

SUPPLEMENTARY MATERIAL

Table.1. Mean Density of Larvae per 100m³ Caught in Ring Trawls in Caeté Estuary Between December 1996 and September 1997 and Relative Contributions of these Species to the Adjusted Numbers in the Whole Estuary and the Different Regions at ebb and Flood Tide. The Relative Contributions were Calculated from Numbers in Each Sample after these had Been Adjusted to a Constant Volume of 100 m³. Dash Indicates Species not Caught in that Region

Family	Species	Total Density		Density (%)					
		no.	%	Upper		Middle		Lower	
				Ebb	Flood	Ebb	Flood	Ebb	Flood
Sciaenidae	<i>Stellifer microps</i>	8873.9	32.8	34.1	51.1	15.3	0.9	0.1	
Engraulidae	<i>Anchovia clupeioides</i>	8456.3	31.2	2.2	26.8	48.2	11.4	25.6	27.6
Sciaenidae	<i>Cynoscion acoupa</i>	2970.5	11.0	16.6	12.6	6.0	20.0	6.5	15.6
Engraulidae	<i>Lycengraulis grossidens</i>	1471.6	5.4	5.1	1.1	11.1	1.7	5.7	
Clupeidae	<i>Rhinosardinia amazonica</i>	871.0	3.2	0.5	1.2	3.3	19.2	19.5	31.2
Eleotridae	<i>Guavina guavina</i>	803.5	3.0	0.9	2.1	5.2	0.8	0.1	
	Eggs	614.4	2.3	2.6	1.5	2.9	1.9	10.6	2.9
Pimelididae	<i>Pimelodus blochii</i>	557.2	2.1	13.5	0.2	0.1			
Achiridae	<i>Aprionichthys dumerili</i>	529.0	2.0	10.1	0.6	0.7			0.3
Achiridae	<i>Achirus sp.</i>	395.2	1.5	0.1	0.6	2.0	28.1	0.5	0.3
Auchnipteridae	<i>Pseudoauchnipterus nodosus</i>	335.4	1.2	7.7	0.1		6.4		0.3
Sciaenidae	<i>Stellifer rastrifer</i>	288.9	1.1	0.1	< 0.1	2.5	0.9	6.6	0.8
Sciaenidae	<i>Stellifer sp.</i>	209.1	0.8	0.4	0.8	0.9		0.5	
Aspredinidae	<i>Aspredo aspredo</i>	109.5	0.4	2.7	< 0.1	< 0.1	0.1		
Engraulidae	<i>Anchoviella brevirostris</i>	107.7	0.4	1.0	0.1	< 0.1	1.9	12.5	8.7
Sciaenidae	<i>Stellifer stellifer</i>	79.8	0.3	0.7	0.3	0.1	0.5		
Aspredinidae	<i>Aspredinichthys sp.</i>	69.0	0.3	< 0.1	< 0.1	0.7			
Gobiidae	<i>Gobionellus stigmaticus</i>	52.5	0.2	0.5	0.1	0.2			
Gobiidae	<i>Microgobius meeki</i>	50.5	0.2	< 0.1	< 0.1		1.3	6.9	4.3
Sciaenidae	<i>Micropogonias furnieri</i>	35.5	0.1	0.1		0.3	0.2	0.7	0.8
	<i>Species C</i>	32.7	0.1	< 0.1	0.3		0.2		
Tetraodontidae	<i>Colomesus psittacus</i>	25.3	0.1	0.2	0.1	< 0.1	0.1		
Engraulidae	<i>Engraulidae yolc-sac</i>	24.3	0.1	< 0.1	0.2	< 0.1			
Carangidae	<i>Caranx sp.</i>	18.9	0.1		< 0.1	0.1	0.5	0.8	2.2
Engraulidae	<i>Pterengraulis atherinoides</i>	18.1	0.1	< 0.1	< 0.1	0.1			
Carangidae	<i>Oligoplites sp.</i>	13.0	< 0.1		< 0.1	< 0.1	1.2	0.2	2.2
Sciaenidae	<i>Cynoscion microlepidotus</i>	12.4	< 0.1	< 0.1	< 0.1	< 0.1	0.6	1.2	0.3
Sciaenidae	<i>Lonchurus lanceolatus</i>	8.0	< 0.1	0.1	< 0.1			0.4	
Engraulidae	<i>Anchoa spinifer</i>	7.3	< 0.1	< 0.1		< 0.1	0.7		
Gobiidae	<i>Coryphopterus sp.</i>	4.8	< 0.1	< 0.1		< 0.1	0.2	0.3	
Eleotridae	<i>Eleotris sp.</i>	4.8	< 0.1	0.1		< 0.1			

Table.1. (Cont.)

