TABLE 1. (CONTINUED)

Taxa	Site				Total
	1	2	5	6	
TRIBELOS FUSCICORNE		1		1	2
ALLONAI PARAGUAYENSIS				1	1
DERO VAGA		1			1
DESMOPACHRIA SP.	1				1
DICROTENDIPES SP.				1	1
HAEMONAIS WALDVOGELI	1				1
HEBETANCYLUS EXCENTRICUS	1				1
HELOBDELLA ELONGATA		1			1
HYDRA SP.			1		1
HYDROBIIDAE SP.	1				1
HYDROPTILA SP.		1			1
HYDROVATUS SP.	1				1
LABRUNDINIA NEOPILOSELLA		1			1
LIMNODRILUS HOFFMEISTERI			1		1
ODONTOMYIA SP.	1				1
PARACHIRONOMUS SP.				1	1
PARALAUTERBORNIELLA SP.			1		1
STENOCHIRONOMUS SP.			1		1
TANYPUS SP.				1	1
TROPISTERNIS SP.	1				1
TOTAL ORGANISMS	70	79	79	136	364
RICHNESS (TOTAL TAXA)	18	23	23	29	55
SHANNON DIVERSITY	0.761	1.021	1.117	1.159	
SIMPSONS DIVERSITY	0.637	0.851	0.885	0.895	
EQUITABILITY	0.321	0.456	0.569	0.498	
DENSITY (ORGANISMS/M ²)	N/A	N/A	N/A	N/A	

TABLE 2. RESULTS OF PETITE PONAR SAMPLING WITHIN STATIONS 3 AND 4 OF HUDSON BAYOU, SARASOTA COUNTY MONITORING PROGRAM, SARASOTA, COUNTY, FLORIDA, APRIL 2000

Taxa	Site		Total
	3	4	
MEDIOMASTUS CALIFORNIENSIS		19	19
TUBIFICIDAE SP. W/OUT HAIRS	8	2	10
CAULLERIELLA SP.	1	8	9
COROPHIUM SP.	8		8
MELITA NITIDA COMPLEX	3		3
POLYDORA LIGNI	3		3
AMAEANA TRILOBATA		2	2
CAPITELLA CAPITATA	2		2
MARPHYSA SANGUINEA	2		2
MONTICELINA DORSOBRANCHIALIS	2		2
TUBIFICOIDES BROWNAE	1	1	2
BIVALVIA SP.		1	1
DORVILLEIDAE SP.	1		1
GITANOPSIS CF. LAGUNA	1		1
GRUBEOSYLLIS CLAVATA		1	1
ORBINIIDAE SP.	1		1
PISTA SP.	1		1
STREBLOSOMA HARTMANAE	1		1
STREBLOSPI BENEDICTI	1		1
TEREBELLIDAE SP.	1		1
TOTAL ORGANISM	37	34	71
TOTAL TAXA	16	7	20
SHANNON DIVERSITY	1.051	0.569	
SIMPSONS DIVERSITY	0.902	0.642	
EQUITABILITY	0.704	0.530	
DENSITY (ORGANISMS/M ²)	511	470	

TABLE 3. COMPREHENSIVE PHYLOGENETIC SPECIES LIST OF BENTHIC MACROINVERTEBRATES COLLECTED BY DIP NET WITHIN PHILLIPPI CREEK AND MYAKKAHATCHEE CREEK, SARASOTA COUNTY, APRIL 2000

CNIDARIA
HYDROZOA
HYDROIDA
HYDRIDAE
HYDRA SP.

PLATYHELMINTHES
TURBELLARIA
TRICLADIDA
TRICLADIDA SP.

NEMERTEA
NEMERTEA SP.

ANNELIDA
OLIGOCHAETA
TUBIFICIDA
NAIDIDAE
ALLONAIIS PARAGUAYENSIS
DERO DIGITATA
DERO VAGA
HAEMONAIIS WALDVOGELI
PRISTINA PROBOSCIDEA
SLAVINA APPENDICULATA
TUBIFICIDAE
TUBIFICIDAE SP. W/OUT
TUBIFICIDAE SP. W/
AULODRILUS PIGUETI
ILYODRILUS TEMPLETONI
LIMNODRILUS HOFFMEISTERI
HIRUDINEA
RHYNCHOBDELLIDA
GLOSSIPHONIIDAE
HELOBDELLA ELONGATA
HELOBDELLA STAGNALIS

TABLE 3. (CONTINUED)

MOLLUSCA
GASTROPODA
MESOGASTROPODA
HYDROBIIDAE
HYDROBIIDAE SP.
PLANORBIDAE
MENETUS DILATATUS
ANCYLIDAE
ANCYLIDAE SP.
HEBETANCYLUS EXCENTRICUS
BIVALVIA
BIVALVIA SP.
ARTHROPODA
CRUSTACEA
AMPHIPODA
HYALELLIDAE
HYALELLA AZTECA
DECAPODA
MALACOSTRACA SP.
PALAEMONIDAE
PALAEMONETES PALUDOSUS
INSECTA
COLLEMBOLA
EPHEMEROPTERA
CAENIDAE
CAENIS SP.
BAETIDAE
BAETIDAE SP.
ODONATA
COENAGRIONIDAE
COENAGRIONIDAE SP.
ENALLAGMA SP.
LIBELLULIDAE
LIBELLULIDAE SP.
TRICHOPTERA
HYDROPTILIDAE
HYDROPTILA SP.
OXYETHIRA SP.
COLEOPTERA
DYTISCIDAE
DESMOPACHRIA SP.
HYDROVATUS SP.

