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FLOW-VELOCITY DATA COLLECTED IN THE WETLANDS ADJACENT TO CANAL C-111 IN SOUTH FLORIDA DURING 1997 AND 1999

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FLOW-VELOCITY DATA COLLECTED IN THE WETLANDS ADJACENT TO CANAL C-111 IN SOUTH FLORIDA DURING 1997 AND 1999

By MARIA H. BALL AND RAYMOND W. SCHAFFRANEK

U.S. GEOLOGICAL SURVEY

Open-File Report

Reston, Virginia

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For additional information, write to:

Chief, Modeling of Hydrodynamics Systems Project
U. S. Geological Survey
MS 430 – National Center
Reston, Virginia 20192

Copies of this report can be purchased from:

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CONVERSION FACTORS, ABBREVIATIONS, AND VERTICAL DATUM

Divide	By	To obtain
	Length	
millimeter (mm)	25.4	inch (in)
centimeter (cm)	2.54	inch (in)
meter (m)	0.3048	foot (ft)
kilometer (km)	1.609	mile (mi)
	Velocity	
centimeter per second (cm/s)	30.48	foot per second (ft/s)
	Temperature	
degrees (°F)	1.8(+32)	degrees (°C)

Acidity is given in pH units.
Acoustic signal strength is given in decibels (dB).
Conductivity is given in microsiemens (μS).
Dissolved Oxygen (DO) is given in parts per million (ppm).
Frequency of velocity measurement is given in hertz (Hz).
Salinity is given in parts per thousand (ppt).

Velocity coordinates are given in earth coordinates of magnetic east, north, and up.

Vertical datum -- Site locations are referenced to North American Datum 1983 and projected to Universal Transverse Mercator, Zone 17, in meters.

FLOW-VELOCITY DATA COLLECTED IN THE WETLANDS ADJACENT TO CANAL C-111 IN SOUTH FLORIDA DURING 1997 AND 1999

By Maria H. Ball and Raymond W. Schaffranek

ABSTRACT

The U. S. Geological Survey (USGS) is working closely with other Federal and State agencies in a comprehensive program to evaluate and restore the south Florida ecosystem. Within the USGS South Florida Ecosystem Program, a project entitled "Coupling Models for Canal and Wetland Flow/Transport Interaction" is focused on analysis and numerical simulation of flow and potential transport of constituents between canal C-111 and wetlands adjacent to Everglades National Park. In support of this project, comprehensive sets of flow, vegetation, and water-quality data were collected in September 1997 and 1999. The flow-velocity data are compiled, summarized, and tabulated in this report. The flow, vegetation, and water-quality data are available for downloading from the World Wide Web.

INTRODUCTION

The wetlands between canal C-111 and the eastern panhandle area of Everglades National Park (ENP) (fig. 1) are of particular concern to south Florida ecosystem restoration efforts in that they constitute a major pathway for fresh water to reach nearshore embayments of Florida Bay. Engineering modifications in the C-111 drainage basin, conducted in 1996 and 1997, included removal of residual spoil mounds along the southwest bank of the canal. The purpose of this re-engineering was to enable overbank flow from the canal to enhance sheet flow in the wetlands. Extensive sets of flow, vegetation, and basic water-quality data have been collected in the wetlands adjacent to the C-111 canal to analyze canal/wetland flow exchanges and to support the development of a numerical flow model for this connected canal and wetland ecosystem (Schaffranek, 1996).

In September 1997, near the conclusion of the spoil removal efforts, flow measurements were made at nine transects originating at the canal where the spoil mounds were previously located. These transects were spaced at variable intervals and extended perpendicular to the canal into the adjacent wetlands. Flow measurements were repeated in September 1999 with the spatial extent of coverage expanded to evaluate inter-basin exchanges, to quantify other potential inflow sources, and to determine flow directions and magnitudes along the ENP boundary. Velocities were measured using portable acoustic Doppler current meters retrofitted with electronic compasses to geodetically reference flow directions. At all measurement sites, basic water-quality parameters were measured using portable water-quality meters, and visual observations of vegetation characteristics were recorded.

Details of the data collection, reduction, and processing methodologies, plus summary statistics quantifying flow-velocity data and data quality are presented in this report. Basic water-quality parameters required for velocity computations are also compiled and tabulated herein.

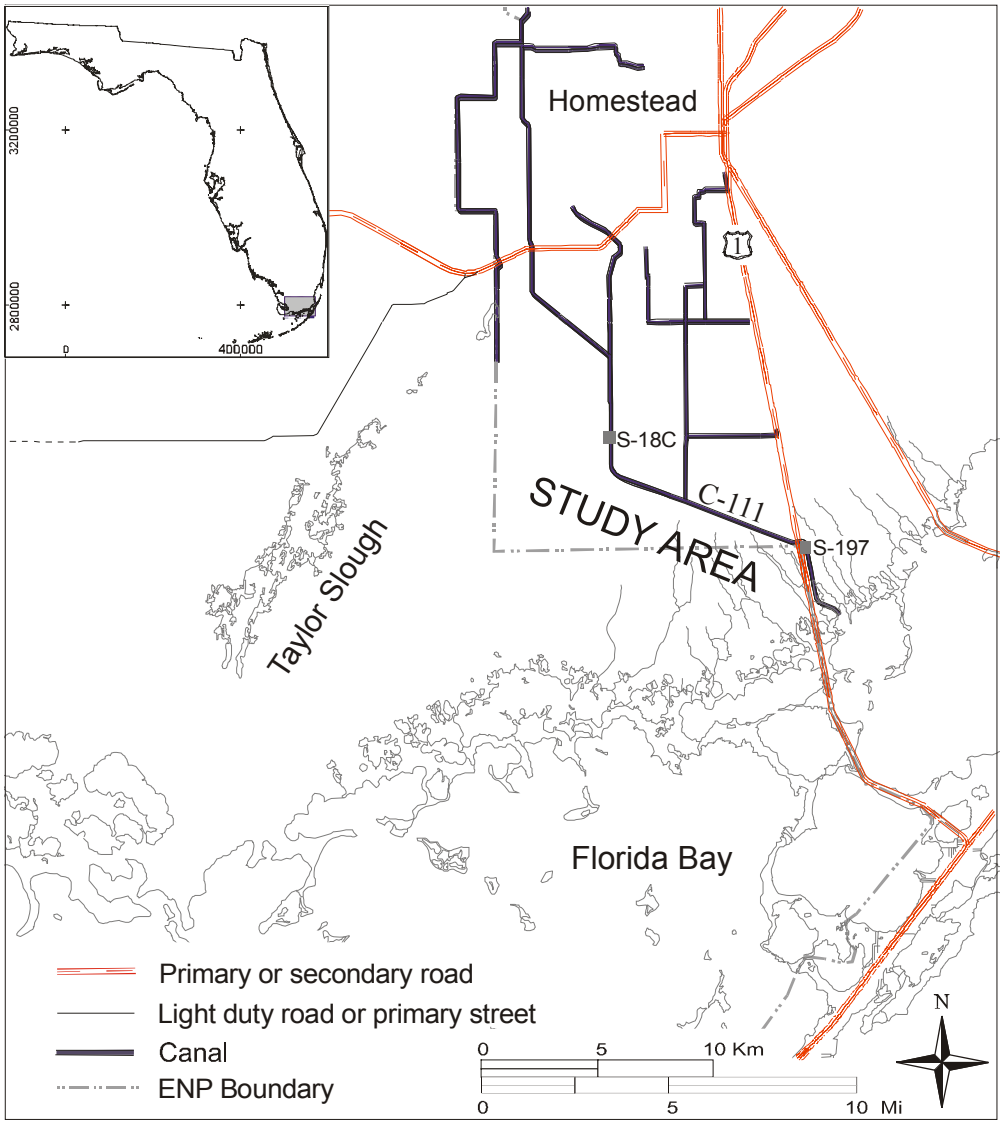


Figure 1. Canal C-111 study area in south Florida bounded by the hydraulic control structures S-197 and S-18C, and the Everglades National Park (ENP) Boundary.

Vegetation characteristics are not tabulated in this report because they are not required for velocity data processing. However, velocity data and summary statistics, as well as water-quality and vegetation findings, are available for downloading from the Data Exchange page of the U. S. Geological Survey South Florida Information Access web site http://sofia.usgs.gov.

ACKNOWLEDGMENT

Partial funding for this project was provided through the U.S. Department of the Interior "Critical Ecosystem Studies Initiative" administered by the National Park Service.

DESCRIPTION OF STUDY AREA

The C-111 drainage basin is located in southern Dade County, Florida, between the city of Homestead and Florida Bay (see figure 1). It is bounded on the west by Everglades National Park and Taylor Slough and on the east by U.S. Highway 1. The project study area is the 10.5-km segment of the C-111 canal between the S-18C and S-197 hydraulic control structures, including the 8-km long re-graded spoil bank of the canal and connected wetlands to the south and west between the canal and Florida Bay.

DESCRIPTION OF VELOCITY METER

Flow velocities in the C-111 wetlands were measured using portable Acoustic Doppler Velocity (ADV) meters that determine velocity components in the East, North, and Up directions (ENU). The ADV meter consists of a measuring probe attached to a signal-conditioning module, which is cabled to a processing unit equipped with a serial interface to a portable computer. The meter measures the frequency shift between a short acoustic pulse of known frequency and its reflectance from particles moving with the flow of water. The scattering strength of the acoustic signal is a function of particle size and concentration within the sampling volume. The particular ADV meter used (Sontek, 1997) operates internally at an acoustic frequency of 10 MHz with a programmable sampling rate ranging from 0.1 to 25 Hz, producing multiple individual velocity readings, referred to as velocity pings. The ADV meter measures the flow in a remote sampling volume, approximately 0.25 cm^3, to a resolution of 0.1 mm/s. Water temperature and salinity, measured independently, are input to the ADV meter processor to compute the speed of sound, which is used to convert Doppler frequency shift to flow velocity. With an optional magnetic compass and tilt sensor, the instrument processor internally converts velocity measurements to an East, North, and Up coordinate system.

Data conversion programs supplied by the instrument manufacturer (Sontek, 1997) produce four output text files from the binary data file recorded by the processing unit of the ADV meter: control, velocity, correlation, and signal to noise ratio (SNR) files. The control file contains the water-quality parameters and instrument-specific information used to calculate velocity components as well as site-specific data for identification purposes (fig. 2). The velocity file contains the velocity component values for each ping. A correlation value for each ping, which

SONTEK Velocity Data
Data File ---------- mb4_3.ADV
File Size ---------- 100378 bytes
Start Date/Time --------- 09/20/1999 15:30:02

File Comments:

Probes in File:
Probe 3 - Serial Number: 1279

Sampling Rate ---------- 10.000 Hz
Sampling Interval ------- 0.100 s
# of Samples in File ---- 3564
Length of Time Series --- 356.400 s
Temperature ---------- 20.00 °C
Salinity ---------- 0.00 ppt
Speed of Sound ---------- 1482.34 m/s
Velocity Range ---------- 3 cm/s
A/D Data ---------- NOT PRESENT
Compass/Tilt Data ------- YES
Temperature Data ------- NO
Pressure Data ------- NO
Ext Sensor Data ------- NO
Paros Data ------- NO
Velocity Coordinates ---- EARTH (East, North, Up)

Probe #	Distances to Boundary from probe tip	from sampling volume
3	11.85 cm	6.26 cm

Figure 2. Sample control file containing parameter values required from the user and calculated by the ADV processor for velocity computation. (Bold text indicates parameters values input by the user.)

is a general data quality parameter expressed as a percent that can identify poor data resulting from a variety of factors, such as an instrument malfunction or a fouled probe, is output to the correlation file. The SNR file contains a value for each ping that identifies the signal strength during the measurement, calculated as signal amplitude subtracted from signal noise level and expressed in decibel (dB) units (Sontek, 1997).

DATA COLLECTION

Locations of 1997 and 1999 flow-velocity measurement sites, determined using conventional and precise-positioning-service, global positioning system units, are identified in figure 3. In 1997, flow measurements generally were made at five locations spaced at variable intervals along nine transects oriented southwestward and perpendicular to the canal. In 1999, measurements were repeated at five of these transects and collected along one new transect, perpendicular to the canal at the S18-C control structure. Flow measurements also were made on two new transects along the ENP boundary to the south and west of C-111, one oriented north-south and the other east-west. In 1997, data were collected and recorded in the U.S. Customary System units whereas in 1999 International System (SI) units were used. For reader convenience and use, summary statistics for data collected in 1997 have been converted to SI units in this report.

At all measurement sites, velocities generally were sampled at 10 Hz in two-minute bursts consisting of 1200 individual velocity pings. In September 1997, velocities were measured at 0.8d, 0.6d, and 0.2d, where d is total depth from the water surface to the top of the litter layer. In September 1999, velocities were measured at 0.8d, 0.5d, and 0.2d. At sites where the water depth was less than 15 cm, only a mid-depth velocity measurement was made. In 1997, temperature, salinity, dissolved oxygen, conductivity, and pH were measured, always at mid-depth. In 1999, only temperature, salinity, and conductivity were measured. In both years, visual observations of vegetation characteristics (type, density, and height) were noted and recorded at each site.

These flow-velocity data were collected to analyze regional surface-water flow patterns in the C-111 wetlands and to compute discharge fluxes across basin boundaries. The data were processed, as described in this report, specifically for these purposes and are not intended, nor are they necessarily suitable, for use in other applications.

VELOCITY DATA REDUCTION AND PROCESSING TECHNIQUES

Preliminary reduction of the velocity, correlation, and SNR data files, output from the data conversion programs, produces summary statistics for the raw data, consisting of: component averages and standard deviations of velocity, correlation, and SNR values for each measurement site, at each depth (table 1). Velocity magnitude is calculated at each depth from East and North velocity-component averages. Flow direction is calculated as the average flow direction of all velocity pings for each depth. Although the up-component of velocity is used in the filtering process and data analysis discussed below, it is not included in the calculation of

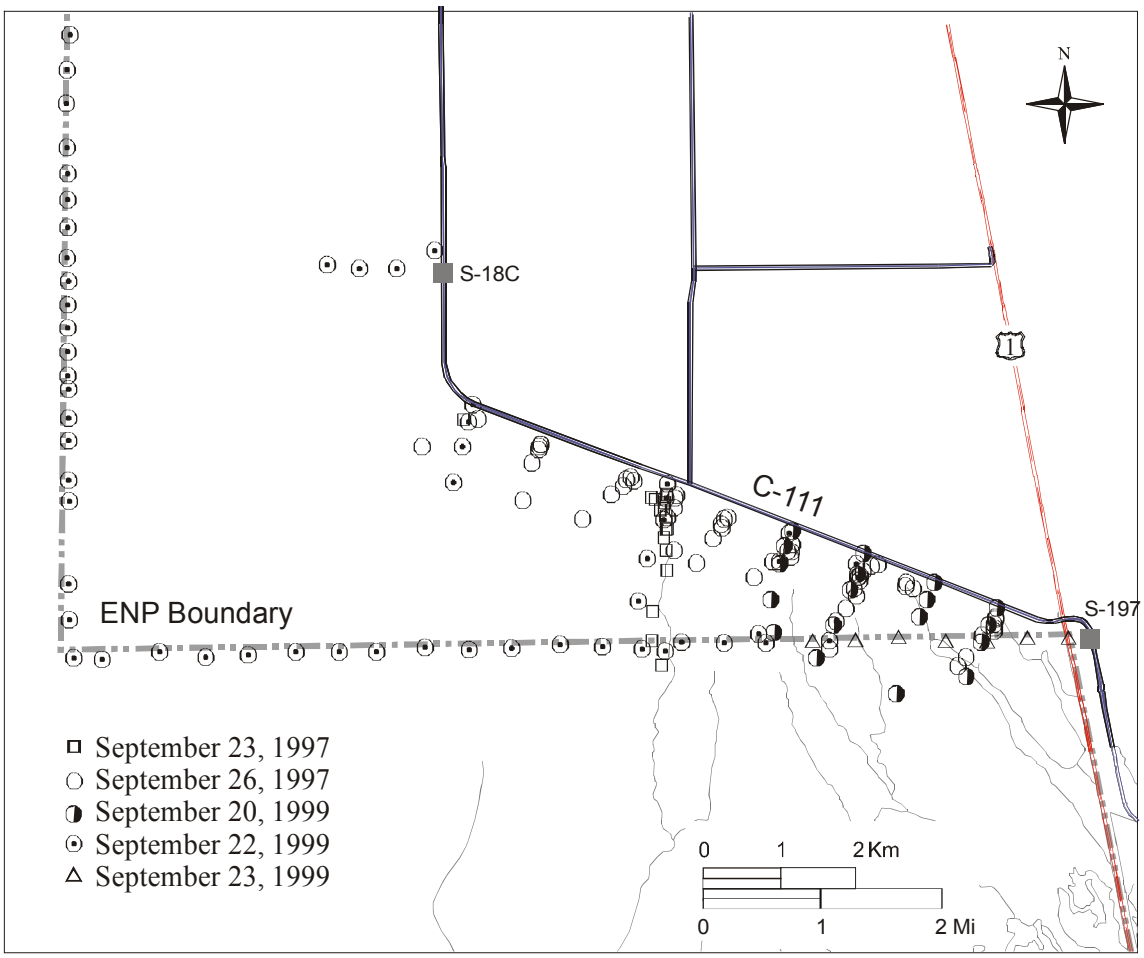


Figure 3. Data collection sites along Everglades National Park (ENP) Boundary and canal C-111 between control structures S-197 and S-18C, in 1997 and 1999.