Family	Species	Total Density		Density (%)					
				Upper		Middle		Lower	
		no.	%	Ebb	Flood	Ebb	Flood	Ebb	Flood
Gobiidae	<i>Gobionellus oceanicus</i>	4.5	< 0.1	0.1		< 0.1	0.1	0.2	
Scombridae	<i>Scomberomorus sp.</i>	3.9	< 0.1				0.7		
Ariidae	<i>Cathorops spixii</i>	3.2	< 0.1			< 0.1			
Megalopidae	<i>Tarpon atlanticus</i>	2.9	< 0.1			< 0.1			
Engraulidae	<i>Anchoa hepsetus</i>	2.9	< 0.1		< 0.1			0.6	
Engraulidae	<i>Anchoviella lepidentostole</i>	2.5	< 0.1	< 0.1			0.1		
Gerreidae	<i>Ulaema lefroyi</i>	1.8	< 0.1	< 0.1					
Trichiuridae	<i>Trichiurus lepturus</i>	1.7	< 0.1	< 0.1					
Pimelodiidae	<i>Brachyplatystoma vaillanti</i>	1.7	< 0.1	< 0.1					
Sciaenidae	<i>Sciaenidae yolc-sac</i>	1.6	< 0.1						
Gobiidae	<i>Gobiosoma hemigymnum</i>	1.5	< 0.1			< 0.1		0.2	
Gobiidae	<i>Gobioides broussonnetii</i>	1.4	< 0.1		< 0.1	< 0.1			
Clupeidae	<i>Chirocentron bleekermanus</i>	1.4	< 0.1			< 0.1			
Ephippidae	<i>Chaetodipterus faber</i>	1.4	< 0.1		< 0.1			0.2	
Haemulidae	<i>Genyatremus luteus</i>	1.4	< 0.1	< 0.1					
	<i>Species B</i>	1.2	< 0.1	< 0.1	< 0.1				
	<i>Species D</i>	1.1	< 0.1	< 0.1					
Paralichthyidae	<i>Citharichthys sp.</i>	1.0	< 0.1	< 0.1					
	<i>Species A</i>	0.9	< 0.1		< 0.1				
Batrachoididae	<i>Batrachoides surinamensis</i>	0.9	< 0.1	< 0.1					
Loricaridae	<i>Loricaria sp.</i>	0.8	< 0.1	< 0.1					
Belonidae	<i>Strongylura timucu</i>	0.8	< 0.1						0.8
Lutjanidae	<i>Lutjanus jocu</i>	0.8	< 0.1						0.8
Mugilidae	<i>Mugil sp.</i>	0.8	< 0.1						0.8
Carangidae	<i>Chloroscombrus chrysurus</i>	0.7	< 0.1				0.2		
Centropomidae	<i>Centropomus sp.</i>	0.6	< 0.1				0.1		
Gobiidae	<i>Chriolepis sp.</i>	0.6	< 0.1					0.2	
Loricaridae	<i>Hypostomus sp.</i>	0.4	< 0.1		< 0.1				
	Total								
	no. of fish larvae	27094		4368	11757	10089	433	347	100
	no. of species	59		40	33	33	27	25	17
	no. of samples	180		30	30	30	30	30	30

Table 2. Mean Square and Significance Levels for ANOVA for Fish Larvae Density and Number of Species Caught in a Ring Trawl in the Different Regions of the Caeté Estuary Between July 1996 and September 1997. Degrees of Freedom: DF; *A posteriori* Student-Newman-Keuls: SNK; 1: Early Dry- 1996; 2: Late Dry- 1996; 3: Early Rainy - 1997; 4: Late Rainy - 1997;5: Early Dry Season 1997; e: ebb; f: Flood Tide

Source of Variation	DF	Mean Squares					
		Density			No. of Species		
		Upper	Middle	Lower	Upper	Middle	Lower
Main effect							
Season	4	7.33***	1.25*	0.9	39.32**	17.78	13.87
Tide	1	0.33	9.50***	3.69**	38.4	141.10***	79.35***
Residual							
Season	85	0.29	0.47	0.36	8.97	7.26	6.51
Tide	58	0.52	0.39	0.32	13.3	7.18	5.51
SNK							
Season		<u>2</u> <u>3</u> <u>5</u> <u>1</u> 4	<u>3</u> <u>4</u> <u>5</u> <u>1</u> <u>2</u>		<u>3</u> <u>2</u> <u>1</u> <u>5</u> <u>4</u>		
Tide			e f	e f		e f	e f