TABLE 3. (CONTINUED)

ELMIDAE
STENELMIS SP.
HYDROPHYLIDAE
TROPISTERNIS SP.
DIPTERA
STRATIOMYIDAE
ODONTOMYIA SP.
CERATOPOGONIDAE
CULICOIDES SP.
CHIRONOMIDAE
ABLABESMYIA MALLOCHI
ASHEUM BECKAE
CHIRONOMUS SP.
CLADOTANYTARSUS SP.
CRYPTOTENDIPES SP.
DICROTENDIPES SP.
GLYPTOTENDIPES SP.
LABRUNDINIA NEOPILOSELLA
LABRUNDINIA VIRESCENS
PARACHIRONOMUS SP.
PARALAUTERBORNIELLA SP.
POLYPEDILUM SCALAENUM
PROCLADIUS SP.
PSEUDOCHIRONOMUS SP.
STENOCHIRONOMUS SP.
TANYPUS SP.
TANYTARSUS SP.
TRIBELOS FUSCICORNE

**TABLE 4. COMPREHENSIVE PHYLOGENETIC SPECIES LIST OF
MACROINVERTEBRATES COLLECTED BY PETITE PONAR WITHIN
HUDSON BAYOU, SARASOTA COUNTY, APRIL 2000**

ANNELIDA
POLYCHAETA
PHYLLODOCIDA
SYLLIDAE
GRUBEOSYLLIS CLAVATA
EUNICIDA
DORVILLEIDAE
DORVILLEIDAE SP.
EUNICIDAE
MARPHYSA SANGUINEA
ORBINIIDA
ORBINIIDAE
ORBINIIDAE SP.
SPIONIDA
SPIONIDAE
POLYDORA LIGNI
STREBLOSPIO BENEDICTI
CIRRATULIDAE
CAULLERIELLA SP.
MONTICELLINA DORSOBANCHIALIS
CAPITELLIDA
CAPITELLIDAE
CAPITELLA CAPITATA
MEDIOMASTUS CALIFORNIENSIS
TEREBELLIDA
TEREBELLIDAE
TEREBELLIDAE SP.
AMAEANA TRILOBATA
PISTA SP.
STREBLOSOMA CF. HARTMANAE
OLIGOCHAETA
TUBIFICIDA
TUBIFICIDAE
TUBIFICIDAE SP. W/OUT HAIR SETAE
TUBIFICOIDES BROWNAE

TABLE 4. (CONTINUED)

ARTHROPODA
CRUSTACEA
AMPHIPODA
MELITIDAE
MELITA NITIDA COMPLEX

COROPHIIDAE
COROPHIUM SP.
AMPHILOCHIDAE
GITANOPSIS CF. LAGUNA

Appendix A

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (Version 4)

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER	DATE (M/D/Y):	TIME:	RECEIVING BODY OF WATER:
SUBMITTING AGENCY NAME: _____		4-27-00	10:40	Phillippi Creek

REMARKS:	LOCATION Site No. 1	FIELD ID/NAME
----------	------------------------	---------------

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Surrounding Land-Use (specify relative percent in each category):

Forest	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
		100				

Local Watershed Erosion (check box): None Moderate Heavy

Local Watershed NPS Pollution (check box): No evidence Some potential sources Obvious sources

Point-Source Pollution (list location and describe):

Estimated System Width (range, m):	20	Estimated System Depth (range, m):	1	Yes <input type="checkbox"/>
High Water Mark (m above bed):	2.5	Velocity (range, m/s):	0 - 1	Impounded <input type="checkbox"/>
Channelized <input checked="" type="checkbox"/>				

Canopy Cover %: Open: Lightly Shaded (11-45%): Moderately Shaded (46-80%): Heavily Shaded:

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: Sewage: Petroleum: Chemical: Anaerobic: Other : _____

Sediment Oils: Absent: Slight: Moderate: Profuse:

Sediment Deposits: Sludge: Paper Fiber: Mud: Sand: Shell Other : Garbage

Substrate Types	% coverage	# times sampled	Method	Substrate Types	% coverage	# times sampled	Method
Woody Debris (Snags)				Riffles			
Leaf Packs				Sand			
Aquatic Vegetation	50	10	Dip	Mud/Muck/Silt	50	10	Dip
Rock or Shell Rubble				Benthic Leaf Mats			
Undercut Banks/Roots				Other			

WATER QUALITY

	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm):		Secchi (m):
Top	0.24	24.2	6.8	4.4	628		
Mid-depth	0.65	25.2	6.7	4.5	628		
Bottom	1.40	23.9	6.4	4.6	628		

System Type: Stream: (Sand Bottomed Swamp & Bog Alluvial Lake: Wetland: Estuary: Other : Channelized Creek
Sand Bot w/Spring Calcareous Misc.)