SONTEK Velocity Data
Data File ---------- mb4_3.ADV
Start Date/Time --------- 09/20/1999 15:30:02

Summary Statistics for Raw Velocity Data (cm/s)

			East	North	Up
0.2d	Velocity	Average	-0.300	-0.949	0.071
		Stdev	0.165	0.215	0.142
	Corr.	Average	98.6	98.8	98.7
		Stdev	0.6	0.5	0.7
	SNR	Average	18.5	20.4	18.3
		Stdev	2.3	2.5	2.2
0.5d	Velocity	Average	-0.148	-0.391	0.033
		Stdev	0.301	0.412	0.154
	Corr.	Average	98.20	98.52	98.67
		Stdev	1.4	1.0	0.8
	SNR	Average	25.0	23.3	25.8
		Stdev	5.4	6.5	6.6
0.8d	Velocity	Average	-0.424	-0.656	0.154
		Stdev	0.170	0.176	0.104
	Corr.	Average	97.4	97.9	97.3
		Stdev	1.4	1.1	1.7
	SNR	Average	14.6	15.7	13.9
		Stdev	3.3	3.5	3.3

Raw Velocity Data Resultant Magnitudes (East - North)

Declination 2 deg

	Velocity Magnitude (cm/s)	Flow Direction (Magnetic North)
0.2d	1.00	198
0.5d	0.42	197
0.8d	0.78	213

Table 1. Sample summary statistics for raw velocity data at a measurement site. (Summary statistics show average and standard deviation of measured velocity and associated data quality indicators (Corr. and SNR) calculated at each velocity component (ENU) for each depth. Velocity magnitude was calculated from average East and North velocity components, and flow direction was calculated as the mean flow direction of all pings.)

velocity magnitude or flow direction. The up-component magnitudes are generally found to be very close to zero, except occasionally at the top, 0.2d measurement location, where wind can affect the velocity measurements. Hereafter, the East and North designation is dropped when referring to velocity components. After the preliminary data reduction, two techniques were used to process the data. The first data-processing technique was the application of an automated filtering program to identify velocity pings of poor signal quality and the second technique was the visual inspection of plotted data and the analysis of velocity standard deviation. The filtering criteria used in the automated program are those suggested by the ADV meter manufacturer to identify suspect data due to poor signal quality (Sontek, 1997). The analysis of velocity standard deviation and visual inspection of plotted data were used as a secondary processing technique to identify additional suspect data presumably caused by perturbations in the water column rather than poor signal quality.

The first data-processing technique, the automated filtering program, is designed to remove velocity pings with a correlation value less than 70% or SNR value less than 5 dB. (A correlation value above 70% and an SNR greater than 15 dB at 25 Hz and greater than 5 dB at 0.1 Hz are suggested indicators of good acoustic signal quality (Sontek, 1997).) The automated filtering program consists of two functions. The first function calculates <u>component-averages</u> of correlation and SNR values for each ping, whereas the second function uses <u>single-component</u> values for each ping. The first function identifies component-averaged correlation or SNR values that do not meet the above criteria, removes the three velocity components of that ping from the data set, and recalculates the component-velocity average and standard deviation. The second function of the filtering program identifies any single-component correlation or SNR value that does not meet the criteria, removes the identified velocity component of that ping from the data set, and recalculates the component-velocity average and standard deviation (see example in table 2). For the C-111 data processed herein, only results of the single-component filter are tabulated for comparison to values calculated from the raw data. (See Appendix A for data collected in 1997 and Appendix B for data collected in 1999).

The second data-processing technique, designed for the C-111 data, combines the visual inspection of plots of component velocities and their 21-point running averages plotted at each depth, as illustrated by the example in figure 4, with the analysis of velocity standard deviation. Inspection of the plots and velocity standard deviation can reveal the presence of large scatter or trends in the data generally not detected by the automated filtering process. Application of this second, qualitative, processing technique is described and the results of both techniques are discussed in the following section.

DATA ANALYSIS AND SUMMARY

For both years, slightly more than half of the data sets included pings that did not pass the criteria of the single-component filter in the automated program. However, in many of those data sets only a few pings failed and the majority of the data sets evidenced little change in recalculated velocity magnitude and flow direction (Appendix A and B). Conversely, there are a number of cases where the filter did not identify all suspect pings. For example, the filter removed three velocity pings (circled in figure 5), two with a correlation less than 70% and one

ADV Velcoty Data
Data File ---------- enp_ew34.ADV Burst = 10
Start Date/Time --------- 09/22/1999 Depth = 0.5D
Units= cm/s

(a) **Correlation Filter Criterion** **70**
SNR Filter Criterion **5**

(b)

Raw Data			Velocity
East	North	Up	Data
-0.2621	-0.5610	-0.0247	Average
0.2840	0.2543	0.0632	Std. Dev.
1200	1200	1200	Number

(c)

Velocity	Average Corr Filter			Individual Corr Filter		
Data	East	North	Up	East	North	Up
Average	-0.2606	-0.5611	-0.0242	-0.2574	-0.5627	-0.0242
Std. Dev.	0.2793	0.2484	0.0627	0.2642	0.2406	0.0616
Number	1190	1190	1190	1133	1133	1133

(d)

Velocity	Average SNR Filter			Individual SNR Filter		
Data	East	North	Up	East	North	Up
Average	-0.2584	-0.5613	-0.0252	-0.2617	-0.5648	-0.0252
Std. Dev.	0.2382	0.2192	0.0577	0.2212	0.2151	0.0558
Number	823	823	823	616	616	616

(e)

Velocity	Average Corr & SNR Filter			Individual Corr & SNR Filter		
Data	East	North	Up	East	North	Up
Average	-0.2584	-0.5613	-0.0252	-0.2627	-0.5652	-0.0250
Std. Dev.	0.2382	0.2192	0.0577	0.2202	0.2150	0.0557
Number	823	823	823	615	615	615

	Velocity magnitude (cm/s)	**Flow direction (magnetic north)**
Raw	**0.62**	**205**
Filtered	**0.62**	**204**

Table 2. Sample summary raw and filtered velocity data for comparison. (Correlation (Corr) and signal to noise ratio (SNR) values associated with the raw velocity data were both processed through two filters (c and d). In the average filter, the average correlation or SNR value must pass the filter criteria (a). In the individual filter, all components in each velocity ping must pass the filter criteria. Velocity magnitude and flow direction calculated from raw velocity data (b) are shown for comparison to those data that passed both correlation and SNR filters at the individual component level (e).)

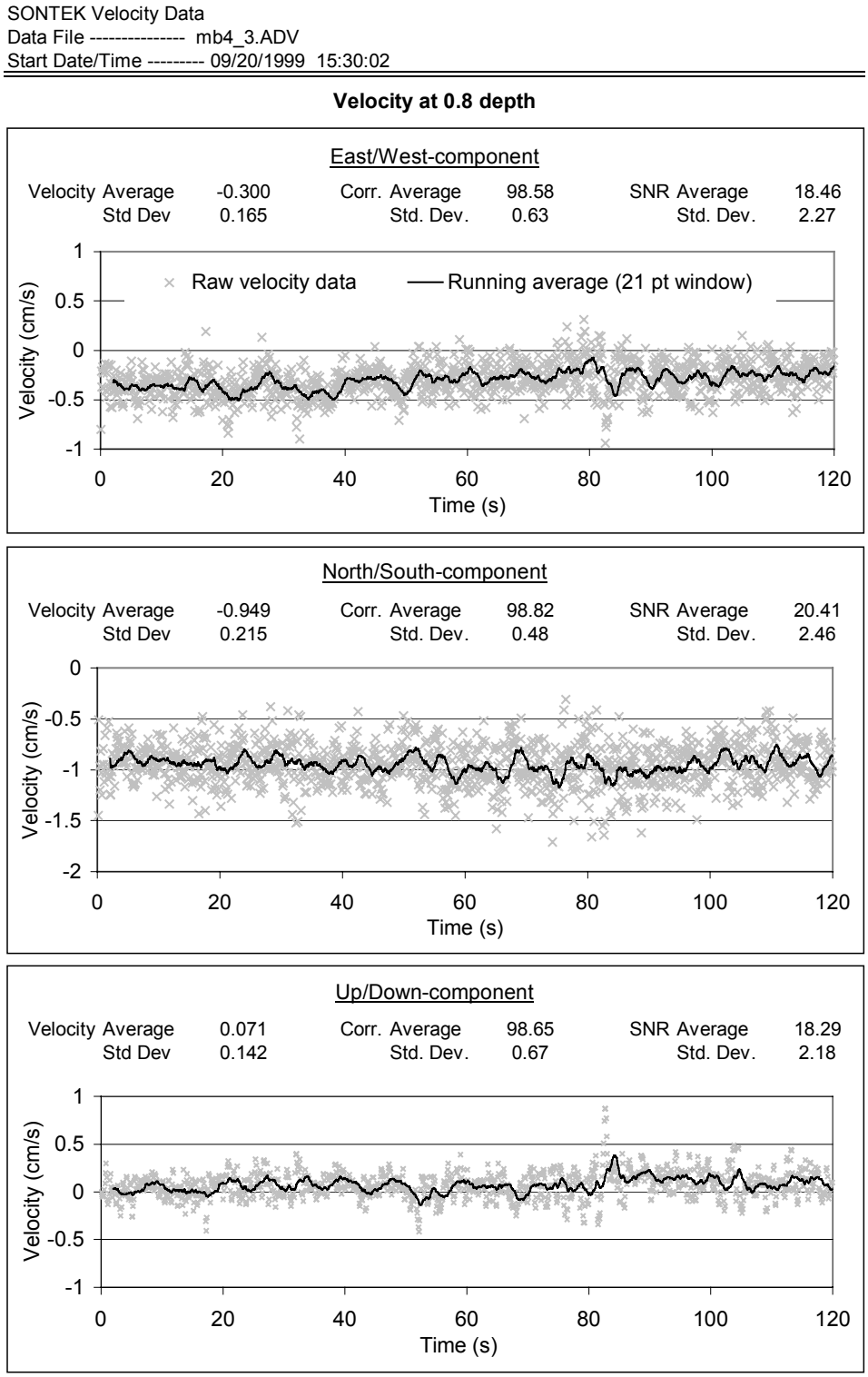
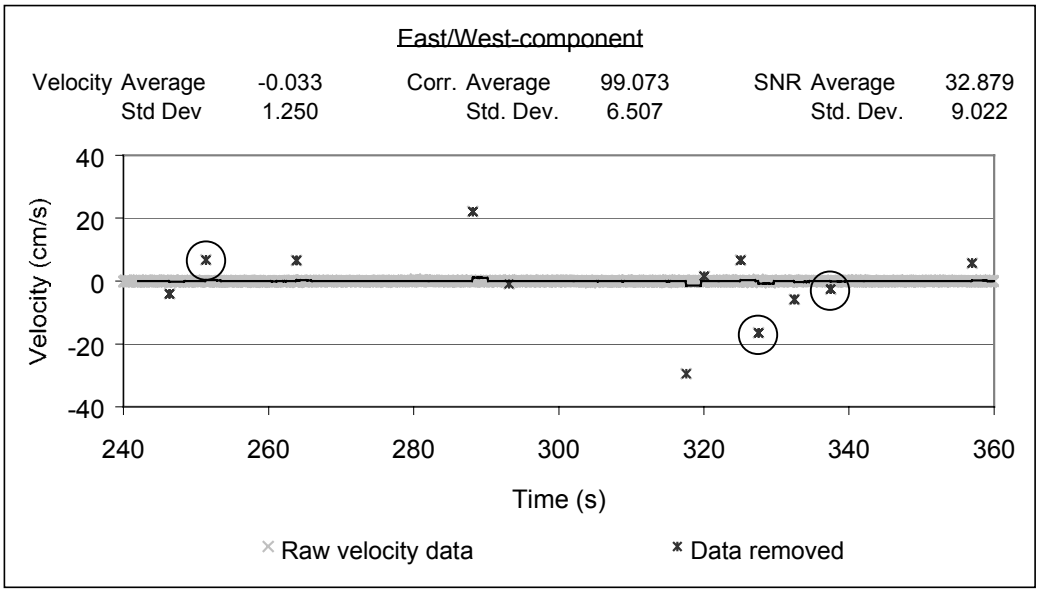


Figure 4. Sample plot of individual velocity pings and running average for each directional component at 0.8 depth at one measurement site in the wetlands adjacent to canal C-111. (Average and standard deviation values were calculated from raw velocity data (x), as were the 21-point running averages (—), to aid in determining data quality.)

SONTEK Velocity Data
Data File ---------- c2-02.ADV gmt, pat, tb
Start Date/Time --------- 09/20/1999 20:52:43

Velocity at 0.2 depth



with an SNR value less than 5 dB. Inspection of the plotted data in figure 5, however, reveals nine additional anomalous values that were not identified by the filter.

So, although the automated filtering process provides a first-cut in identification of anomalous data, and certainly identifies data of poor signal quality, the process does not always identify all suspect data. Suspect data do not necessarily imply data of poor signal quality, they might result from flow perturbations caused by a variety of factors, such as fish, wind, vegetation, and probe instability; such perturbations can be transmitted easily through the slowly moving water column containing the sampling volume.

Inspection of the graphs of C-111 data, along with velocity-component averages and standard deviations, comprise a secondary, qualitative, processing technique that identified additional suspect data. Upon visual inspection of the plots, two data characteristics indicating anomalous data were identified in a number of bursts. The first was scatter, where consecutive velocity pings within a burst varied widely, resulting in a high standard deviation but a relatively constant running average, as seen in figure 6. In most cases, the removal of many velocity pings did not change the resultant velocity magnitude or flow direction significantly. In some cases, however, the scatter in the raw data is so great that the computed velocity magnitude and flow direction values are not very accurate (fig. 7).

The second data characteristic indicating anomalous data is the presence of one or more, opposing or coincident, trends, in which consecutive pings were similar but the running average varied and, as with the case of data scatter, the standard deviation was relatively high. Trends are the result of a change in flow direction, although the change may be due to local flow perturbations or probe instability, which can mask the prevailing flow velocity. The example plot in figure 8 shows 252 pings removed by the filter due to a low SNR value and 10 pings removed due to a low correlation value. The differences between raw and recalculated velocity magnitude and flow direction are negligible (Appendix B – 2, site mrt6p1). The filter identified the most extreme outliers in the burst, as well as a number of pings that plot close to the running average. The filter did not, however, identify the pings within the trend, because those pings did not have poor signal quality. A trend in the data can affect a moderate difference in the calculated flow direction, since flow direction is a function of the relationship between individual velocity components. For the example shown in figure 8, the resultant velocity and flow direction of the raw data are 2.27 cm/s and 232 degrees, respectively. After removing the pings from 120 to 140 seconds, resultant velocity and flow direction are 2.24 cm/s and 236 degrees, respectively.