Table 3. Mean Density of Larvae per 100m³ Ring Trawls in The Upper Reaches of the Caeté Estuary in September 1996 and March 1997 and Relative Contributions to the Adjusted Numbers During the Different Moon Phases. The Relative Contributions were Calculated from Numbers of Specimens in Each Sample After these had been Adjusted to a Constant Volume of 100 m³. Dash Indicates Species not Caught in that Region

Family	Species	Total Catch		Percent > 0.1									
		no.	%	Total Catch		New Moon		First Quarter		Full Moon		Last Quarter	
				Sep/96	Mar/97	Sep/96	Mar/97	Sep/96	Mar/97	Sep/96	Mar/97	Sep/96	Mar/97
Sciaenidae	<i>Cynoscion acoupa</i>	9184.5	34.5	9.0	47.7	27.3	64.7	1.4	32.2	20.9	--	6.7	--
Sciaenidae	<i>Stellifer stellifer</i>	3446.2	12.9	2.1	18.6	0.8	20.8	3.0	26.8	0.9	--	0.9	--
Sciaenidae	<i>Stellifer microps</i>	3341.1	12.5	31.0	2.9	7.5	2.6	40.8	6.5	24.9	--	16.2	--
Engraulidae	<i>Anchovia clupeioides</i>	3041.0	11.4	29.7	1.9	22.3	2.7	39.7	0.7	12.7	0.2	3.9	6.2
Pimelodidae	<i>Pimelodus blochii</i>	1707.0	6.4	2.6	8.4	2.9	0.1	0.1	8.2	0.4	41.5	24.1	--
Unidentified	<i>Species B</i>	1352.6	5.1	--	7.7	--	--	--	< 0.1	--	47.1	--	61.5
Eggs		752.3	2.8	5.0	1.7	11.4	0.2	2.8	6.4	3.6	1.9	12.0	2.6
Achiridae	<i>Aprionichthys dumerili</i>	682.1	2.6	5.4	1.1	4.1	0.2	3.4	4.8	2.8	0.3	26.9	--
Sciaenidae	<i>Stellifer sp.</i>	516.8	1.9	1.8	2.0	6.8	2.5	0.6	1.9	2.4	--	0.1	--
Sciaenidae	<i>Stellifer rastrifer</i>	488.6	1.8	2.7	1.4	8.0	2.2	0.2	--	8.5	--	0.1	--
Auchnipteridae	<i>Pseudoauchenipterus nodosus</i>	329.4	1.2	0.1	1.8	0.1	< 0.1	< 0.1	2.2	0.2	8.4	0.4	10.9
Engraulidae	<i>Anchoviella brevirostris</i>	247.9	0.9	2.6	0.1	0.4	< 0.1	2.0	--	6.9	0.3	2.6	2.0
Eleotridae	<i>Guavina guavina</i>	243.4	0.9	2.4	0.2	0.5	0.2	2.7	< 0.1	4.1	--	0.1	--
Achiridae	<i>Achirus sp.</i>	208.1	0.8	0.6	0.9	3.9	1.2	--	0.4	--	0.1	0.2	--
Clupeidae	<i>Rhinocardinia amazonica</i>	197.9	0.7	0.9	0.7	0.4	1.0	0.7	0.1	2.4	0.1	0.5	--
Aspredinidae	<i>Aspredo aspredo</i>	195.3	0.7	0.7	0.7	1.3	0.1	0.2	3.6	1.1	--	2.2	--
Engraulidae	<i>Lycengraulis grossidens</i>	182.5	0.7	0.3	0.9	0.2	0.3	< 0.1	3.5	1.8	--	--	--
Engraulidae	yolk-sac	144.5	0.5	1.4	0.1	--	--	2.1	0.5	0.5	0.1	--	--
Sciaenidae	<i>Micropogonias furnieri</i>	46.9	0.2	0.1	0.2	--	0.3	< 0.1	0.1	0.6	--	--	--
Carangidae	<i>Caranx sp.</i>	42.2	0.2	--	0.2	--	0.4	--	--	--	--	--	--
Engraulidae	<i>Anchoviella lepidentostole</i>	38.2	0.1	0.4	< 0.1	--	--	--	0.1	1.8	--	1.3	--
Gobiidae	<i>Gobionellus oceanicus</i>	30.1	0.1	0.2	0.1	1.0	< 0.1	0.1	0.3	--	--	--	--
Gobiidae	<i>Gobionellus stigmaticus</i>	25.8	0.1	--	0.1	--	< 0.1	--	0.6	--	< 0.1	--	--
Carangidae	<i>Oligoplites sp.</i>	21.7	0.1	0.2	< 0.1	1.0	0.1	--	--	0.1	--	--	--
Sciaenidae	<i>Lonchurus lanceolatus</i>	21.6	0.1	0.2	--	0.1	--	0.1	--	1.1	--	--	--
Gobiidae	<i>Microgobius meeki</i>	18.4	0.1	0.2	< 0.1	--	< 0.1	--	--	1.2	--	--	--
Pimelodidae	<i>Brachyplatystoma vaillanti</i>	15.6	0.1	--	0.1	--	--	--	0.4	--	< 0.1	--	--
Sciaenidae	<i>Bairdiella sp.</i>	15.0	0.1	< 0.1	0.1	--	0.1	--	< 0.1	0.1	--	--	--
Engraulidae	<i>Pterengraulis atherinoides</i>	12.9	< 0.1	< 0.1	0.1	--	0.1	< 0.1	--	--	--	0.1	--
Tetradontidae	<i>Colomesus psittacus</i>	12.5	< 0.1	0.1	< 0.1	--	< 0.1	0.1	< 0.1	< 0.1	--	--	--
Eleotridae	<i>Eleotris sp.</i>	10.2	< 0.1	--	0.1	--	< 0.1	--	0.2	--	0.1	--	--
Aspredinidae	<i>Aspredinichthys sp.</i>	9.7	< 0.1	< 0.1	0.1	< 0.1	0.1	--	< 0.1	--	--	--	--
Gobiidae	<i>Gobioides broussonnetii</i>	9.5	< 0.1	< 0.1	0.1	--	0.1	--	--	< 0.1	--	--	--
Sciaenidae	<i>Cynoscion microlepidotus</i>	8.4	< 0.1	0.1	< 0.1	--	< 0.1	--	--	0.5	--	--	--
Unidentified	<i>Species C</i>	8.2	< 0.1	0.1	< 0.1	--	--	--	--	--	< 0.1	1.0	--
Megalopidae	<i>Tarpon atlanticus</i>	7.3	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	--	< 0.1	--	--	0.1	--
Syngnathidae	<i>Syngnathus rousseau</i>	6.4	< 0.1	0.1	--	--	--	< 0.1	--	--	--	0.7	--
Unidentified	<i>Species A</i>	4.9	< 0.1	--	< 0.1	--	< 0.1	--	< 0.1	--	--	--	9.4