Water Odors (check box): Normal: Sewage: Petroleum: Chemical: Other: Sulfur

Water Surface Oils (check box) None: Sheen: Globbs: Slick:

Clarity (check box): Clear: Slightly turbid: Turbid: Opaque:

Color (check box): Tannic: Green (algae): Clear: Other:

Weather Conditions	Abundance:	Absent	Rare	Common	Abundant
	Periphyton	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Clear. High 70's.	Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Aquatic Macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Iron/sulfur Bacteria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: Gary Lightbourn/T. Dostal	SIGNATURE:	DATE:
--	------------	-------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER	DATE (M/D/Y): 4-27-00	RECEIVING BODY OF WATER: Phillippi Creek
SUBMITTING AGENCY NAME: _____			

REMARKS	LOCATION Site No. 1	FIELD ID NAME	RECEIVING BODY OF WATER:
---------	------------------------	---------------	--------------------------

Bottom Substrate	Excellent	Good	Fair	Poor
Score				
Bottom Substrate/ Available Cover	Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs, undercut banks, rubble, or other stable habitat. 23-30 points	20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. 16-22 points	5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat. 8-15 points	Less than 5% snag logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. 0-7 points
16				
Water Velocity	Max observed: >0.3 m/sec. but <1 m/sec 23-30 points	Max. observed; 0.1 to 0.3 m/sec 16-22 points	Max. observed; 0.05 to 0.1 m/s 8-15 points	Max. observed; <0.05 m/sec, or spate occurring; >2 m/sec 0-7 points
0				
Artificial Channel/ Flow Alteration	No artificial channelization. Little activity (impervious surface) in watershed which would cause scouring during spates. 12-15 points	—	—	Artificially channelized, or scouting present during spates because of excess impervious surface in watershed. 0-3 points
0				
Bank Stability	Stable. No evidence of erosion or bank failure. Little potential for future problems. 9-10 points	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 6-8 points	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 3-5 points	Unstable. Many raw, eroded areas. Obvious bank sloughing. 0-2 points
8				
Riparian Zone Vegetation Quality	Over 80% of streambank surfaces consist of native plants, classified as: bottomland hardwoods, understory shrubs, or non-woody macrophytes. 9-10 points	50% to 80% of riparian zone is vegetated, but one class of plants is not represented. 6-8 points	25% to 50% of riparian zone is vegetated, but one or two classes of plants are not represented. 3-5 points	Less than 25% of streambanks surfaces are vegetated. Poor plant community (e.g. grass monoculture) present. 0-2 point
0				
Adjustments	Add 5 points if cross-sectional area of flow is estimated to be greater than one square meter during periods of normal flow.			TOTAL SCORE
5				29

COMMENTS:

ANALYSIS DATE: 4-27-00	ANALYST: Gary Lightbourn & Thomas Dostal	SIGNATURE:
------------------------	--	------------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (Version 4)

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER	DATE (M/D/Y):	TIME:	RECEIVING BODY OF WATER:
SUBMITTING AGENCY NAME: _____		4-27-00	12:20	Phillippi Creek

REMARKS:	LOCATION <p style="text-align: center;">Site No. 2</p>	FIELD ID/NAME
----------	---	---------------

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Surrounding Land-Use (specify relative percent in each category):

Forest	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
			100			

Local Watershed Erosion (check box): None Moderate Heavy

Local Watershed NPS Pollution (check box): No evidence Some potential sources Obvious sources

Point-Source Pollution (list location and describe):

Estimated System Width (range, m):	20	Estimated System Depth (range, m):	1.5		
High Water Mark (m above bed):	2.5	Velocity (range, m/s):	0.01	Impounded <input type="checkbox"/>	Channelized <input checked="" type="checkbox"/>

Canopy Cover %: Open: Lightly Shaded (11-45%): Moderately Shaded (46-80%): Heavily Shaded:

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: Sewage: Petroleum: Chemical: Anaerobic: Other : _____

Sediment Oils: Absent: Slight: Moderate: Profuse:

Sediment Deposits: Sludge: Paper Fiber: Mud: Sand: Shell: Other : _____

Substrate Types	% coverage	# times sampled	Method	Substrate Types	% coverage	# times sampled	Method
Woody Debris (Snags)	33	6	Dip	Riffles			
Leaf Packs				Sand	33	6	Dip
Aquatic Vegetation	34	7	Dip	Mud/Muck/Silt			
Rock or Shell Rubble				Benthic Leaf Mats			
Undercut Banks/Roots				Other			