Standard deviation was found to be a good indicator of overall data quality within a burst and generally identified the severity of scatter or trends present in the data, although it did not always identify the presence of one or two outliers. Velocity standard deviation of the data collected in the C-111 wetlands ranged from 0.001 cm/s to greater than 1 cm/s in extreme cases. The velocity standard deviation for C-111 data of good quality was generally less than 0.3 cm/s. A standard deviation of 0.5 cm/s typically suggested a fair amount of scatter or a trend in the data. Therefore, additional bursts with suspect data that passed the automated filtering process were identified by the velocity standard deviation. A data quality indicator, expressed in terms of Good, Fair, or Poor, was assigned to each burst of raw velocity data collected in the C-111

SONTEK Velocity Data
Data File ---------- ns_16.ADV
Start Date/Time --------- 09/22/1999 13:25:37

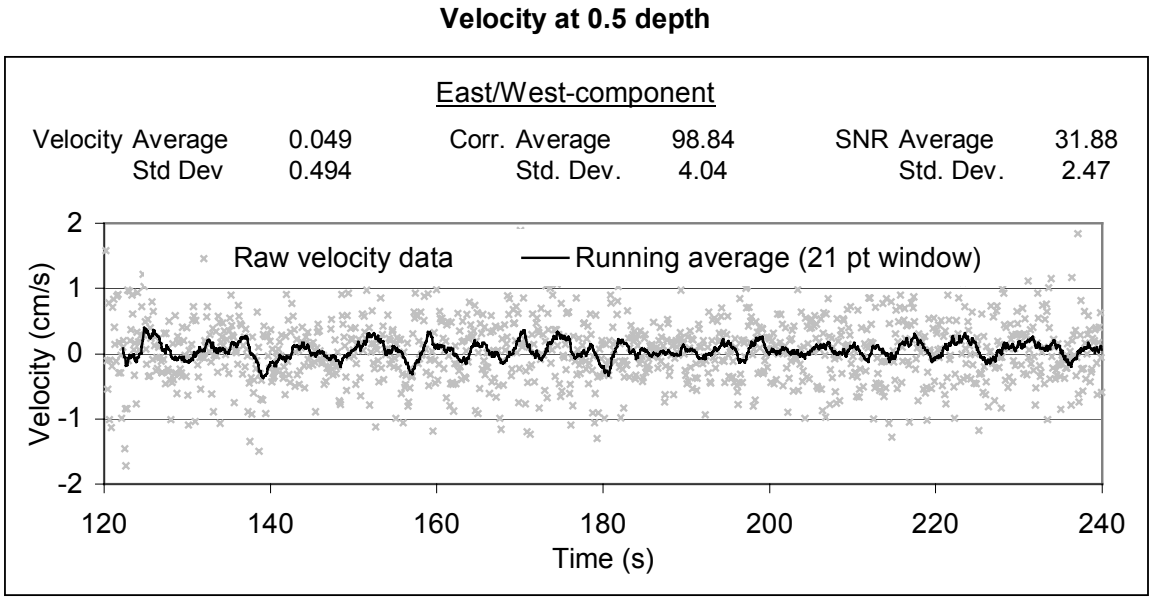


Figure 6. Example plot of velocity data, collected along the ENP Boundary, showing scatter with a relatively high velocity standard deviation and constant running average. (Average and standard deviation values were calculated from raw velocity data (x), as was the 21-point running average (—).)

SONTEK Velocity Data
Data File ---------- enp_ew1.ADV
Start Date/Time --------- 09/22/1999 15:05:30

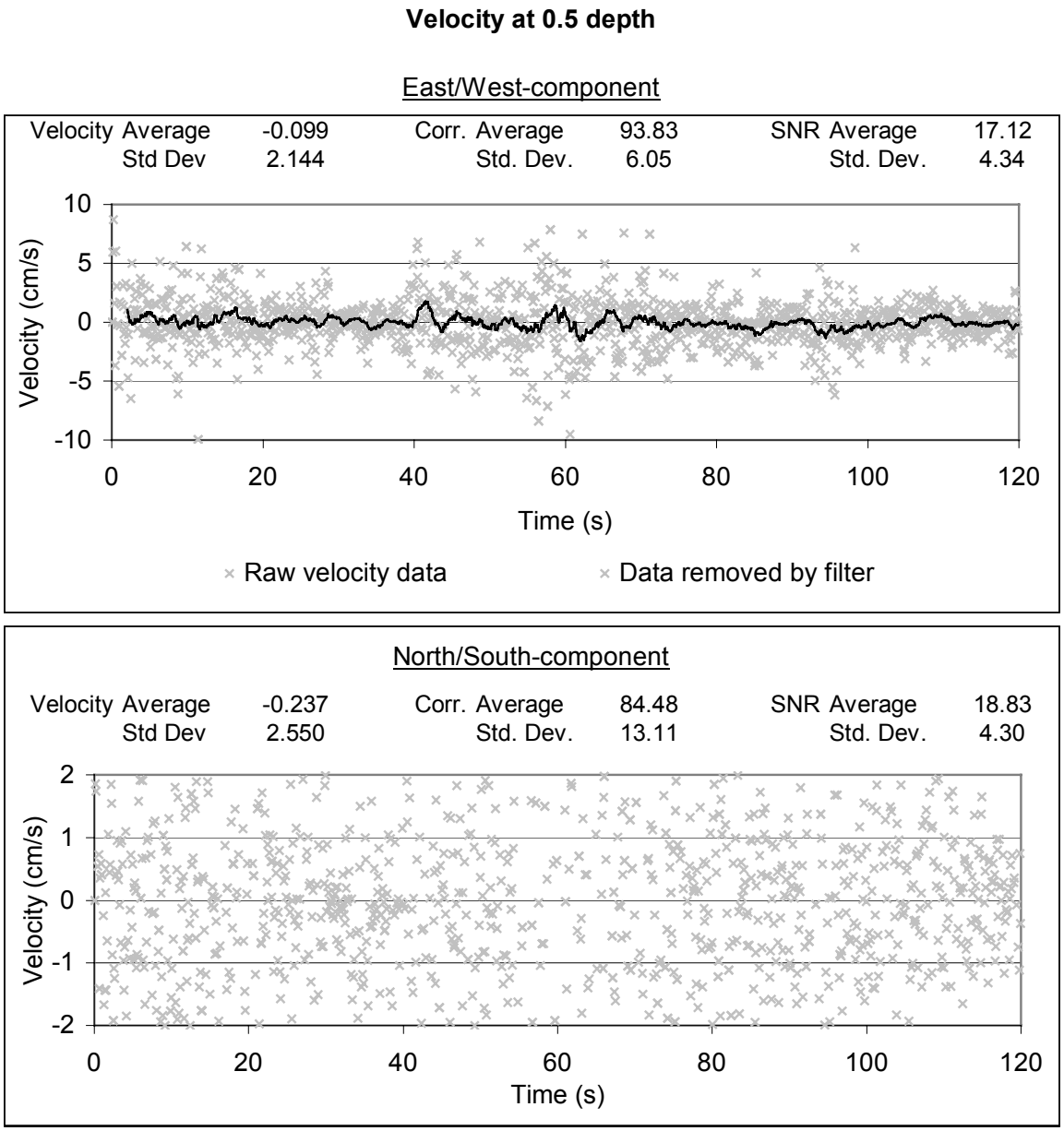


Figure 7. Example plot of velocity data, collected along the ENP Boundary, having significant scatter. (Average and standard deviation values were calculated from raw velocity data (x), as was the 21-point running average (—). Data removed by the filtering process are identified by an asterisk (*). Note that data are plotted at a larger scale in the lower graph for clarity.)

SONTEK Velocity Data
Data File ---------- mrt6p1.ADV
Start Date/Time --------- 09/22/1999 15:47:59

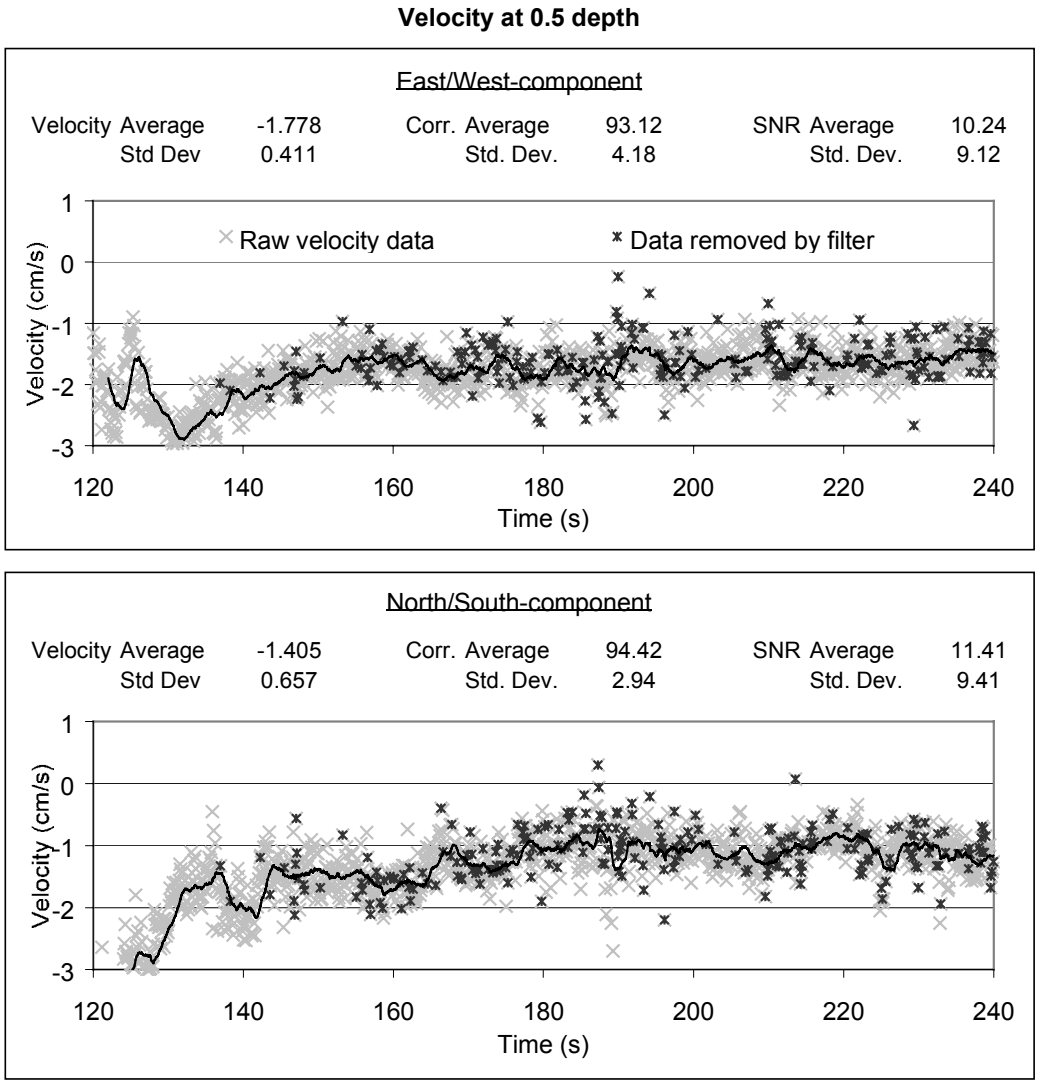


Figure 8. Example plot of velocity data, collected in the wetlands adjacent to canal C-111, showing a trend. (Average and standard deviation values were calculated from raw velocity data (x), as were the 21-point running averages (−). Data removed by the filtering process are identified by an asterisk (*).)

wetlands based the velocity standard deviation (Appendix C and D). The standard deviation criteria used in this secondary processing technique were application and site specific and, therefore, are not appropriate for data collected at other locations.

For flow-velocity analysis of the C-111 canal and adjacent wetlands, resultant velocity magnitude in the horizontal plane and vector-averaged flow direction, relative to magnetic north, were calculated for each site and are reported in Appendix E and F. The values tabulated in Appendix E and F generally are the result of the data processing techniques discussed herein. Ultimately, however, the final calculated values are the result of qualitative decisions regarding each individual burst, of which part or all, may have been deleted for intended C-111 project purposes.

In summary, for both years of C-111 data, individual velocity pings generally ranged from -1.0 to +1.0 cm/s (negative values denote the west, south, or down direction in the ENU coordinate system) and +/- 2.0 cm/s in the extreme. Velocity magnitude at each depth ranged from 0.01 to 5.0 cm/s, and the site-averaged velocity was generally less than 1 cm/s. Velocity magnitude tended toward zero at the measurement closest to the litter layer, 0.8d, and was largest near the water surface, 0.2d. Flow directions at each depth in both years varied but generally ranged from 180 to 210 degrees.

DATA AVAILABILITY

Raw data with associated correlation files, SNR files, water quality parameters, and vegetation characteristics for each individual site are available at the SOFIA website (http://sofia.usgs.gov). Site averaged data summaries, data quality indicators, and results from the automated filtering process are also available at the SOFIA website. Preliminary graphical representation of flow vectors can be found at the Tides and Inflows in the Mangroves of the Everglades (TIME) website (http://time.er.usgs.gov).

REFERENCES

Schaffranek, R. W., 1996, Coupling models for canal and wetland interactions in the south Florida ecosystem: U. S. Geological Survey Fact Sheet FS-139-96, 4 p.

_____, 1997, Sontek ADV acoustic Doppler velocimeter technical documentation: Sontek, San Diego, CA, 164 p.

Appendix A. Summary of raw and filtered velocity data, C-111 drainage basin, South Florida Everglades, September 1997

Table A - 1. Summary of raw and filtered velocity data, Transects 1 - 5, C-111 drainage basin, September 23, 1997, 0.2 depth

[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
Dmsc1_1	9/23/97	1196	1200	2.42	2.43	-0.01	257	257	-0.3
Dmsc1_2	9/23/97	1200	1200	2.95	2.95	0.00	238	238	0.0
Dmsc1_3	9/23/97	1200	1200	2.15	2.15	0.00	231	231	0.0
Dmsc1_4	9/23/97	1200	1200	0.01	0.01	0.00	186	186	0.0
Dmsc1_5	9/23/97	1200	1200	1.43	1.43	0.00	179	179	0.0
Dmsc1_6	9/23/97	1200	1197	1.40	1.40	0.00	195	195	0.0
Dmsc1_7	9/23/97	1173	327	0.21	0.22	-0.01	199	195	3.9
Dmsc1_8	9/23/97	1196	881	0.29	0.31	-0.02	186	187	-0.6
Dmsc2_1	9/23/97	1199	1200	0.45	0.45	0.00	189	189	0.0
Dmsc2_2	9/23/97	1200	1200	1.16	1.16	0.00	260	260	0.0
Dmsc2_3	9/23/97	1200	1200	0.45	0.45	0.00	214	214	0.0
Dmsc3_1	9/23/97	1200	1200	1.01	1.01	0.00	233	233	0.0
Dmsc3_2	9/23/97	1200	1200	1.21	1.21	0.00	239	239	0.0
Dmsc3_3	9/23/97	1200	1200	0.74	0.74	0.00	257	257	0.0
Dmsc3_4	9/23/97	1200	1200	0.01	0.01	0.00	190	190	0.0
Dmsc3_5	9/23/97	1198	1158	0.41	0.41	0.01	226	225	0.9
Dmsc3_6	9/23/97	1200	1200	1.25	1.25	0.00	205	205	0.0
Dmsc3_7	9/23/97	1200	1200	1.25	1.25	0.00	188	188	0.0
Dmsc3_9	9/23/97	1200	1200	0.83	0.83	0.00	229	229	0.0
Dabc4_1	9/23/97	1200	1008	2.96	2.96	0.00	282	282	-0.5
Dabc4_2	9/23/97	1200	1200	1.48	1.48	0.00	259	259	0.0
Dabc4_3	9/23/97	1197	868	1.41	1.41	0.01	196	196	0.6
Dabc4_4	9/23/97	1195	449	0.82	0.73	0.09	197	201	-3.8
Dabc4_5r	9/23/97	1194	1115	0.73	0.74	-0.01	184	184	-0.1
Dabc4_6	9/23/97	1137	547	0.73	0.81	-0.09	188	192	-3.7
Dabc5_1	9/23/97	1197	1194	4.16	4.17	-0.01	243	243	-0.2
Dabc5_2	9/23/97	1194	1200	4.87	4.85	0.02	265	265	-0.1
Dabc5_3	9/23/97	1196	1200	0.17	0.17	0.00	191	191	0.0
Dabc5_4	9/23/97	1101	660	0.42	0.44	-0.02	186	187	-1.0
Dabc5_5	9/23/97	1200	1200	0.43	0.43	0.00	199	199	0.0
Dabc5_6	9/23/97	1140	563	1.24	1.24	0.00	213	215	-1.1