WATER QUALITY

	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm):		Secchi (m):
Top	0.12	24.7	7.4	7.8	746		
Mid-depth	0.49	24.6	7.3	7.8	747		
Bottom	0.95	24.7	6.8	6.8	753		

System Type: Stream: (Sand Bottomed Swamp & Bog Alluvial Lake: Wetland: Estuary: Other:
Sand Bot w/Spring Calcareous Misc.) Channelized Creek

Water Odors (check box): Normal: Sewage: Petroleum: Chemical: Other: _____

Water Surface Oils (check box) None: Sheen: Globbs: Slick:

Clarity (check box): Clear: Slightly turbid: Turbid: Opaque:

Color (check box): Tannic: Green (algae): Clear: Other:

Weather Conditions	Abundance:	Absent	Rare	Common	Abundant
	Periphyton	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Clear. Upper 70's.	Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Aquatic Macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Iron/sulfur Bacteria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: Gary Lightbourn/Thomas Dostal	SIGNATURE:	DATE:
--	------------	-------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER	DATE (M/D/Y):	RECEIVING BODY OF WATER:
SUBMITTING AGENCY NAME: _____		4-27-00	Phillippi Creek

REMARKS	LOCATION	FIELD ID NAME	RECEIVING BODY OF WATER:
	Site No. 2		

Bottom Substrate	Excellent	Good	Fair	Poor
Score				
Bottom Substrate/ Available Cover	Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs, undercut banks, rubble, or other stable habitat. 23-30 points	20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. 16-22 points	5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat. 8-15 points	Less than 5% snag logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. 0-7 points
16				
Water Velocity	Max observed: >0.3 m/sec. but <1 m/sec 23-30 points	Max. observed; 0.1 to 0.3 m/sec 16-22 points	Max. observed; 0.05 to 0.1 m/s 8-15 points	Max. observed; <0.05 m/sec, or spate occurring; >2 m/sec 0-7 points
0				
Artificial Channel/ Flow Alteration	No artificial channelization. Little activity (impervious surface) in watershed which would cause scouring during spates. 12-15 points	—	—	Artificially channelized, or scouting present during spates because of excess impervious surface in watershed. 0-3 points
0				
Bank Stability	Stable. No evidence of erosion or bank failure. Little potential for future problems. 9-10 points	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 6-8 points	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 3-5 points	Unstable. Many raw, eroded areas. Obvious bank sloughing. 0-2 points
6				
Riparian Zone Vegetation Quality	Over 80% of streambank surfaces consist of native plants, classified as: bottomland hardwoods, understory shrubs, or non-woody macrophytes. 9-10 points	50% to 80% of riparian zone is vegetated, but one class of plants is not represented. 6-8 points	25% to 50% of riparian zone is vegetated, but one or two classes of plants are not represented. 3-5 points	Less than 25% of streambanks surfaces are vegetated. Poor plant community (e.g. grass monoculture) present. 0-2 point
0				
Adjustments	Add 5 points if cross-sectional area of flow is estimated to be greater than one square meter during periods of normal flow.			TOTAL SCORE
5				27

COMMENTS:

ANALYSIS DATE: 4-27-00	ANALYST: Gary Lightbourn & Thomas Dostal	SIGNATURE:
------------------------	--	------------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (Version 4)

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER	DATE (M/D/Y):	TIME:	RECEIVING BODY OF WATER:
SUBMITTING AGENCY NAME: _____		4-28-00	17:00	Hudson Bayou

REMARKS:	LOCATION Site No. 3	FIELD ID/NAME
----------	------------------------	---------------

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Surrounding Land-Use (specify relative percent in each category):						
Forest	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
			80	20		
Local Watershed Erosion (check box): None <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Heavy <input type="checkbox"/>						
Local Watershed NPS Pollution (check box): No evidence <input type="checkbox"/> Some potential sources <input type="checkbox"/> Obvious sources <input checked="" type="checkbox"/>						
Point-Source Pollution (list location and describe):						
Estimated System Width (range, m):		30	Estimated System Depth (range, m):		3	Yes
High Water Mark (m above bed):		1	Velocity (range, m/s):		0 - 1	Impounded <input type="checkbox"/>
Canopy Cover %: Open: <input checked="" type="checkbox"/>		Lightly Shaded (11-45%): <input type="checkbox"/>	Moderately Shaded (46-80%): <input type="checkbox"/>		Heavily Shaded: <input type="checkbox"/>	
Channelized <input checked="" type="checkbox"/>						

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: <input checked="" type="checkbox"/>	Sewage: <input type="checkbox"/>	Petroleum: <input type="checkbox"/>	Chemical: <input type="checkbox"/>	Anaerobic: <input type="checkbox"/>	Other: <input type="checkbox"/> : _____
Sediment Oils: Absent: <input checked="" type="checkbox"/>	Slight: <input type="checkbox"/>	Moderate: <input type="checkbox"/>	Profuse: <input type="checkbox"/>		
Sediment Deposits: Sludge: <input type="checkbox"/>	Paper Fiber: <input type="checkbox"/>	Mud: <input checked="" type="checkbox"/>	Sand: <input type="checkbox"/>	Shell: <input checked="" type="checkbox"/>	Other: <input type="checkbox"/> : _____

Substrate Types	% coverage	# times sampled	Method	Substrate Types	% coverage	# times sampled	Method
Woody Debris (Snags)		N/A		Riffles			
Leaf Packs				Sand			
Aquatic Vegetation				Mud/Muck/Silt			
Rock or Shell Rubble				Benthic Leaf Mats			
Undercut Banks/Roots				Other			

WATER QUALITY

	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm):		Secchi (m):
Top							
Mid-depth							
Bottom	2.8	25.4	7.9	4.6	44932		

System Type: Stream: (Sand Bottomed Swamp & Bog Alluvial Lake: Wetland: Estuary: Other Bayou
Sand Bot w/Spring Calcareous Misc.)

Water Odors (check box): Normal: <input checked="" type="checkbox"/>	Sewage: <input type="checkbox"/>	Petroleum: <input type="checkbox"/>	Chemical: <input type="checkbox"/>	Other: <input type="checkbox"/>
Water Surface Oils (check box) None: <input checked="" type="checkbox"/>	Sheen: <input type="checkbox"/>	Globs: <input type="checkbox"/>	Slick: <input type="checkbox"/>	
Clarity (check box): Clear: <input type="checkbox"/>	Slightly turbid: <input checked="" type="checkbox"/>	Turbid: <input type="checkbox"/>	Opaque: <input type="checkbox"/>	
Color (check box): Tannic: <input type="checkbox"/>	Green (algae): <input type="checkbox"/>	Clear: <input checked="" type="checkbox"/>	Other: <input type="checkbox"/>	

Weather Conditions	Abundance:	Absent	Rare	Common	Abundant
	Periphyton	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clear. Upper 70's.	Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Aquatic Macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Iron/sulfur Bacteria	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: Gary Lightbourn/Thomas Dostal	SIGNATURE:	DATE:
--	------------	-------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER	DATE (M/D/Y): 4-28-00	RECEIVING BODY OF WATER: Hudson Bayou
SUBMITTING AGENCY NAME: _____			

REMARKS	LOCATION Site No. 3	FIELD ID NAME	RECEIVING BODY OF WATER:
---------	------------------------	---------------	--------------------------

Bottom Substrate	Excellent	Good	Fair	Poor
Score				
Bottom Substrate/ Available Cover	Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs, undercut banks, rubble, or other stable habitat. 23-30 points	20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. 16-22 points	5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat. 8-15 points	Less than 5% snag logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. 0-7 points
7				
Water Velocity	Max observed: >0.3 m/sec. but <1 m/sec 23-30 points	Max. observed; 0.1 to 0.3 m/sec 16-22 points	Max. observed; 0.05 to 0.1 m/s 8-15 points	Max. observed; <0.05 m/sec, or spate occurring; >2 m/sec 0-7 points
0				
Artificial Channel/ Flow Alteration	No artificial channelization. Little activity (impervious surface) in watershed which would cause scouring during spates. 12-15 points	—	—	Artificially channelized, or scouting present during spates because of excess impervious surface in watershed. 0-3 points
0				
Bank Stability	Stable. No evidence of erosion or bank failure. Little potential for future problems. 9-10 points	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 6-8 points	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 3-5 points	Unstable. Many raw, eroded areas. Obvious bank sloughing. 0-2 points
10				
Riparian Zone Vegetation Quality	Over 80% of streambank surfaces consist of native plants, classified as: bottomland hardwoods, understory shrubs, or non-woody macrophytes. 9-10 points	50% to 80% of riparian zone is vegetated, but one class of plants is not represented. 6-8 points	25% to 50% of riparian zone is vegetated, but one or two classes of plants are not represented. 3-5 points	Less than 25% of streambanks surfaces are vegetated. Poor plant community (e.g. grass monoculture) present. 0-2 point
0				
Adjustments	Add 5 points if cross-sectional area of flow is estimated to be greater than one square meter during periods of normal flow.			TOTAL SCORE
5				22

COMMENTS:

ANALYSIS DATE: 4-28-00	ANALYST: Gary Lightbourn/Thomas Dostal	SIGNATURE:
------------------------	--	------------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (Version 4)

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER _____	DATE (M/D/Y):	TIME:	RECEIVING BODY OF WATER:
SUBMITTING AGENCY NAME: _____		4-28-00	17:30	Hudson Bayou

REMARKS:	LOCATION <p style="text-align: center;">Site No. 4</p>	FIELD ID/NAME
----------	---	---------------

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Surrounding Land-Use (specify relative percent in each category):

Forest	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
			80	20		

Local Watershed Erosion (check box): None Moderate Heavy

Local Watershed NPS Pollution (check box): No evidence Some potential sources Obvious sources

Point-Source Pollution (list location and describe):