Table A - 2. Summary of raw and filtered velocity data, Transects 1 - 5, C-111 drainage basin, September 23, 1997, 0.6 depth

[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
Dmsc1_1	9/23/97	1200	1200	2.44	2.44	0.00	262	262	0.0
Dmsc1_2	9/23/97	1200	1200	2.50	2.50	0.00	254	254	0.0
Dmsc1_3	9/23/97	1200	1200	1.08	1.08	0.00	215	215	0.0
Dmsc1_4	9/23/97	1198	1200	0.01	0.01	0.00	184	184	0.2
Dmsc1_5	9/23/97	1200	1200	2.03	2.03	0.00	178	178	0.0
Dmsc1_6	9/23/97	1200	1200	0.12	0.12	0.00	207	207	0.0
Dmsc1_7	9/23/97	1192	987	1.02	1.01	0.01	187	187	-0.1
Dmsc1_8	9/23/97	1198	1200	0.01	0.00	0.00	185	185	0.0
Dmsc2_1	9/23/97	1200	1200	0.82	0.82	0.00	240	240	0.0
Dmsc2_2	9/23/97	1200	1200	0.86	0.86	0.00	221	221	0.0
Dmsc2_3	9/23/97	1200	1200	0.72	0.72	0.00	213	213	0.0
Dmsc3_1	9/23/97	1200	1200	0.75	0.75	0.00	86	86	0.0
Dmsc3_2	9/23/97	1200	1200	1.82	1.82	0.00	208	208	0.0
Dmsc3_3	9/23/97	1200	1200	0.61	0.61	0.00	171	171	0.0
Dmsc3_4	9/23/97	1200	1200	0.01	0.01	0.00	187	187	0.0
Dmsc3_5	9/23/97	1200	1200	0.92	0.92	0.00	165	165	0.0
Dmsc3_6	9/23/97	1200	1200	0.01	0.01	0.00	192	192	0.0
Dmsc3_7	9/23/97	1199	1200	0.48	0.49	0.00	184	184	0.1
Dmsc3_9	9/23/97	1200	1200	0.10	0.10	0.00	214	214	0.0
Dabc4_1	9/23/97	1200	967	1.87	1.88	-0.01	274	274	0.3
Dabc4_2	9/23/97	1200	1131	1.15	1.15	0.00	248	248	-0.5
Dabc4_3	9/23/97	1200	1200	0.02	0.02	0.00	177	177	0.0
Dabc4_4	9/23/97	1200	1200	0.12	0.12	0.00	194	194	0.0
Dabc4_5r	9/23/97	1200	945	0.90	0.90	0.00	195	196	-1.0
Dabc4_6	9/23/97	1135	294	1.04	1.03	0.01	233	238	-4.5
Dabc5_1	9/23/97	1200	1196	3.84	3.84	0.00	246	246	0.0
Dabc5_2	9/23/97	1200	1200	1.78	1.78	0.00	257	257	0.0
Dabc5_3	9/23/97	1200	1065	0.60	0.62	-0.02	196	197	-0.3
Dabc5_4	9/23/97	1196	990	0.70	0.72	-0.01	203	203	0.1
Dabc5_5	9/23/97	1200	1146	0.31	0.31	0.00	214	213	0.4
Dabc5_6	9/23/97	1200	1176	0.15	0.15	0.00	194	194	0.2

Table A - 3. Summary of raw and filtered velocity data, Transects 1 - 5,
C-111 drainage basin, September 23, 1997, 0.8 depth
[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
Dmsc1_1	9/23/97	1200	1200	1.76	1.76	0.00	253	253	0.0
Dmsc1_5	9/23/97	1200	1200	0.62	0.62	0.00	159	159	0.0
Dmsc1_6	9/23/97	1200	1200	0.09	0.09	0.00	166	166	0.0
Dmsc1_7	9/23/97	1195	809	0.50	0.51	-0.01	177	175	2.3
Dmsc1_8	9/23/97	1171	1200	0.09	0.09	0.00	208	207	0.2
Dmsc3_4	9/23/97	1200	1200	0.32	0.32	0.00	178	178	0.0
Dmsc3_5	9/23/97	1160	1164	0.35	0.35	0.00	178	178	0.2
Dmsc3_6	9/23/97	226	1	0.01	n/a	n/a	185	n/a	n/a
Dmsc3_7	9/23/97	1200	1200	0.11	0.11	0.00	172	172	0.0
Dmsc3_9	9/23/97	1200	1200	0.46	0.46	0.00	197	197	0.0
Dabc4_1	9/23/97	1200	947	1.94	1.95	-0.01	297	296	0.4
Dabc4_2	9/23/97	1200	1109	0.58	0.59	-0.01	214	215	-0.8
Dabc4_3	9/23/97	1198	795	0.25	0.25	0.00	187	188	-1.9
Dabc4_4	9/23/97	1200	1200	0.02	0.02	0.00	174	174	0.0
Dabc4_5r	9/23/97	1054	156	0.96	0.95	0.01	216	219	-2.8
Dabc4_6	9/23/97	1164	228	0.32	0.45	-0.13	183	192	-9.4
Dabc5_1	9/23/97	1200	1200	2.87	2.87	0.00	230	230	0.0
Dabc5_2	9/23/97	1200	1200	0.78	0.78	0.00	234	234	0.0
Dabc5_3	9/23/97	1200	1200	0.29	0.29	0.00	193	193	0.0
Dabc5_4	9/23/97	1200	1200	0.14	0.14	0.00	192	192	0.0
Dabc5_5	9/23/97	1200	1200	0.82	0.82	0.00	216	216	0.0
Dabc5_6	9/23/97	1200	1091	0.12	0.13	-0.01	201	200	-0.4

Table A - 4. Summary of raw and filtered velocity data, Transects 6 - 9, C-111 drainage basin, September 23, 1997, 0.2 depth

[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
Gbd6-2	9/23/97	1200	1200	1.20	1.20	0.00	239	239	0.0
Gbd6-3	9/23/97	1200	1200	0.14	0.14	0.00	166	166	0.0
Gbd6-4	9/23/97	1200	1200	0.63	0.63	0.00	196	196	0.0
Gbd6-5	9/23/97	1198	1200	0.65	0.65	0.00	244	244	-0.2
Gbd6-6	9/23/97	1200	1200	0.98	0.98	0.00	216	216	0.0
Gbd7-1	9/23/97	1197	1199	1.46	1.46	0.00	204	204	-0.1
Gbd7-2	9/23/97	1200	1200	1.32	1.32	0.00	219	219	0.0
Gbd7-3	9/23/97	1200	1200	0.12	0.12	0.00	150	150	0.0
Gbd7-4	9/23/97	1200	1200	0.46	0.46	0.00	183	183	0.0
Gbd7-5	9/23/97	1200	1200	0.47	0.47	0.00	158	158	0.0
Gbd7-6	9/23/97	1183	809	0.54	0.51	0.03	182	181	0.2
Gbd8-1	9/23/97	1200	1200	1.37	1.37	0.00	201	201	0.0
Gbd8-2	9/23/97	1200	1200	2.33	2.33	0.00	233	233	0.0
Gbd8-3	9/23/97	1200	1200	0.69	0.69	0.00	129	129	0.0
Gbd8-4	9/23/97	1200	1200	0.10	0.10	0.00	194	194	0.0
Gbd8-5	9/23/97	1200	1200	0.16	0.16	0.00	176	176	0.0
Gbd8-6	9/23/97	1192	1166	0.14	0.14	0.00	206	206	0.0
Gbd9-1	9/23/97	1200	1200	0.01	0.01	0.00	174	174	0.0
Gbd9-3	9/23/97	1200	1200	0.75	0.75	0.00	214	214	0.0

Table A - 5. Summary of raw and filtered velocity data, Transects 6 - 9, C-111 drainage basin, September 23, 1997, 0.6 depth

[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
Gbd6-2	9/23/97	1200	1200	1.14	1.14	0.00	268	268	0.0
Gbd6-3	9/23/97	1200	1195	0.89	0.89	0.00	156	156	0.1
Gbd6-4	9/23/97	1200	1200	0.53	0.53	0.00	175	175	0.0
Gbd6-5	9/23/97	1200	1200	0.35	0.35	0.00	218	218	0.0
Gbd6-6	9/23/97	1198	1160	0.93	0.93	0.00	201	201	0.1
Gbd7-1	9/23/97	1200	1199	0.99	0.99	0.00	200	200	0.0
Gbd7-2	9/23/97	1200	1200	0.67	0.67	0.00	158	158	0.0
Gbd7-3	9/23/97	1200	1200	0.88	0.88	0.00	163	163	0.0
Gbd7-4	9/23/97	1163	659	0.55	0.57	-0.02	156	154	1.6
Gbd7-5	9/23/97	1200	1161	0.68	0.67	0.00	206	206	-0.3
Gbd7-6	9/23/97	1090	426	0.79	0.82	-0.03	175	174	1.2
Gbd8-1	9/23/97	1200	1200	1.73	1.73	0.00	197	197	0.0
Gbd8-2	9/23/97	1200	1200	2.58	2.58	0.00	243	243	0.0
Gbd8-3	9/23/97	1200	1200	0.39	0.39	0.00	132	132	0.0
Gbd8-4	9/23/97	1200	1180	1.02	1.02	0.00	203	203	0.0
Gbd8-5	9/23/97	1193	1055	0.38	0.37	0.01	217	219	-2.1
Gbd8-6	9/23/97	1185	1119	0.43	0.44	-0.01	185	185	0.4
Gbd9-1	9/23/97	1190	916	1.52	1.51	0.01	157	157	0.6
Gbd9-3	9/23/97	1200	1200	0.90	0.90	0.00	179	179	0.0

Table A - 6. Summary of raw and filtered velocity data, Transects 6 - 9, C-111 drainage basin, September 23, 1997, 0.8 depth

[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
Gbd6-2	9/23/97	1172	1200	1.78	1.80	-0.02	232	233	-1.2
Gbd6-3	9/23/97	1200	1200	0.39	0.39	0.00	136	136	0.0
Gbd6-4	9/23/97	1156	1109	0.58	0.58	0.00	208	207	1.3
Gbd6-5	9/23/97	1018	301	1.93	1.92	0.02	201	202	-0.8
Gbd6-6	9/23/97	1193	970	0.50	0.48	0.02	189	189	-0.3
Gbd7-1	9/23/97	1197	1197	1.42	1.42	0.00	219	219	-0.1
Gbd7-2	9/23/97	1200	1200	0.21	0.21	0.00	199	199	0.0
Gbd7-3	9/23/97	1200	1200	0.82	0.82	0.00	140	140	0.0
Gbd7-4	9/23/97	1145	440	0.85	0.87	-0.02	196	194	2.2
Gbd7-5	9/23/97	1136	528	1.65	1.64	0.01	188	187	0.7
Gbd7-6	9/23/97	1013	332	0.74	0.78	-0.04	185	185	-0.2
Gbd8-1	9/23/97	1200	1200	2.56	2.56	0.00	229	229	0.0
Gbd8-2	9/23/97	1200	1200	3.44	3.44	0.00	265	265	0.0
Gbd8-3	9/23/97	1200	1200	0.35	0.35	0.00	187	187	0.0
Gbd8-4	9/23/97	1198	1091	0.92	0.92	0.00	205	205	0.3
Gbd8-5	9/23/97	1192	876	0.94	0.95	-0.01	204	203	0.6
Gbd8-6	9/23/97	1197	1117	0.66	0.66	0.00	192	192	0.7
Gbd9-1	9/23/97	1187	770	1.44	1.44	0.00	146	145	1.1

Table A - 7. Summary of raw and filtered velocity data, Transects 6A - 6C, C-111 drainage basin, September 26, 1997, 0.2 depth

[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
Dabc6a_1	9/26/97	1200	1200	2.26	2.26	0.00	281	281	0.0
Dabc6a_2	9/26/97	1200	1200	0.54	0.54	0.00	145	145	0.0
Dabc6a_3	9/26/97	1200	1166	0.64	0.64	0.00	214	214	0.0
Dabc6a_4	9/26/97	1198	1152	0.76	0.76	0.00	204	204	-0.2
Dabc6a_5	9/26/97	1200	1199	0.48	0.48	0.00	184	184	0.0
Dabc6a_6	9/26/97	1200	1200	0.75	0.75	0.00	205	205	0.0
Dabc6a_7	9/26/97	1200	1189	1.05	1.05	0.00	186	186	0.1
Dabc6a_8	9/26/97	1200	1196	1.09	1.09	0.00	199	199	-0.1
Dabc6a_9	9/26/97	1200	1196	1.11	1.11	0.00	162	162	0.0
Dabc6a_x	9/26/97	1184	936	1.01	0.98	0.03	183	185	-2.0
Rws6b_1	9/26/97	1200	1200	2.17	2.17	0.00	267	267	0.0
Rws6b_2	9/26/97	1200	1200	2.24	2.24	0.00	284	284	0.0
Rws6b_4	9/26/97	1139	399	0.98	1.00	-0.02	211	212	-0.9
Rws6b_5	9/26/97	1200	1200	1.13	1.13	0.00	191	191	0.0
Rws6b_6	9/26/97	1200	1191	1.61	1.61	0.00	190	190	0.0
Rws6b_62	9/26/97	1059	748	1.88	1.89	-0.01	198	197	0.2
Rws6b_7	9/26/97	1200	1200	1.62	1.62	0.00	190	190	0.0
Rws6b_8	9/26/97	1200	1198	1.06	1.06	0.00	197	197	0.0
Maf6c-1	9/26/97	1200	1200	0.95	0.95	0.00	221	221	0.0
Maf6c-2	9/26/97	1200	1200	1.50	1.50	0.00	214	214	0.0
Maf6c-3	9/26/97	1200	1181	0.41	0.41	0.00	204	204	0.1
Maf6c-4	9/26/97	1200	1200	0.37	0.37	0.00	245	245	0.0
Maf6c-5	9/26/97	1200	1200	0.29	0.29	0.00	182	182	0.0
Maf6b-7	9/23/97	1196	1073	0.59	0.57	0.02	194	192	1.4
Maf6b-8	9/26/97	1196	1200	1.68	1.68	0.00	155	155	0.1
Maf6b-9	9/26/97	1200	1200	2.17	2.17	0.00	195	195	0.0

Table A - 8. Summary of raw and filtered velocity data, Transects 6A - 6C, C-111 drainage basin, September 26, 1997, 0.6 depth

[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
Dabc6a_1	9/26/97	1200	1200	2.50	2.50	0.00	309	309	0.0
Dabc6a_2	9/26/97	1200	1200	1.22	1.22	0.00	182	182	0.0
Dabc6a_3	9/26/97	1200	1200	0.09	0.09	0.00	212	212	0.0
Dabc6a_4	9/26/97	1175	1022	0.63	0.62	0.01	202	204	-1.2
Dabc6a_5	9/26/97	1185	973	0.59	0.61	-0.02	179	179	0.0
Dabc6a_6	9/26/97	1197	1093	0.56	0.56	0.00	202	202	0.2
Dabc6a_7	9/26/97	1200	1157	0.95	0.95	0.00	199	199	-0.1
Dabc6a_8	9/26/97	1200	1200	0.79	0.79	0.00	194	194	0.0
Dabc6a_9	9/26/97	1200	1200	0.44	0.44	0.00	213	213	0.0
Dabc6a_x	9/26/97	1198	1074	0.71	0.70	0.02	167	167	0.0
Rws6b_1	9/26/97	1200	1200	1.55	1.55	0.00	309	309	0.0
Rws6b_2	9/26/97	1176	1176	0.52	0.52	0.00	242	243	-0.5
Rws6b_3	9/26/97	1200	1200	0.41	0.41	0.00	205	205	0.0
Rws6b_4	9/26/97	1200	1200	0.81	0.81	0.00	223	223	0.0
Rws6b_5	9/26/97	1200	1200	0.18	0.18	0.00	191	191	0.0
Rws6b_6	9/26/97	1200	1199	0.93	0.93	0.00	183	183	0.0
Rws6b_62	9/26/97	1166	1052	1.25	1.14	0.11	163	163	0.1
Rws6b_7	9/26/97	1200	1200	1.50	1.50	0.00	196	196	0.0
Rws6b_8	9/26/97	1200	1200	0.84	0.84	0.00	207	207	0.0
Maf6c-1	9/26/97	1200	1200	0.85	0.85	0.00	185	185	0.0
Maf6c-2	9/26/97	1200	1200	0.91	0.91	0.00	157	157	0.0
Maf6c-3	9/26/97	1200	1138	0.27	0.26	0.00	228	227	0.2
Maf6c-4	9/26/97	1200	1200	0.03	0.03	0.00	194	194	0.0
Maf6c-5	9/26/97	1151	458	0.12	0.12	0.00	189	187	2.0
Maf6c-6	9/26/97	943	817	0.19	0.29	-0.10	224	239	-15.4
Maf6b-7	9/23/97	1200	1200	0.21	0.21	0.00	193	193	0.0
Maf6b-8	9/26/97	1200	1200	0.47	0.47	0.00	161	161	0.0
Maf6b-9	9/26/97	1200	1200	2.33	2.33	0.00	194	194	0.0
Mafqwmon	9/26/97	1200	1200	0.41	0.41	0.00	202	202	0.0

Table A - 9. Summary of raw and filtered velocity data, Transects 6A - 6C, C-111 drainage basin, September 26, 1997, 0.8 depth

[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
Dabc6a_1	9/26/97	1200	1200	1.42	1.42	0.00	276	276	0.0
Dabc6a_2	9/26/97	1200	1200	0.45	0.45	0.00	177	177	0.0
Dabc6a_3	9/26/97	1200	1200	0.03	0.03	0.00	171	171	0.0
Dabc6a_4	9/26/97	1088	679	0.61	0.63	-0.03	198	199	0.1
Dabc6a_5	9/26/97	1200	1200	0.01	0.01	0.00	174	174	0.0
Dabc6a_6	9/26/97	1191	964	0.40	0.40	0.01	196	196	-0.1
Dabc6a_7	9/26/97	1200	1200	0.75	0.75	0.00	200	200	0.0
Dabc6a_8	9/26/97	1200	1150	0.72	0.72	0.00	213	213	-0.1
Dabc6a_9	9/26/97	1200	1200	0.01	0.01	0.00	188	188	0.0
Dabc6a_x	9/26/97	1200	1200	0.01	0.01	0.00	176	176	0.0
Rws6b_1	9/26/97	1164	1164	1.45	1.45	0.00	311	311	0.0
Rws6b_2	9/26/97	1200	1200	0.57	0.58	0.00	246	246	0.0
Rws6b_4	9/26/97	1200	1200	0.60	0.60	0.00	240	240	0.0
Rws6b_5	9/26/97	1200	1200	0.22	0.22	0.00	226	226	0.0
Rws6b_6	9/26/97	1200	1200	0.04	0.04	0.00	188	188	0.0
Rws6b_62	9/26/97	1200	1200	0.04	0.04	0.00	193	193	0.0
Rws6b_7	9/26/97	1200	1200	0.31	0.31	0.00	211	211	0.0
Rws6b_8	9/26/97	1200	1200	0.29	0.29	0.00	208	208	0.0
Maf6c-1	9/26/97	1200	1200	0.96	0.96	0.00	131	131	0.0
Maf6c-3	9/26/97	1199	1068	0.40	0.40	0.00	212	212	0.7
Maf6c-5	9/26/97	1200	1200	0.05	0.05	0.00	198	198	0.0
Maf6c-6	9/26/97	1200	1185	0.16	0.15	0.00	203	203	0.3
Maf6b-7	9/23/97	1199	1200	0.01	0.01	0.00	175	175	0.0
Maf6b-8	9/26/97	1200	1200	0.08	0.08	0.00	222	222	0.0
Maf6b-9	9/26/97	1200	1200	0.89	0.89	0.00	211	211	0.0

Appendix B. Summary of raw and filtered velocity data, C-111 drainage basin, South Florida Everglades, September 1999

Table B - 1. Summary of raw and filtered velocity data, Transects 1 - 12, C-111 drainage basin, September 20 and 22, 1999, 0.2 depth

[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
c1-01	9/20/99	1200	1198	1.93	1.93	0.00	225	225	0.0
c1-02	9/20/99	1200	1200	0.42	0.42	0.00	222	222	0.0
c1-03	9/20/99	1200	1200	0.06	0.06	0.00	209	209	0.0
c1-04	9/20/99	1200	1200	0.11	0.11	0.00	171	171	0.0
c2-01	9/20/99	1196	1196	0.27	0.24	0.03	195	195	0.1
c2-02	9/20/99	1192	1199	0.10	0.07	0.03	194	194	0.3
c2-03	9/20/99	1197	972	0.01	0.03	-0.02	196	196	0.0
c2-04	9/20/99	1200	1042	0.30	0.30	0.00	173	172	-1.1
c2-05	9/20/99	1200	1200	0.04	0.04	0.00	172	172	0.0
mb3_2	9/20/99	769	204	1.32	1.31	0.01	204	205	-1.3
mb3_3	9/20/99	1200	1200	1.38	1.38	0.00	203	203	0.0
mb3_4	9/20/99	1200	1200	0.78	0.78	0.00	187	187	0.0
mb4_1	9/20/99	1199	1190	1.42	1.42	0.00	177	177	0.0
mb4_2	9/20/99	1200	1200	1.42	1.42	0.00	193	193	0.0
mb4_3	9/20/99	1200	1200	1.00	1.00	0.00	198	198	0.0
mb4_4	9/20/99	949	205	1.13	1.13	0.00	184	183	1.2
mb4_5	9/20/99	897	270	1.05	1.08	-0.03	184	185	0.1
c3-1	9/22/99	1200	1200	0.06	0.06	0.00	195	195	0.0
c3-2	9/22/99	1194	1195	0.67	0.66	0.00	201	201	-0.1
c3-3	9/22/99	1200	1200	0.02	0.02	0.00	182	182	0.0
c3-4	9/22/99	1195	862	0.74	0.76	-0.02	213	212	-1.4
c3-5	9/22/99	1189	908	0.62	0.63	-0.01	199	200	1.3
c4-1	9/22/99	1200	1200	0.74	0.74	0.00	205	205	0.0
c4-2	9/22/99	1200	1200	1.16	1.16	0.00	226	226	0.0
c4-3	9/22/99	1058	1118	0.86	0.91	-0.05	203	203	0.0
c4-4	9/22/99	980	1195	0.58	0.75	-0.17	204	216	12.5
c4-5	9/22/99	1200	1200	0.32	0.32	0.00	212	212	0.0
mrt6p1	9/22/99	1200	1120	1.47	1.47	0.01	216	216	0.1
c9-1	9/22/99	1195	1196	0.49	0.47	0.03	242	242	0.3
c9-2	9/22/99	1192	1181	0.24	0.24	0.00	199	199	-0.2
c9-3	9/22/99	1195	1200	0.88	0.87	0.02	186	186	0.1
c9-4	9/22/99	897	907	0.35	0.44	-0.10	185	179	5.9
c9-5	9/22/99	743	744	0.30	0.30	0.00	98	98	0.1
c12-1	9/22/99	1198	1198	0.31	0.34	-0.03	161	161	-0.4
c12-2	9/22/99	1196	1198	0.61	0.62	-0.01	150	150	-0.3
c12-3	9/22/99	1198	1187	0.37	0.38	-0.01	133	133	-0.1
c12-4	9/22/99	1198	1149	0.65	0.65	0.00	157	157	0.2
c12-5	9/22/99	1178	828	0.59	0.60	-0.01	103	104	-0.6

Table B - 2. Summary of raw and filtered velocity data, Transects 1 - 12
C-111 drainage basin, September 20 and 22, 1999, 0.5 depth
[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
c1-01	9/20/99	1188	1200	0.26	0.25	0.00	212	212	0.2
c1-02	9/20/99	1200	1200	0.09	0.09	0.00	199	199	0.0
c1-03	9/20/99	1200	1200	0.34	0.34	0.00	268	268	0.0
c1-04	9/20/99	1200	1200	0.01	0.01	0.00	184	184	0.0
c2-01	9/20/99	1197	1200	0.11	0.10	0.01	161	161	0.0
c2-02	9/20/99	1197	1200	0.07	0.06	0.01	163	163	0.1
c2-03	9/20/99	1191	1157	0.10	0.06	0.05	176	176	-0.1
c2-04	9/20/99	1200	1200	0.02	0.02	0.00	173	173	0.0
c2-05	9/20/99	808	600	0.15	0.12	0.00	156	144	11.8
mb3_1	9/20/99	1337	480	2.24	2.26	-0.02	218	218	-0.3
mb3_2	9/20/99	648	113	0.86	0.84	0.02	214	213	1.0
mb3_3	9/20/99	1200	1200	0.67	0.67	0.00	196	196	0.0
mb3_4	9/20/99	1200	1200	0.16	0.16	0.00	183	183	0.0
mb3_5	9/20/99	1200	1200	0.25	0.25	0.00	189	189	0.0
mb4_1	9/20/99	1199	1191	0.74	0.74	0.00	165	165	0.1
mb4_2	9/20/99	1199	1065	0.62	0.62	0.00	207	207	-0.2
mb4_3	9/20/99	1200	1200	0.42	0.42	0.00	197	197	0.0
mb4_4	9/20/99	1020	439	0.88	0.71	0.17	181	180	0.8
mb4_5	9/20/99	909	221	0.74	0.78	-0.04	193	193	0.0
c3-1	9/22/99	1200	1200	0.24	0.24	0.00	219	219	0.0
c3-2	9/22/99	1200	1200	0.10	0.10	0.00	192	192	0.0
c3-3	9/22/99	1120	476	0.81	0.83	-0.02	173	178	-4.2
c3-4	9/22/99	1200	1200	0.21	0.21	0.00	159	159	0.0
c3-5	9/22/99	1200	1200	0.04	0.04	0.00	160	160	0.0
c4-1	9/22/99	1200	1200	0.62	0.62	0.00	162	162	0.0
c4-2	9/22/99	1200	1200	0.40	0.40	0.00	105	105	0.0
c4-3	9/22/99	1197	1200	0.20	0.20	0.00	187	188	-0.1
c4-4	9/22/99	1200	1200	1.10	1.10	0.00	240	240	0.0
c4-5	9/22/99	1200	1200	0.18	0.18	0.00	154	154	0.0
mrt6p1	9/22/99	1190	948	2.27	2.34	-0.08	232	233	-0.5
mrt6p2	9/22/99	1111	354	0.73	0.74	-0.01	211	210	1.5
mrt6p3	9/22/99	647	495	0.31	0.41	-0.10	184	191	-6.6
mrt6p4	9/22/99	1199	1200	0.41	0.41	0.00	246	246	0.1
mrt6p5	9/22/99	1183	889	1.02	1.02	0.00	198	198	-0.1
c9-1	9/22/99	1198	1199	0.33	0.30	0.03	210	210	0.3
c9-2	9/22/99	1192	1200	0.19	0.19	0.00	174	174	0.1
c9-3	9/22/99	1199	1198	0.55	0.52	0.03	184	184	-0.3
c9-4	9/22/99	1187	1188	0.14	0.15	-0.01	210	210	-0.1
c9-5	9/22/99	1200	1198	0.35	0.36	-0.01	122	122	0.2
c12-1	9/22/99	1196	1200	0.32	0.32	0.01	177	177	0.0
c12-2	9/22/99	1191	1200	0.25	0.29	-0.04	159	159	0.2
c12-3	9/22/99	1195	1200	0.16	0.17	-0.01	117	117	0.5
c12-4	9/22/99	1190	1188	0.66	0.66	0.00	166	166	0.1
c12-5	9/22/99	1194	961	0.50	0.50	0.00	97	97	0.0

Table B - 3. Summary of raw and filtered velocity data, Transects 1 - 12, C-111 drainage basin, September 20 and 22, 1999, 0.8 depth

[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
c2-02	9/20/99	1198	1199	0.03	0.02	0.01	190	190	0.1
c2-03	9/20/99	1194	1200	0.11	0.05	0.06	172	172	-0.2
c2-04	9/20/99	1200	1200	0.00	0.00	0.00	176	176	0.0
c2-05	9/20/99	1200	1200	0.36	0.36	-0.06	209	209	1.0
mb3_2	9/20/99	1200	1200	0.99	0.99	0.00	234	234	0.0
mb3_3	9/20/99	1200	1200	0.49	0.49	0.00	228	228	0.0
mb3_4	9/20/99	1176	1176	0.24	0.24	0.00	189	189	0.0
mb4_1	9/20/99	1199	1200	0.31	0.31	0.00	181	181	0.0
mb4_2	9/20/99	1194	847	0.70	0.76	-0.06	201	200	-1.0
mb4_3	9/20/99	1164	1164	0.78	0.78	0.00	213	213	0.0
mb4_4	9/20/99	1131	267	0.59	0.73	-0.14	194	194	0.4
mb4_5	9/20/99	881	377	0.46	0.48	-0.02	194	196	1.7
c3-2	9/22/99	1200	1200	0.23	0.23	0.00	166	166	0.0
c3-3	9/22/99	1200	1200	0.01	0.01	0.00	191	191	0.0
c3-4	9/22/99	1200	1200	0.06	0.06	0.00	199	199	0.0
c3-5	9/22/99	1188	1137	0.51	0.51	0.00	205	205	0.0
c4-1	9/22/99	1200	1200	0.09	0.09	0.00	173	173	0.0
c4-2	9/22/99	1200	1200	0.15	0.15	0.00	162	162	0.0
c4-4	9/22/99	1200	1200	0.50	0.50	0.00	235	235	0.0
c4-5	9/22/99	1200	1200	0.04	0.04	0.00	162	162	0.0
mrt6p1	9/22/99	1199	1083	1.16	1.13	0.04	203	201	-1.3
c9-1	9/22/99	1194	1199	0.14	0.06	0.08	201	201	0.0
c9-5	9/22/99	594	594	0.23	0.23	0.00	113	113	0.0

Table B - 4. Summary of raw and filtered velocity data, ENP Boundary Transects
C-111 drainage basin, September 22, 1999, 0.2 depth
[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
enp_ns1	9/22/99	1186	1185	4.14	4.14	0.00	152	152	0.0
enp_ns2	9/22/99	1200	948	2.01	2.00	0.01	166	167	-0.1
enp_ns3	9/22/99	1199	1200	1.96	2.02	-0.06	176	176	0.0
enp_ns4	9/22/99	1177	1078	2.30	2.35	-0.05	172	172	0.0
enp_ns7	9/22/99	1200	1199	3.07	3.07	0.00	164	164	0.0
enp_ns12	9/22/99	1199	1200	3.78	3.78	0.00	167	167	0.0
enp_ns14	9/22/99	1198	792	3.09	3.15	-0.06	145	146	0.5
enp_ns15	9/22/99	1198	1200	2.39	2.39	0.00	202	202	0.1
enp_ns16	9/22/99	1193	1199	1.57	1.56	0.00	178	179	0.5
enp_ns17	9/22/99	1062	1200	1.66	1.65	0.01	162	160	-1.2
enp_ns18	9/22/99	1182	1198	0.60	0.60	-0.01	192	194	1.4
enp_ns19	9/22/99	1196	1198	1.50	1.50	0.00	169	169	0.0
enp_ns20	9/22/99	1195	1200	0.80	0.81	0.00	187	187	-0.1
enp_ns21	9/22/99	1198	1200	0.49	0.48	0.01	164	164	0.0
enp_ns22	9/22/99	116	763	0.53	0.91	-0.38	149	160	10.8
enp_ew23	9/22/99	1196	1046	0.99	0.98	0.00	218	218	-0.1
enp_ew24	9/22/99	1180	665	0.65	0.65	0.00	204	203	1.1
enp_ew25	9/22/99	1192	981	0.61	0.61	0.00	204	204	0.1
enp_ew26	9/22/99	1200	1181	0.80	0.80	0.00	196	196	-0.1
enp_ew27	9/22/99	1197	845	0.65	0.66	0.00	152	152	0.3
enp_ew28	9/22/99	1171	1008	1.41	1.39	0.02	176	176	-0.4
enp_ew29	9/22/99	1196	877	0.94	0.94	0.00	171	172	-0.2
enp_ew30	9/22/99	1200	1200	1.30	1.30	0.00	192	192	0.0
enp_ew31	9/22/99	1072	401	0.86	0.89	-0.03	194	193	1.0
enp_ew32	9/22/99	1198	1064	0.55	0.55	0.00	196	196	-0.6
enp_ew33	9/22/99	1184	811	0.72	0.73	-0.01	195	195	-0.6
enp_ew34	9/22/99	1181	784	0.64	0.64	0.00	204	204	-0.8
enp_ew35	9/22/99	1200	1182	0.49	0.49	0.00	208	208	0.0
enp_ew36	9/22/99	1119	468	0.66	0.66	0.01	219	219	0.0
enp_ew_3	9/22/99	1197	1200	0.98	0.98	0.00	195	195	0.0
enp_ew_2	9/22/99	1023	1197	1.20	0.56	0.64	188	190	1.5
enp_ew_1	9/22/99	1167	1198	0.50	0.49	0.01	199	199	-0.3
enp_e1	9/23/99	673	235	0.76	0.80	-0.04	193	190	2.3
enp_e2	9/23/99	659	144	1.20	1.28	-0.08	174	174	-0.4