Estimated System Width (range, m):	31	Estimated System Depth (range, m):	3	Yes <input type="checkbox"/>
High Water Mark (m above bed):	1	Velocity (range, m/s):	0 - 1	Impounded <input type="checkbox"/>
Canopy Cover %: Open: <input checked="" type="checkbox"/>	Lightly Shaded (11-45%): <input type="checkbox"/>	Moderately Shaded (46-80%): <input type="checkbox"/>	Heavily Shaded: <input type="checkbox"/>	Channelized <input checked="" type="checkbox"/>

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: Sewage: Petroleum: Chemical: Anaerobic: Other : _____

Sediment Oils: Absent: Slight: Moderate: Profuse:

Sediment Deposits: Sludge: Paper Fiber: Mud: Sand: Shell: Other : _____

Substrate Types	% coverage	# times sampled	Method	Substrate Types	% coverage	# times sampled	Method
Woody Debris (Snags)		N/A		Riffles			
Leaf Packs				Sand			
Aquatic Vegetation				Mud/Muck/Silt			
Rock or Shell Rubble				Benthic Leaf Mats			
Undercut Banks/Roots				Other			

WATER QUALITY

	Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm):		Secchi (m):
Top							
Mid-depth							
Bottom	3.0	26.1	7.8	4.3	45255		

System Type: Stream: (Sand Bottomed Swamp & Bog Alluvial Lake: Wetland: Estuary: Other: Bayou
 Sand Bot w/Spring Calcareous Misc.)

Water Odors (check box): Normal: Sewage: Petroleum: Chemical: Other:

Water Surface Oils (check box) None: Sheen: Globbs: Slick:

Clarity (check box): Clear: Slightly turbid: Turbid: Opaque:

Color (check box): Tannic: Green (algae): Clear: Other:

Weather Conditions	Abundance:	Absent	Rare	Common	Abundant
	Periphyton	NA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Clear. Upper 70's.	Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Aquatic Macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Iron/sulfur Bacteria	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: Gary Lightbourn/	SIGNATURE:	DATE:
---------------------------------	------------	-------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER	DATE (M/D/Y):	RECEIVING BODY OF WATER:
SUBMITTING AGENCY NAME: _____		4-28-00	Sarasota Bay

REMARKS	LOCATION	FIELD ID NAME	RECEIVING BODY OF WATER:
	Site No. 4		

Bottom Substrate	Excellent	Good	Fair	Poor
Score				
Bottom Substrate/ Available Cover	Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs, undercut banks, rubble, or other stable habitat. 23-30 points	20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. 16-22 points	5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat. 8-15 points	Less than 5% snag logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. 0-7 points
7				
Water Velocity	Max observed: >0.3 m/sec. but <1 m/sec 23-30 points	Max. observed; 0.1 to 0.3 m/sec 16-22 points	Max. observed; 0.05 to 0.1 m/s 8-15 points	Max. observed; <0.05 m/sec, or spate occurring; >2 m/sec 0-7 points
0				
Artificial Channel/ Flow Alteration	No artificial channelization. Little activity (impervious surface) in watershed which would cause scouring during spates. 12-15 points	—	—	Artificially channelized, or scouting present during spates because of excess impervious surface in watershed. 0-3 points
0				
Bank Stability	Stable. No evidence of erosion or bank failure. Little potential for future problems. 9-10 points	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 6-8 points	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 3-5 points	Unstable. Many raw, eroded areas. Obvious bank sloughing. 0-2 points
10				
Riparian Zone Vegetation Quality	Over 80% of streambank surfaces consist of native plants, classified as: bottomland hardwoods, understory shrubs, or non-woody macrophytes. 9-10 points	50% to 80% of riparian zone is vegetated, but one class of plants is not represented. 6-8 points	25% to 50% of riparian zone is vegetated, but one or two classes of plants are not represented. 3-5 points	Less than 25% of streambanks surfaces are vegetated. Poor plant community (e.g. grass monoculture) present. 0-2 point
0				
Adjustments	Add 5 points if cross-sectional area of flow is estimated to be greater than one square meter during periods of normal flow.			TOTAL SCORE
5				22

COMMENTS:

ANALYSIS DATE: 4-28-00	ANALYST: Gary Lightbourn	SIGNATURE:
------------------------	--------------------------	------------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (Version 4)

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER _____	DATE (M/D/Y):	TIME:	RECEIVING BODY OF WATER:
SUBMITTING AGENCY NAME: _____		4/28/00	15:00	Myakkahatchee Creek

REMARKS: Bank hardening under I-75 Bridge. Approx. 100 yard stretch	LOCATION Site No. 5	FIELD ID/NAME
--	------------------------	---------------

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Surrounding Land-Use (specify relative percent in each category):

Forest	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
90			10			

Local Watershed Erosion (check box): None Moderate Heavy

Local Watershed NPS Pollution (check box): No evidence Some potential sources Obvious sources

Point-Source Pollution (list location and describe):