Table B - 5. Summary of raw and filtered velocity data, ENP Boundary Transects
C-111 drainage basin, September 22, 1999, 0.5 depth
[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
enp_ns1	9/22/99	1181	1122	5.41	5.36	0.05	148	148	0.1
enp_ns2	9/22/99	1158	1117	0.78	0.81	-0.03	171	171	-0.1
enp_ns3	9/22/99	1198	1200	2.17	2.17	0.00	177	177	0.0
enp_ns4	9/22/99	1200	1115	2.43	2.44	-0.01	174	174	0.0
enp_ns5	9/22/99	1197	1197	2.34	2.35	-0.01	189	189	0.0
enp_ns6	9/22/99	1200	1200	2.98	2.98	0.00	161	161	0.0
enp_ns7	9/22/99	1200	1200	2.01	2.01	0.00	177	177	0.0
enp_ns8	9/22/99	1200	1052	2.54	2.54	0.00	150	150	0.0
enp_ns9	9/22/99	1198	1190	4.56	4.57	0.00	163	163	-0.1
enp_ns10	9/22/99	1200	1183	2.71	2.71	0.00	149	149	0.0
enp_ns11	9/22/99	1199	1162	3.69	3.69	0.00	181	181	0.0
enp_ns12	9/22/99	1200	1200	3.50	3.50	0.00	169	169	0.0
enp_ns13	9/22/99	1199	1199	3.03	3.03	0.00	157	157	0.0
enp_ns14	9/22/99	1200	866	2.42	2.45	-0.04	151	151	-0.1
enp_ns15	9/22/99	1200	1200	1.36	1.36	0.00	196	196	0.0
enp_ns16	9/22/99	1198	1198	1.08	1.08	0.00	179	179	0.0
enp_ns17	9/22/99	1199	1200	0.11	0.11	0.00	206	206	0.1
enp_ns18	9/22/99	1200	1200	0.02	0.02	0.00	180	180	0.0
enp_ns20	9/22/99	1198	1200	0.02	0.02	0.00	187	187	0.2
enp_ns21	9/22/99	538	1197	0.69	0.63	0.06	168	172	4.4
enp_ns22	9/22/99	1197	1197	0.13	0.13	0.00	194	194	0.0
enp_ew23	9/22/99	1200	1135	0.72	0.72	0.00	213	212	0.2
enp_ew24	9/22/99	1115	305	0.47	0.46	0.00	207	207	0.3
enp_ew25	9/22/99	1197	964	0.55	0.54	0.00	207	207	-0.4
enp_ew26	9/22/99	1200	1191	0.47	0.47	0.00	185	185	0.1
enp_ew27	9/22/99	1193	771	0.54	0.54	-0.01	158	158	-0.2
enp_ew28	9/22/99	1200	1171	0.88	0.88	0.00	183	183	0.1
enp_ew29	9/22/99	1200	1190	0.46	0.46	0.00	177	177	0.0
enp_ew30	9/22/99	1200	1200	0.86	0.86	0.00	199	199	0.0
enp_ew31	9/22/99	1045	390	0.51	0.50	0.00	183	183	-0.4
enp_ew32	9/22/99	1200	1056	0.52	0.53	0.00	209	209	0.7
enp_ew33	9/22/99	1096	607	0.38	0.39	-0.01	212	212	-0.1
enp_ew34	9/22/99	1133	616	0.62	0.62	0.00	205	204	0.4
enp_ew35	9/22/99	1189	713	0.41	0.42	-0.01	209	209	0.2
enp_ew36	9/22/99	1035	470	0.67	0.68	-0.01	215	215	-0.1
enp_ew_3	9/22/99	637	1200	0.85	0.81	0.04	169	181	-12.4
enp_ew_2	9/22/99	1200	1200	0.01	0.01	0.00	176	176	0.0
enp_ew_1	9/22/99	1100	1199	0.36	0.42	-0.05	169	168	0.4
enp_e1	9/23/99	875	348	0.55	0.53	0.02	193	193	-0.6
enp_e2	9/23/99	784	295	0.87	0.92	-0.06	173	173	0.7
enp_e3	9/23/99	954	342	1.10	1.16	-0.06	159	157	1.8
enp_e4	9/23/99	900	264	1.48	1.55	-0.07	181	181	-0.1
enp_e5	9/23/99	904	212	2.04	2.13	-0.09	180	178	1.7
enp_e6	9/23/99	1084	444	1.65	1.73	-0.08	129	128	0.3
enp_e7	9/23/99	1196	1136	0.37	0.37	0.00	171	170	0.3

Table B - 6. Summary of raw and filtered velocity data, ENP Boundary Transects
C-111 drainage basin, September 22, 1999, 0.8 depth
[Corr. = correlation, SNR = signal to noise ratio, Δ = Raw - Filtered, MN = magnetic north]

Site	Date	Corr.	SNR	Velocity (cm/s)			Flow Direction (MN)		
				Raw	Filtered	Δ	Raw	Filtered	Δ
enp_ns1	9/22/99	1193	1194	4.57	4.58	-0.01	147	147	0.0
enp_ns2	9/22/99	1187	1162	0.61	0.62	0.00	197	197	0.1
enp_ns3	9/22/99	1200	1200	1.67	1.65	0.02	181	181	0.0
enp_ns4	9/22/99	1200	1182	0.42	0.42	0.00	184	185	0.3
enp_ns7	9/22/99	1196	1200	1.06	1.07	0.00	162	162	-0.1
enp_ns9	9/22/99	1200	1171	2.20	2.20	0.00	159	159	0.0
enp_ns10	9/22/99	1200	1038	1.99	1.99	0.00	149	149	0.1
enp_ns12	9/22/99	1200	1200	1.72	1.72	0.00	179	179	0.0
enp_ns13	9/22/99	1199	1200	2.10	2.10	0.00	157	157	0.0
enp_ns14	9/22/99	1199	1024	1.42	1.44	-0.01	161	161	0.0
enp_ns15	9/22/99	1200	1196	0.01	0.01	0.00	189	189	0.1
enp_ns16	9/22/99	1200	1200	0.02	0.02	0.00	185	185	0.0
enp_ns17	9/22/99	1052	294	0.05	0.06	-0.01	186	185	1.7
enp_ns18	9/22/99	1200	775	0.03	0.02	0.01	172	172	-0.3
enp_ns19	9/22/99	1200	1200	0.58	0.58	0.00	189	189	0.0
enp_ns20	9/22/99	1200	1200	0.01	0.01	0.00	188	188	0.0
enp_ns21	9/22/99	1199	1194	0.59	0.59	0.00	183	183	0.2
enp_ns22	9/22/99	1200	1200	0.05	0.05	0.00	182	182	0.0
enp_ew23	9/22/99	1200	1200	0.07	0.07	0.00	185	185	0.0
enp_ew24	9/22/99	1199	978	0.16	0.15	0.00	189	191	1.8
enp_ew25	9/22/99	1200	1200	0.01	0.01	0.00	185	185	0.0
enp_ew26	9/22/99	1200	1200	0.01	0.01	0.00	191	191	0.0
enp_ew27	9/22/99	1187	829	0.60	0.60	0.00	172	170	-1.0
enp_ew28	9/22/99	1200	1200	0.07	0.07	0.00	183	183	0.0
enp_ew29	9/22/99	1200	1200	0.01	0.01	0.00	182	182	0.0
enp_ew30	9/22/99	1200	1200	0.77	0.77	0.00	191	191	0.0
enp_ew31	9/22/99	1200	1200	0.02	0.02	0.00	184	184	0.0
enp_ew32	9/22/99	1200	1041	0.63	0.64	0.00	180	180	0.4
enp_ew33	9/22/99	1073	618	0.36	0.38	-0.03	202	208	6.3
enp_ew34	9/22/99	1200	1200	0.01	0.01	0.00	184	184	0.0
enp_ew35	9/22/99	1200	1200	0.01	0.01	0.00	171	171	0.0
enp_ew36	9/22/99	1155	602	0.25	0.25	0.00	200	201	1.2
enp_ew_e3	9/22/99	1191	1200	0.07	0.07	0.00	189	190	-1.0
enp_ew_e2	9/22/99	1200	1200	0.02	0.02	0.00	174	174	0.0
enp_ew_e1	9/22/99	1121	880	0.09	0.09	0.00	196	197	-0.7
enp_e1	9/23/99	1193	1153	0.10	0.10	0.01	171	171	0.3
enp_e2	9/23/99	790	395	0.77	0.83	-0.06	171	166	-4.6

Appendix C. Data quality indicators, C-111 drainage basin, South Florida Everglades, September 1997

Table C - 1. Data quality indicators, Transects 1 - 5, C-111 drainage basin, September 23, 1997
[Good = velocity standard deviation ≤ 0.3 cm/s, Fair = velocity standard devation > 0.3 cm/s and ≤ 0.5 cm/s, Poor = velocity standard deviation > 0.5 cm/s]

		East - west component			North-south component			Up-down component			
Site	Date	0.2 d	0.6 d	0.8 d	0.2 d	0.6 d	0.8 d	0.2 d	0.6 d	0.8 d	% Good
Dmsc1_1	9/23/97	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Fair	0
Dmsc1_2	9/23/97	Poor	Poor		Poor	Poor		Fair	Fair	Good	17
Dmsc1_3	9/23/97	Poor	Poor		Poor	Poor		Fair	Fair	Good	17
Dmsc1_4	9/23/97	Good	Good	Poor	Good	Good	Poor	Good	Good	Good	78
Dmsc1_5	9/23/97	Poor	Fair	Fair	Poor	Fair	Fair	Fair	Good	Good	22
Dmsc1_6	9/23/97	Fair	Fair	Good	Fair	Fair	Good	Good	Fair	Good	44
Dmsc1_7	9/23/97	Fair	Good	Good	Fair	Fair	Fair	Good	Good	Good	56
Dmsc1_8	9/23/97	Fair	Good	Good	Fair	Good	Fair	Good	Good	Good	67
Dmsc2_1	9/23/97	Fair	Fair		Poor	Fair		Good	Good	Good	50
Dmsc2_2	9/23/97	Poor	Poor		Fair	Poor		Fair	Poor	Good	17
Dmsc2_3	9/23/97	Good	Fair		Good	Poor		Good	Good	Good	83
Dmsc3_1	9/23/97	Poor	Poor		Poor	Poor		Poor	Fair	Good	17
Dmsc3_2	9/23/97	Fair	Poor		Fair	Poor		Good	Fair	Good	33
Dmsc3_3	9/23/97	Fair	Fair		Fair	Poor		Good	Fair	Good	33
Dmsc3_4	9/23/97	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
Dmsc3_5	9/23/97	Fair	Good	Fair	Good	Good	Fair	Good	Good	Good	67
Dmsc3_6	9/23/97	Good	Good	Poor	Good	Good	Fair	Good	Good	Good	78
Dmsc3_7	9/23/97	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
Dmsc3_9	9/23/97	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
Dabc4_1	9/23/97	Poor	Poor	Poor	Poor	Poor	Fair	Good	Good	Good	33
Dabc4_2	9/23/97	Poor	Fair	Fair	Poor	Poor	Fair	Poor	Fair	Good	11
Dabc4_3	9/23/97	Fair	Good	Fair	Fair	Good	Fair	Good	Good	Good	56
Dabc4_4	9/23/97	Fair	Good	Good	Fair	Good	Good	Good	Good	Good	78
Dabc4_5r	9/23/97	Fair	Fair	Poor	Fair	Fair	Poor	Good	Good	Good	33
Dabc4_6	9/23/97	Fair	Poor	Fair	Poor	Poor	Fair	Good	Good	Good	33
Dabc5_1	9/23/97	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	0
Dabc5_2	9/23/97	Poor	Poor	Fair	Poor	Poor	Poor	Poor	Fair	Fair	0
Dabc5_3	9/23/97	Good	Good	Good	Good	Fair	Fair	Good	Good	Good	78
Dabc5_4	9/23/97	Poor	Fair	Good	Poor	Fair	Good	Good	Good	Good	56
Dabc5_5	9/23/97	Good	Good	Good	Good	Good	Fair	Good	Good	Good	89
Dabc5_6	9/23/97	Poor	Fair	Good	Fair	Good	Good	Good	Good	Good	67

Table C - 2. Data quality indicators, Transects 6 - 9, C-111 drainage basin, September 23, 1997
[Good = velocity standard deviation ≤ 0.3 cm/s, Fair = velocity standard devation > 0.3 cm/s and ≤ 0.5 cm/s, Poor = velocity standard deviation > 0.5 cm/s]

		East - west component				North-south component	Up-down component				
Site	Date	0.2 d	0.6 d	0.8 d	0.2 d	0.6 d	0.8 d	0.2 d	0.6 d	0.8 d	% Good
Gbd6-2	9/23/97	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	0
Gbd6-3	9/23/97	Good	Good	Poor	Good	Fair	Poor	Good	Good	Poor	56
Gbd6-4	9/23/97	Fair	Good	Fair	Good	Good	Fair	Good	Good	Good	67
Gbd6-5	9/23/97	Good	Good	Poor	Poor	Fair	Poor	Good	Good	Good	56
Gbd6-6	9/23/97	Good	Fair	Poor	Good	Good	Fair	Good	Good	Good	67
Gbd7-1	9/23/97	Poor	Poor	Poor	Poor	Fair	Poor	Poor	Poor	Poor	0
Gbd7-2	9/23/97	Poor	Fair	Poor	Fair	Fair	Fair	Fair	Good	Poor	11
Gbd7-3	9/23/97	Good	Fair	Fair	Fair	Fair	Fair	Good	Good	Fair	33
Gbd7-4	9/23/97	Good	Fair	Fair	Good	Fair	Fair	Good	Good	Good	56
Gbd7-5	9/23/97	Good	Fair	Fair	Good	Fair	Fair	Good	Good	Good	56
Gbd7-6	9/23/97	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	33
Gbd8-1	9/23/97	Fair	Fair	Poor	Poor	Fair	Poor	Fair	Fair	Poor	0
Gbd8-2	9/23/97	Fair	Poor	Poor	Fair	Poor	Poor	Good	Fair	Poor	11
Gbd8-3	9/23/97	Poor	Poor	Poor	Poor	Fair	Poor	Good	Fair	Poor	11
Gbd8-4	9/23/97	Good	Fair	Fair	Good	Fair	Fair	Good	Good	Good	56
Gbd8-5	9/23/97	Good	Good	Fair	Good	Good	Fair	Good	Good	Good	78
Gbd8-6	9/23/97	Fair	Good	Good	Good	Good	Fair	Good	Good	Good	78
Gbd9-1	9/23/97	Good	Fair	Fair	Good	Fair	Fair	Good	Good	Good	56
Gbd9-3	9/23/97	Good	Fair		Good	Fair		Good	Good	Good	83

Table C - 3. Data quality indicators, Transects 6A - 6C, C-111 drainage basin, September 26, 1997
[Good = velocity standard deviation ≤ 0.3 cm/s, Fair = velocity standard devation > 0.3 cm/s and ≤ 0.5 cm/s, Poor = velocity standard deviation > 0.5 cm/s]