Estimated System Width (range, m): 8 Estimated System Depth (range, m): 0 - 1

High Water Mark (m above bed): 1 Velocity (range, m/s): 1 Impounded

Canopy Cover %: Open: Lightly Shaded (11-45%): Moderately Shaded (46-80%): Heavily Shaded: Channelized

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: Sewage: Petroleum: Chemical: Anaerobic: Other : _____

Sediment Oils: Absent: Slight: Moderate: Profuse:

Sediment Deposits: Sludge: Paper Fiber: Mud: Sand: Shell: Other : _____

Substrate Types	% coverage	# times sampled	Method	Substrate Types	% coverage	# times sampled	Method
Woody Debris (Snags)				Riffles			
Leaf Packs	34	7	Dip	Sand	33	6	Dip
Aquatic Vegetation				Mud/Muck/Silt			
Rock or Shell Rubble				Benthic Leaf Mats			
Undercut Banks/Roots	33	7	Dip	Other			

WATER QUALITY

Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm):	Secchi (m):
Top	0.3	20.6	7.1	5.2	849
Mid-depth					
Bottom	0.7	20.8	7.0	5.6	857

System Type: Stream: (Sand Bottomed Swamp & Bog Alluvial Lake: Wetland: Estuary: Other _____
Sand Bot w/Spring Calcareous Misc.)

Water Odors (check box): Normal: Sewage: Petroleum: Chemical: Other: _____

Water Surface Oils (check box) None: Sheen: Globbs: Slick:

Clarity (check box): Clear: Slightly turbid: Turbid: Opaque:

Color (check box): Tannic: Green (algae): Clear: Other:

Weather Conditions	Abundance:	Absent	Rare	Common	Abundant
Periphyton		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Clear. Upper 70's.	Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Aquatic Macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Iron/sulfur Bacteria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: Gary Lightbourn/Thomas Dostal	SIGNATURE: _____	DATE: _____
--	------------------	-------------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER _____	DATE (M/D/Y): 4-27-00	RECEIVING BODY OF WATER: Myakkahatchee Creek
SUBMITTING AGENCY NAME: _____			

REMARKS	LOCATION Site No. 5	FIELD ID NAME	RECEIVING BODY OF WATER:
---------	------------------------	---------------	--------------------------

Bottom Substrate	Excellent	Good	Fair	Poor
Score				
Bottom Substrate/ Available Cover	Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs, undercut banks, rubble, or other stable habitat. 23-30 points	20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. 16-22 points	5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat. 8-15 points	Less than 5% snag logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. 0-7 points
8				
Water Velocity	Max observed: >0.3 m/sec. but <1 m/sec 23-30 points	Max. observed; 0.1 to 0.3 m/sec 16-22 points	Max. observed; 0.05 to 0.1 m/s 8-15 points	Max. observed; <0.05 m/sec, or spate occurring; >2 m/sec 0-7 points
30				
Artificial Channel/ Flow Alteration	No artificial channelization. Little activity (impervious surface) in watershed which would cause scouring during spates. 12-15 points	—	—	Artificially channelized, or scouting present during spates because of excess impervious surface in watershed. 0-3 points
3				
Bank Stability	Stable. No evidence of erosion or bank failure. Little potential for future problems. 9-10 points	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 6-8 points	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 3-5 points	Unstable. Many raw, eroded areas. Obvious bank sloughing. 0-2 points
6				
Riparian Zone Vegetation Quality	Over 80% of streambank surfaces consist of native plants, classified as: bottomland hardwoods, understory shrubs, or non-woody macrophytes. 9-10 points	50% to 80% of riparian zone is vegetated, but one class of plants is not represented. 6-8 points	25% to 50% of riparian zone is vegetated, but one or two classes of plants are not represented. 3-5 points	Less than 25% of streambanks surfaces are vegetated. Poor plant community (e.g. grass monoculture) present. 0-2 point
10				
Adjustments	Add 5 points if cross-sectional area of flow is estimated to be greater than one square meter during periods of normal flow.			TOTAL SCORE
5				62

COMMENTS:

ANALYSIS DATE: 4-27-00	ANALYST: Gary Lightbourn/Thomas Dostal	SIGNATURE: _____
------------------------	--	------------------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
PHYSICAL/CHEMICAL CHARACTERIZATION FIELD DATA SHEET (Version 4)

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER	DATE (M/D/Y):	TIME:	RECEIVING BODY OF WATER:
SUBMITTING AGENCY NAME: _____		4-27-00	14:00	Myakkahatchee Creek

REMARKS:	LOCATION <p style="text-align: center;">Site No. 6</p>	FIELD ID/NAME
----------	---	---------------

RIPARIAN ZONE/INSTREAM FEATURES

Predominant Surrounding Land-Use (specify relative percent in each category):

Forest	Field/Pasture	Agricultural	Residential	Commercial	Industrial	Other (Specify)
60			20		20	

Local Watershed Erosion (check box): None Moderate Heavy

Local Watershed NPS Pollution (check box): No evidence Some potential sources Obvious sources

Point-Source Pollution (list location and describe):

Estimated System Width (range, m): 85 Estimated System Depth (range, m): 3-4 Yes

Velocity (range, m/s): 0.1 0 - 1 Impounded

Canopy Cover %: Open: Lightly Shaded (11-45%): Moderately Shaded (46-80%): Heavily Shaded: Channelized

SEDIMENT/SUBSTRATE

Sediment Odors: Normal: Sewage: Petroleum: Chemical: Anaerobic: Other: _____

Sediment Oils: Absent: Slight: Moderate: Profuse:

Sediment Deposits: Sludge: Paper Fiber: Mud: Sand: Shell: Other: _____

Substrate Types	% coverage	# times sampled	Method	Substrate Types	% coverage	# times sampled	Method
Woody Debris (Snags)				Riffles			
Leaf Packs				Sand	25	5	Dip
Aquatic Vegetation	50	10	Dip	Mud/Muck/Silt	25	5	Dip
Rock or Shell Rubble				Benthic Leaf Mats			
Undercut Banks/Roots				Other			

WATER QUALITY

Depth (m):	Temp. (°C):	pH (SU):	D.O. (mg/l):	Cond. (µmho/cm):	Secchi (m):
Top	0.2	25.7	7.0	7.0	748
Mid-depth					
Bottom	0.7	25.0	6.9	7.3	774

System Type: Stream: (Sand Bottomed Swamp & Bog Alluvial Lake: Wetland: Estuary: Other Creek
Sand Bot w/Spring Calcareous Misc.)

Water Odors (check box): Normal: Sewage: Petroleum: Chemical: Other: _____

Water Surface Oils (check box) None: Sheen: Globbs: Slick:

Clarity (check box): Clear: Slightly turbid: Turbid: Opaque:

Color (check box): Tannic: Green (algae): Clear: Other:

Weather Conditions	Abundance:	Absent	Rare	Common	Abundant
	Periphyton	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Clear. Upper 70's.	Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Aquatic Macrophytes	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Iron/sulfur Bacteria	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SAMPLING TEAM: Gary Lightbourn/Thomas Dostal	SIGNATURE:	DATE:
--	------------	-------

STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION
FRESHWATER BENTHIC HABITAT ASSESSMENT FIELD DATA SHEET

SUBMITTING AGENCY CODE: _____	STORET STATION NUMBER: _____	DATE (M/D/Y): 4-27-00	RECEIVING BODY OF WATER: Myakkahatchee Creek
SUBMITTING AGENCY NAME: _____			

REMARKS	LOCATION: Site No. 6	FIELD ID NAME	RECEIVING BODY OF WATER:
---------	----------------------	---------------	--------------------------

Bottom Substrate	Excellent	Good	Fair	Poor
Score				
Bottom Substrate/ Available Cover	Greater than 40% snags, logs, tree roots, emergent vegetation, leaf packs, undercut banks, rubble, or other stable habitat. 23-30 points	20% to 40% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Adequate habitat. 16-22 points	5% to 20% snags, logs, tree roots, emergent vegetation, leaf packs, etc. Less than desirable habitat. 8-15 points	Less than 5% snag logs, tree roots, emergent vegetation, leaf packs, etc. Lack of habitat is obvious. 0-7 points
15				
Water Velocity	Max observed: >0.3 m/sec. but <1 m/sec 23-30 points	Max. observed; 0.1 to 0.3 m/sec 16-22 points	Max. observed; 0.05 to 0.1 m/s 8-15 points	Max. observed; <0.05 m/sec, or spate occurring; >2 m/sec 0-7 points
3				
Artificial Channel/ Flow Alteration	No artificial channelization. Little activity (impervious surface) in watershed which would cause scouring during spates. 12-15 points	—	—	Artificially channelized, or scouting present during spates because of excess impervious surface in watershed. 0-3 points
12				
Bank Stability	Stable. No evidence of erosion or bank failure. Little potential for future problems. 9-10 points	Moderately stable. Infrequent or small areas of erosion, mostly healed over. 6-8 points	Moderately unstable. Moderate areas of erosion, high erosion potential during floods. 3-5 points	Unstable. Many raw, eroded areas. Obvious bank sloughing. 0-2 points
6				
Riparian Zone Vegetation Quality	Over 80% of streambank surfaces consist of native plants, classified as: bottomland hardwoods, understory shrubs, or non-woody macrophytes. 9-10 points	50% to 80% of riparian zone is vegetated, but one class of plants is not represented. 6-8 points	25% to 50% of riparian zone is vegetated, but one or two classes of plants are not represented. 3-5 points	Less than 25% of streambanks surfaces are vegetated. Poor plant community (e.g. grass monoculture) present. 0-2 point
10				
Adjustments	Add 5 points if cross-sectional area of flow is estimated to be greater than one square meter during periods of normal flow.			TOTAL SCORE
5				51

COMMENTS:

ANALYSIS DATE: 4-27-00	ANALYST: Gary Lightbourn/Thomas Dostal	SIGNATURE: _____
------------------------	--	------------------