		East - west component				North-south component		Up-down component			
Site	Date	0.2 d	0.6 d	0.8 d	0.2 d	0.6 d	0.8 d	0.2 d	0.6 d	0.8 d	% Good
Dabc6a_1	9/26/97	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Good	11
Dabc6a_2	9/26/97	Poor	Good	Good	Poor	Fair	Good	Fair	Good	Good	56
Dabc6a_3	9/26/97	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
Dabc6a_4	9/26/97	Good	Good	Good	Good	Good	Fair	Good	Good	Good	89
Dabc6a_5	9/26/97	Good	Fair	Good	Good	Fair	Good	Good	Good	Good	78
Dabc6a_6	9/26/97	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
Dabc6a_7	9/26/97	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
Dabc6a_8	9/26/97	Fair	Good	Good	Good	Good	Good	Good	Good	Good	89
Dabc6a_9	9/26/97	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
Dabc6a_x	9/26/97	Fair	Good	Good	Good	Good	Good	Good	Good	Good	89
Rws6b_1	9/26/97	Poor	Fair	Fair	Poor	Poor	Fair	Poor	Fair	Fair	0
Rws6b_2	9/26/97	Poor	Fair	Good	Poor	Good	Good	Fair	Good	Good	56
Rws6b_3	9/26/97		Good			Good			Good		100
Rws6b_4	9/26/97	Poor	Good	Good	Poor	Fair	Good	Good	Good	Good	67
Rws6b_5	9/26/97	Good	Good	Poor	Good	Good	Poor	Good	Good	Poor	67
Rws6b_6	9/26/97	Fair	Fair	Good	Fair	Fair	Good	Good	Fair	Good	44
Rws6b_62	9/26/97	Poor	Poor	Fair	Poor	Poor	Poor	Poor	Fair	Fair	0
Rws6b_7	9/26/97	Fair	Fair	Fair	Good	Fair	Good	Good	Good	Good	56
Rws6b_8	9/26/97	Fair	Fair	Good	Fair	Fair	Good	Good	Good	Good	56
Maf6c-1	9/26/97	Poor	Fair	Fair	Poor	Fair	Fair	Poor	Fair	Good	11
Maf6c-2	9/26/97	Poor	Fair		Poor	Fair		Fair	Good		17
Maf6c-3	9/26/97	Good	Good	Good	Good	Fair	Good	Good	Good	Good	89
Maf6c-4	9/26/97	Good	Good		Good	Good		Good	Good		100
Maf6c-5	9/26/97	Good	Good	Good	Fair	Good	Good	Good	Good	Good	89
Maf6c-6	9/26/97		Good	Fair		Fair	Fair		Good	Good	50
Maf6b-7	9/26/97	Good	Good	Good	Fair	Good	Good	Good	Good	Good	89
Maf6b-8	9/26/97	Fair	Good	Good	Fair	Good	Good	Fair	Good	Good	67
Maf6b-9	9/26/97	Fair	Fair	Fair	Poor	Poor	Fair	Good	Fair	Good	22
mafqwmon	9/26/97		Good			Good			Good		100

Appendix D. Data quality indicators, C-111 drainage basin, South Florida Everglades, September 1999

Table D - 1. Data quality indicators, Transects 1 - 12, C-111 drainage basin, September 20 and 22, 1999

[Good = velocity standard deviation ≤ 0.3 cm/s, Fair = velocity standard deviation > 0.3 cm/s and ≤ 0.5 cm/s, Poor = velocity standard deviation > 0.5 cm/s]

Site	Date	East - west component			North-south component			Up-down component			% Good
		0.2 d	0.5 d	0.8 d	0.2 d	0.5 d	0.8 d	0.2 d	0.5 d	0.8 d	
c1-01	9/20/99	Poor	Fair		Poor	Good		Good	Good		50
c1-02	9/20/99	Good	Good		Fair	Good		Good	Good		83
c1-03	9/20/99	Good	Good		Good	Good		Good	Good		100
c1-04	9/20/99	Good	Good		Good	Good		Good	Good		100
c2-01	9/20/99	Poor	Poor		Poor	Poor		Fair	Fair		0
c2-02	9/20/99	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Fair	22
c2-03	9/20/99	Poor	Poor	Poor	Poor	Poor	Poor	Good	Fair	Fair	11
c2-04	9/20/99	Fair	Good	Good	Fair	Good	Good	Good	Good	Good	78
c2-05	9/20/99	Fair	Good	Good	Fair	Good	Fair	Good	Good	Good	67
mb3_1	9/20/99		Fair			Poor			Fair		0
mb3_2	9/20/99	Poor	Poor	Good	Fair	Fair	Good	Good	Good	Good	56
mb3_3	9/20/99	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
mb3_4	9/20/99	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
mb3_5	9/20/99		Good			Good			Good		100
mb4_1	9/20/99	Fair	Fair	Good	Good	Fair	Good	Good	Good	Good	67
mb4_2	9/20/99	Fair	Fair	Good	Good	Good	Fair	Good	Good	Good	67
mb4_3	9/20/99	Good	Fair	Good	Good	Fair	Good	Good	Good	Good	78
mb4_4	9/20/99	Fair	Fair	Good	Fair	Poor	Fair	Good	Good	Good	44
mb4_5	9/20/99	Fair	Fair	Fair	Fair	Fair	Fair	Good	Good	Good	33
c3-1	9/22/99	Good	Good		Good	Good		Good	Good		100
c3-2	9/22/99	Good	Good	Good	Good	Good	Fair	Good	Good	Good	89
c3-3	9/22/99	Good	Fair	Good	Good	Good	Good	Good	Good	Good	89
c3-4	9/22/99	Fair	Good	Good	Good	Good	Good	Good	Good	Good	89
c3-5	9/22/99	Good	Good	Fair	Good	Good	Good	Good	Good	Good	56
c4-1	9/22/99	Good	Good	Good	Good	Fair	Good	Good	Good	Good	89
c4-2	9/22/99	Fair	Good	Fair	Fair	Fair	Fair	Good	Good	Good	44
c4-3	9/22/99	Poor	Fair		Poor	Good		Good	Good		50
c4-4	9/22/99	Poor	Good	Good	Poor	Good	Good	Good	Good	Good	78
c4-5	9/22/99	Good	Fair	Good	Fair	Fair	Good	Good	Good	Good	67
mrt6p1	9/22/99	Fair	Fair	Poor	Fair	Poor	Fair	Good	Fair	Fair	11
mrt6p2	9/22/99		Fair			Fair			Good		33
mrt6p3	9/22/99		Poor			Poor			Good		33
mrt6p4	9/22/99		Good			Good			Good		100
mrt6p5	9/22/99		Fair			Fair			Good		33
c9-1	9/22/99	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Good	33
c9-2	9/22/99	Good	Good		Good	Good		Good	Good		100
c9-3	9/22/99	Poor	Poor		Poor	Poor		Good	Good		50
c9-4	9/22/99	Fair	Poor		Poor	Poor		Good	Good		33
c9-5	9/22/99		Poor	Good		Poor	Good		Good	Good	67
c12-1	9/22/99	Poor	Poor		Poor	Poor		Good	Good		33
c12-2	9/22/99	Poor	Poor		Poor	Poor		Fair	Fair		83
c12-3	9/22/99	Poor	Poor		Poor	Poor		Fair	Fair		100
c12-4	9/22/99	Fair	Good		Good	Good		Good	Good		83
c12-5	9/22/99	Good	Good		Good	Good		Good	Good		100

Table D - 2. Data quality indicators, ENP Boundary Transects, C-111 drainage basin, September 22 and 23, 1999

[Good = velocity standard deviation ≤ 0.3 cm/s, Fair = velocity standard devation > 0.3 cm/s and ≤ 0.5 cm/s, Poor = velocity standard deviation > 0.5 cm/s]

Site	Date	East - west component			North-south component			Up-down component			% Good
		0.2 d	0.5 d	0.8 d	0.2 d	0.5 d	0.8 d	0.2 d	0.5 d	0.8 d	
enp_ns1	9/22/99	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	0
enp_ns2	9/22/99	Fair	Fair	Good	Fair	Fair	Good	Good	Good	Good	56
enp_ns3	9/22/99	Good	Good	Good	Poor	Poor	Fair	Good	Good	Good	67
enp_ns4	9/22/99	Fair	Fair	Good	Fair	Fair	Fair	Good	Good	Good	44
enp_ns5	9/22/99		Good			Fair			Good		67
enp_ns6	9/22/99		Fair			Fair			Good		33
enp_ns7	9/22/99	Fair	Fair	Fair	Fair	Poor	Fair	Good	Fair	Good	22
enp_ns8	9/22/99		Fair			Fair			Good		33
enp_ns9	9/22/99		Fair	Poor		Poor	Poor	Fair	Fair		0
enp_ns10	9/22/99		Fair	Fair		Fair	Poor		Fair	Fair	0
enp_ns11	9/22/99		Poor			Fair			Fair		0
enp_ns12	9/22/99	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Poor	Fair	0
enp_ns13	9/22/99		Poor	Poor		Poor	Poor		Fair	Fair	0
enp_ns14	9/22/99	Poor	Poor	Poor	Poor	Poor	Poor	Fair	Fair	Fair	0
enp_ns15	9/22/99	Fair	Fair	Poor	Fair	Fair	Fair	Fair	Good	Good	22
enp_ns16	9/22/99	Poor	Fair	Fair	Poor	Fair	Fair	Good	Good	Good	33
enp_ns17	9/22/99	Poor	Good	Poor	Poor	Good	Poor	Fair	Good	Good	44
enp_ns18	9/22/99	Fair	Good	Poor	Poor	Good	Fair	Good	Good	Good	56
enp_ns19	9/22/99	Good		Good	Good		Good	Good		Good	100
enp_ns20	9/22/99	Poor	Good	Good	Fair	Fair	Good	Good	Good	Good	67
enp_ns21	9/22/99	Good	Poor	Fair	Fair	Poor	Poor	Good	Fair	Good	33
enp_ns22	9/22/99	Poor	Fair	Fair	Poor	Good	Good	Poor	Good	Good	44
enp_ew23	9/22/99	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
enp_ew24	9/22/99	Good	Fair	Good	Good	Good	Good	Good	Good	Good	89
enp_ew25	9/22/99	Fair	Good	Good	Good	Good	Good	Good	Good	Good	89
enp_ew26	9/22/99	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
enp_ew27	9/22/99	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
enp_ew28	9/22/99	Fair	Good	Good	Fair	Good	Good	Good	Good	Good	78
enp_ew29	9/22/99	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
enp_ew30	9/22/99	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
enp_ew31	9/22/99	Fair	Fair	Good	Fair	Fair	Good	Good	Good	Good	56
enp_ew32	9/22/99	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
enp_ew33	9/22/99	Good	Good	Fair	Good	Fair	Fair	Good	Good	Good	67
enp_ew34	9/22/99	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
enp_ew35	9/22/99	Good	Good	Good	Good	Good	Good	Good	Good	Good	100
enp_ew36	9/22/99	Poor	Fair	Good	Fair	Fair	Good	Good	Good	Good	56
enp_ew3	9/22/99	Fair	Poor	Fair	Poor	Poor	Good	Good	Poor	Good	33
enp_ew2	9/22/99	Poor	Fair	Poor	Poor	Fair	Poor	Poor	Good	Good	22
enp_ew1	9/22/99	Poor	Poor	Fair	Poor	Poor	Fair	Good	Fair	Good	22
enp_e1	9/23/99	Poor	Fair	Good	Poor	Fair	Good	Good	Good	Good	56
enp_e2	9/23/99	Poor	Poor	Poor	Poor	Poor	Poor	Good	Good	Good	33
enp_e3	9/23/99		Fair			Fair			Good		33
enp_e4	9/23/99		Fair			Poor			Good		33
enp_e5	9/23/99		Fair			Fair			Good		33
enp_e6	9/23/99		Fair			Fair			Good		33
enp_e7	9/23/99		Fair			Good			Good		67

Appendix E. Site summary, C-111 drainage basin, South Florida Everglades, September 1997

Table E - 1. Site summary, Transects 1 - 5, C-111 drainage basin, September 23, 1997
[MN = magnetic north, Temp = Temperature, Cond = Conductivity, DO = dissolved oxygen]

Site ID	Date	Location		Flow Parameters			Water Quality Parameters				
		UTM NAD 83		Depth	Velocity	Flow Direction	Temp	Cond	Salinity	pH	DO
		Easting	Northing	(m)	(cm/s)	(MN)	(°C)	(µS)	(ppt)		(ppm)
Dmsc1_1	9/23/97	554949	2797138	0.22	2.21	260	27.6	396	0.16	7.5	4.1
Dmsc1_2	9/23/97	554934	2797073	0.19	2.72	247	27.8	424	0.16	7.5	4.6
Dmsc1_3	9/23/97	554953	2797154	0.23	1.61	226	28.4	430	0.16	7.6	5.1
Dmsc1_4	9/23/97	554935	2797022	0.35	0.02	164	28.2	412	0.16	7.5	4.6
Dmsc1_5	9/23/97	554931	2796981	0.39	1.36	177	28.2	399	0.16	7.6	6.3
Dmsc1_6	9/23/97	554776	2796919	0.32	0.54	194	28.1	418	0.16	7.7	7.2
Dmsc1_7	9/23/97	554567	2796647	0.40	0.57	186	29.7	449	0.16	7.8	8.3
Dmsc1_8	9/23/97	554455	2796525	0.38	0.13	191	29.2	462	0.16	7.8	8.1
Dmsc2_1	9/23/97	553785	2797615	0.19	0.45	185	29.2	371	0.16	7.7	7.1
Dmsc2_2	9/23/97	553870	2797530	0.22	1.06	241	29.6	431	0.16	7.7	7.0
Dmsc2_3	9/23/97	553781	2797561	0.22	0.58	214	29.7	445	0.16	7.7	7.1
Dmsc3_1	9/23/97	553334	2797820	0.27	0.88	170	28.8	439	0.16	7.6	6.1
Dmsc3_2	9/23/97	553224	2797760	0.22	1.44	232	29.8	263	0.11	7.7	8.3
Dmsc3_3	9/23/97	553416	2797840	0.20	0.68	218	30.2	476	0.21	7.7	7.7
Dmsc3_4	9/23/97	553184	2797697	0.26	0.11	179	29.9	413	0.21	7.8	9.7
Dmsc3_5	9/23/97	553179	2797635	0.47	0.56	183	29.2	418	0.21	7.7	7.5
Dmsc3_6	9/23/97	553134	2797437	0.45	0.46	203	29.6	450	0.21	7.7	7.4
Dmsc3_7	9/23/97	553004	2797272	0.40	0.61	186	32.7	175	0.07	8.1	12.0
Dmsc3_9	9/23/97	552788	2796747	0.28	0.46	218	32.8	429	0.18	8.1	11.0
Dabc4_1	9/23/97	552309	2798109	0.56	2.26	272	27.1	435	n/a	7.4	3.8
Dabc4_2	9/23/97	552309	2798109	0.70	1.09	243	28.0	437	0.2	7.6	5.1
Dabc4_3	9/23/97	552293	2798011	0.40	0.56	195	27.2	439	0.2	7.5	4.7
Dabc4_4	9/23/97	552292	2797937	0.40	0.32	196	27.9	425	0.19	7.6	5.3
Dabc4_5r	9/23/97	552059	2797883	0.40	0.86	200	28.5	458	0.2	7.5	4.7
Dabc4_6	9/23/97	551814	2797677	0.40	0.70	210	29.7	432	0.19	7.7	7.7
Dabc5_1	9/23/97	551469	2798453	0.50	3.62	240	28.1	383	0.2	7.5	4.4
Dabc5_2	9/23/97	551426	2798438	0.46	2.48	260	29.3	423	0.19	7.6	5.8
Dabc5_3	9/23/97	551384	2798364	0.37	0.36	194	30.3	428	0.18	7.7	9.6
Dabc5_4	9/23/97	551393	2798318	0.34	0.42	196	32.9	410	0.17	7.9	12.3
Dabc5_5	9/23/97	551281	2798185	0.37	0.52	211	30.3	421	0.18	7.7	8.0
Dabc5_6	9/23/97	551064	2797865	0.30	0.50	211	32.5	429	0.18	7.9	11.3

Table E - 2. Site summary, Transects 6 - 9, C-111 drainage basin, September 23, 1997
[MN = magnetic north, Temp = Temperature, Cond = Conductivity, DO = dissolved oxygen]

Site ID	Date	Location		Flow Parameters			Water Quality Parameters				
		UTM NAD 83		Depth	Velocity	Flow Direction	Temp	Cond	Salinity	pH	DO
		Easting	Northing	(m)	(cm/s)	(MN)	(°C)	(µS)	(ppt)		(ppm)
Gbd6-2	9/23/97	550805	2798744	0.36	1.37	244	30.4	492	0.24	7.7	6.8
Gbd6-3	9/23/97	550790	2798705	0.43	0.47	152	30.7	498	0.24	7.7	7.0
Gbd6-4	9/23/97	550779	2798576	0.37	0.58	194	29.0	462	0.24	7.6	6.6
Gbd6-5	9/23/97	550694	2798452	0.34	0.96	212	30.3	478	0.24	7.6	7.2
Gbd6-6	9/23/97	550778	2798031	0.30	0.80	205	31.0	436	0.24	7.4	2.0
Gbd7-1	9/23/97	550214	2798980	0.38	1.29	208	27.7	442	0.24	7.6	4.4
Gbd7-2	9/23/97	550256	2798930	0.43	0.73	199	28.7	483	0.24	7.7	5.6
Gbd7-3	9/23/97	550157	2798948	0.35	0.60	152	28.7	470	0.24	9.3	6.5
Gbd7-4	9/23/97	550114	2798856	0.26	0.62	181	28.3	474	0.24	9.8	6.7
Gbd7-5	9/23/97	549960	2798752	0.27	0.93	187	29.0	490	0.24	9.2	6.3
Gbd7-6	9/23/97	549582	2798435	0.26	0.69	180	30.2	480	0.24	7.8	7.8
Gbd8-1	9/23/97	549040	2799398	0.62	1.89	197	26.5	483	0.24	11.2	1.8
Gbd8-2	9/23/97	549040	2799398	0.49	2.78	249	26.8	431	0.24	11.1	0.1
Gbd8-3	9/23/97	549020	2799374	0.35	0.48	144	27.0	482	0.24	11.1	2.7
Gbd8-4	9/23/97	549013	2799337	0.23	0.68	204	26.9	488	0.24	11.1	4.9
Gbd8-5	9/23/97	548932	2799163	0.23	0.49	204	28.0	520	0.24	10.8	6.2
Gbd8-6	9/23/97	548816	2798672	0.21	0.41	191	30.2	486	0.24	8.8	7.5
Gbd9-1	9/23/97	548233	2799731	0.24	0.99	152	29.2	524	0.24	7.6	8.1
Gbd9-3	9/23/97	547508	2799374	0.27	0.83	195	32.3	275	0.24	8.0	9.9

Table E - 3. Site summary, Transects 6A - 6C, C-111 drainage basin, September 26, 1997
[MN = magnetic north, Temp = Temperature, Cond = Conductivity, DO = dissolved oxygen]

Site ID	Date	Location		Flow Parameters			Water Quality Parameters				
		UTM NAD 83		Depth	Velocity	Flow Direction	Temp	Cond	Salinity	pH	DO
		Easting	Northing	(m)	(cm/s)	(MN)	(°C)	(µS)	(ppt)		(ppm)
Dabc6a_1	9/26/97	n/a	n/a	0.38	2.06	291	27.5	488	0.22	7.6	4.0
Dabc6a_2	9/26/97	n/a	n/a	0.46	0.74	172	27.4	455	0.22	7.6	4.5
Dabc6a_3	9/26/97	n/a	n/a	0.30	0.25	212	27.4	482	0.22	7.4	3.6
Dabc6a_4	9/26/97	n/a	n/a	0.34	0.66	202	27.6	490	0.22	7.4	2.2
Dabc6a_5	9/26/97	n/a	n/a	0.30	0.36	181	28.6	536	0.24	7.4	2.6
Dabc6a_6	9/26/97	n/a	n/a	0.30	0.57	202	28.8	500	0.22	7.5	4.9
Dabc6a_7	9/26/97	n/a	n/a	0.34	0.92	194	29.2	490	0.22	7.5	4.0
Dabc6a_8	9/26/97	n/a	n/a	0.34	0.87	201	29.4	461	0.2	7.5	3.7
Dabc6a_9	9/26/97	n/a	n/a	0.28	0.52	177	29.2	490	0.22	7.6	4.9
Dabc6a_x	9/26/97	n/a	n/a	0.18	0.58	176	29.7	500	0.22	7.7	7.0
Rws6b_1	9/26/97	550667	2798736	0.47	1.72	292	27.0	432	0.19	7.2	5.1
Rws6b_2	9/26/97	550669	2798740	0.53	1.11	271	27.5	412	0.18	7.3	4.4
Rws6b_3	9/26/97	550646	2798636	0.29	0.41	205	27.6	270	0.12	7.4	5.2
Rws6b_4	9/26/97	550635	2798564	0.34	0.80	222	27.6	381	0.12	7.3	4.4
Rws6b_5	9/26/97	550662	2798460	0.37	0.50	213	27.9	301	0.13	7.4	5.1
Rws6b_6	9/26/97	550665	2798291	0.35	0.86	187	28.4	436	0.13	7.2	3.5
Rws6b_62	9/26/97	550675	2798302	0.43	1.06	184	n/a	n/a	0.13	n/a	n/a
Rws6b_7	9/26/97	550661	2798020	0.46	1.15	195	28.7	438	0.19	7.4	5.7
Rws6b_8	9/26/97	550673	2797755	0.50	0.73	202	29.0	430	0.19	7.4	4.7
Maf6c-1	9/26/97	539876	2807220	0.68	0.99	170	27.0	319	0.15	7.5	3.8
Maf6c-2	9/26/97	539876	2807189	0.52	1.20	193	27.2	296	0.13	7.6	4.8
Maf6c-3	9/26/97	550468	2798702	0.31	0.35	211	27.4	293	0.13	7.5	2.0
Maf6c-4	9/26/97	550516	2798672	0.26	0.20	240	27.6	291	0.13	7.4	2.1
Maf6c-5	9/26/97	550580	2798543	0.30	0.15	186	28.4	289	0.13	7.4	3.6
Maf6c-6	9/26/97	550627	2798186	0.29	0.17	215	29.0	276	0.13	7.5	3.1
Maf6b-7	9/26/97	550599	2796525	0.27	0.27	193	28.8	302	0.13	7.6	1.0
Maf6b-8	9/26/97	550475	2796849	0.38	0.75	159	28.8	303	0.13	7.5	4.0
Maf6b-9	9/26/97	550487	2797226	0.30	1.80	197	29.0	308	0.13	7.5	4.8
Mafqwmon	9/26/97	548025	2799716	0.20	0.41	202	27.8	350	0.16	7.3	3.9

Appendix F. Site summary, C-111 drainage basin, South Florida Everglades, September 1999

Table F - 1. Site summary, Transects 1 - 12, C-111 drainage basin, September 20 and 22, 1999
[MN = magnetic north, Temp = Temperature, Cond = Conductivity]

Site ID	Date	Location		Flow Parameters			Water Quality Parameters		
		UTM NAD 83		Depth	Velocity	Flow Direction	Temp	Cond	Salinity
		Easting	Northing	(m)	(cm/s)	(MN)	(°C)	(□S)	(ppt)
c1-01	9/20/99	554967	2797282	0.21	1.06	223	27.0	504	0.24
c1-02	9/20/99	554867	2797060	0.20	0.22	216	27.7	493	0.24
c1-03	9/20/99	554767	2796839	0.29	0.20	259	28.0	483	0.23
c1-04	9/20/99	554568	2796395	0.27	0.06	173	29.0	470	0.22
c2-01	9/20/99	554160	2797611	0.30	0.19	185	28.3	488	0.23
c2-02	9/20/99	554060	2797389	0.39	0.07	183	28.9	479	0.23
c2-03	9/20/99	553960	2797167	0.34	0.08	175	28.4	488	0.23
c2-04	9/20/99	553862	2796613	0.40	0.11	173	29.9	455	0.22
c2-05	9/20/99	553662	2796170	0.26	0.18	192	29.2	449	0.21
mb3_1	9/20/99	553141	2797850	0.14	2.24	218	26.5	525	0.30
mb3_2	9/20/99	553156	2797675	0.46	1.06	216	26.8	547	0.30
mb3_3	9/20/99	553109	2797536	0.27	0.85	206	27.4	519	0.30
mb3_4	9/20/99	552873	2797111	0.30	0.85	187	27.7	528	0.20
mb3_5	9/20/99	552790	2796855	0.09	0.25	189	29.8	527	0.20
mb4_1	9/20/99	552267	2798247	0.27	0.83	174	28.3	526	0.20
mb4_2	9/20/99	552246	2798022	0.37	0.91	198	28.7	555	0.30
mb4_3	9/20/99	552140	2797883	0.27	0.66	203	29.4	561	0.20
mb4_4	9/20/99	552002	2797427	0.34	0.94	185	29.3	537	0.20
mb4_5	9/20/99	551870	2796941	0.30	0.75	189	29.4	488	0.20
c3-1	9/22/99	553234	2797985	0.19	0.15	214	n/a	n/a	n/a
c3-2	9/22/99	553155	2797721	0.21	0.24	199	n/a	n/a	n/a
c3-3	9/22/99	553061	2797511	0.17	0.28	174	n/a	n/a	n/a
c3-4	9/22/99	552849	2797056	0.23	0.34	201	n/a	n/a	n/a
c3-5	9/22/99	552626	2796631	0.23	0.39	200	n/a	n/a	n/a
c4-1	9/22/99	552319	2798279	0.46	0.48	184	n/a	n/a	n/a
c4-2	9/22/99	552214	2798083	0.22	0.57	192	n/a	n/a	n/a
c4-3	9/22/99	552148	2797851	0.12	0.53	200	n/a	n/a	n/a
c4-4	9/22/99	552036	2797385	0.08	0.73	229	n/a	n/a	n/a
c4-5	9/22/99	552078	2796960	0.37	0.18	189	n/a	n/a	n/a
mrt6p1	9/22/99	550688	2798893	0.47	1.65	222	28.0	501	0.24
mrt6p2	9/22/99	550670	2798705	0.15	0.73	211	31.3	476	0.23
mrt6p3	9/22/99	550642	2798420	0.17	0.41	191	32.3	442	0.21
mrt6p4	9/22/99	550430	2797924	0.17	0.41	246	33.5	433	0.21
mrt6p5	9/22/99	550307	2797366	0.20	1.02	198	30.5	419	0.20
c9-1	9/22/99	548160	2799913	0.77	0.27	228	n/a	n/a	n/a
c9-2	9/22/99	548108	2799690	0.24	0.21	188	n/a	n/a	n/a
c9-3	9/22/99	548026	2799373	0.12	0.69	185	n/a	n/a	n/a
c9-4	9/22/99	547914	2798911	0.18	0.24	192	n/a	n/a	n/a
c9-5	9/22/99	547679	2798469	0.20	0.31	110	n/a	n/a	n/a
c12-1	9/22/99	547766	2801667	0.13	0.32	169	n/a	n/a	n/a
c12-2	9/22/99	547670	2801917	0.17	0.45	153	n/a	n/a	n/a
c12-3	9/22/99	547177	2801691	0.15	0.26	126	n/a	n/a	n/a
c12-4	9/22/99	546693	2801685	0.04	0.65	161	n/a	n/a	n/a
c12-5	9/22/99	546275	2801737	0.13	0.55	100	n/a	n/a	n/a

Table F - 2. Site summary, ENP Boundary Transects, C-111 drainage basin, September 22, 1999
[MN = magnetic north, Temp = Temperature, Cond = Conductivity]

Site ID	Date	Location		Flow Parameters			Water Quality Parameters		
		UTM NAD 83		Depth	Velocity	Flow Direction	Temp	Cond	Salinity
		Easting	Northing	(m)	(cm/s)	(MN)	(°C)	(µS)	(ppt)
enp_ns1	9/22/99	542933	2804713	0.27	4.71	149	26.0	477	0.23
enp_ns2	9/22/99	542897	2804263	0.52	1.13	173	26.0	501	0.24
enp_ns3	9/22/99	542884	2803829	0.29	1.92	178	26.5	463	0.22
enp_ns4	9/22/99	542896	2803256	0.32	1.72	174	26.5	400	0.19
enp_ns5	9/22/99	542901	2802918	0.21	2.34	189	27.7	369	0.17
enp_ns6	9/22/99	542902	2802574	0.21	2.98	161	28.6	358	0.17
enp_ns7	9/22/99	542902	2802217	0.29	2.05	168	29.6	388	0.16
enp_ns8	9/22/99	542900	2801824	0.18	2.54	150	30.5	306	0.14
enp_ns9	9/22/99	542911	2801524	0.27	3.38	162	30.3	272	0.13
enp_ns10	9/22/99	542901	2801215	0.27	2.35	149	30.7	256	0.12
enp_ns11	9/22/99	542903	2800917	0.21	3.69	181	31.3	245	0.12
enp_ns12	9/22/99	542906	2800599	0.24	3.00	170	31.5	242	0.11
enp_ns13	9/22/99	542903	2800294	0.24	2.57	157	31.8	227	0.11
enp_ns14	9/22/99	542912	2800123	0.24	2.31	150	32.6	214	0.10
enp_ns15	9/22/99	542912	2799738	0.21	1.25	200	n/a	n/a	n/a
enp_ns16	9/22/99	542919	2799448	0.21	0.89	178	n/a	n/a	n/a
enp_ns17	9/22/99	542915	2798933	0.21	0.61	165	n/a	n/a	n/a
enp_ns18	9/22/99	542923	2798670	0.18	0.22	192	n/a	n/a	n/a
enp_ns19	9/22/99	542919	2798133	0.18	0.76	170	n/a	n/a	n/a
enp_ns20	9/22/99	542911	2797592	0.26	0.28	187	n/a	n/a	n/a
enp_ns21	9/22/99	542927	2797127	0.07	0.59	172	n/a	n/a	n/a
enp_ns22	9/22/99	542979	2796633	0.37	0.24	159	n/a	n/a	n/a
enp_ew23	9/22/99	543353	2796616	0.36	0.59	214	26.3	307.8	0.10
enp_ew24	9/22/99	544099	2796713	0.33	0.42	203	26.6	319.6	0.20
enp_ew25	9/22/99	544694	2796648	0.43	0.39	205	27.4	349.3	0.20
enp_ew26	9/22/99	545251	2796674	0.33	0.43	192	26.8	343.3	0.20
enp_ew27	9/22/99	545869	2796710	0.46	0.60	160	26.9	342.4	0.20
enp_ew28	9/22/99	546425	2796715	0.43	0.79	179	27.9	350.6	0.20
enp_ew29	9/22/99	546918	2796714	0.32	0.47	173	28.8	378.9	0.20
enp_ew30	9/22/99	547541	2796765	0.29	0.98	194	29.3	508	0.20
enp_ew31	9/22/99	548112	2796742	0.30	0.46	190	30.6	503	0.20
enp_ew32	9/22/99	548665	2796757	0.29	0.57	194	29.6	475.3	0.20
enp_ew33	9/22/99	549294	2796805	0.33	0.49	201	30.8	460.4	0.20
enp_ew34	9/22/99	549851	2796779	0.34	0.42	204	28.2	434.9	0.20
enp_ew35	9/22/99	550357	2796754	0.38	0.30	208	30.6	481.7	0.20
enp_ew36	9/22/99	550665	2796724	0.36	0.53	214	29.6	491.6	0.20
enp_ew3	9/22/99	550874	2796833	0.24	0.64	183	n/a	n/a	n/a
enp_ew2	9/22/99	551428	2796832	0.37	0.06	187	n/a	n/a	n/a
enp_ew1	9/22/99	551971	2796831	0.46	0.27	190	n/a	n/a	n/a
enp_e1	9/23/99	552580	2796858	0.37	0.47	191	27.4	473	0.23
enp_e2	9/23/99	553134	2796869	0.30	0.95	173	27.1	284	0.13
enp_e3	9/23/99	553690	2796902	0.14	1.10	159	28.0	440	0.23
enp_e4	9/23/99	554297	2796858	0.15	1.48	181	27.7	501	0.24
enp_e5	9/23/99	554843	2796842	0.17	2.04	180	27.0	480	0.25
enp_e6	9/23/99	555363	2796899	0.18	1.65	129	27.0	487	0.23
enp_e7	9/23/99	555902	2796892	0.14	0.37	171	28.2	499	0.24