Table 4. Mean Squares and Significant Levels for Two-Way ANOVAs of Densities of 18 Most Abundant Species Caught in Ring Trawls in September 1996 and March 1997 at the Different Moon Phases. DF. Dregrees of Freedom; SNK: a Posteriori Student-Newman-Keuls; 1: new-, 2: First Quarter-, 3:Full- and 4:Last Quarter Moon; S: September 1996, M: March 1997. Multiple Comparison Results are Shown Below Individual Letter Designation

Species	Main Effects		2-way Interaction	Residual	SNK	
	Moon	Month	Moon x Month		Moon	Month
	(3 DF)	(1 DF)	(3 DF)	(88 DF)		
<i>S. microps</i>	3.04 ***	2.83	1.56	0.47	<u>2</u> <u>1</u> <u>3</u> <u>4</u>	
<i>A. clupeioides</i>	2.79 ***	2.70	1.25	0.40	<u>2</u> <u>1</u> <u>3</u> <u>4</u>	
<i>C. acoupa</i>	8.34 ***	1.41	7.60 ***	0.49	<u>1</u> <u>2</u> <u>3</u> <u>4</u>	
<i>G. guavina</i>	0.31	0.82	0.62 **	0.12		
<i>R. amazonica</i>	0.54 **	0.00	0.92 ***	0.10	<u>1</u> <u>2</u> <u>3</u> <u>4</u>	
<i>L. grossidens</i>	0.46 **	0.67	0.92 ***	0.10	<u>2</u> <u>1</u> <u>3</u> <u>4</u>	
<i>S. rastrifer</i>	1.67 ***	0.47	0.88 **	0.20	<u>1</u> <u>3</u> <u>2</u> <u>4</u>	
<i>A. dumereli</i>	1.38 ***	3.02 ***	0.98 **	0.23	<u>2</u> <u>4</u> <u>1</u> <u>3</u>	<u>S</u> <u>M</u>
<i>P. blochii</i>	0.59	0.84	3.86 ***	0.26		
<i>Achirus sp.</i>	1.65 ***	0.73 **	0.26	0.08	<u>1</u> <u>3</u> <u>4</u> <u>2</u>	<u>S</u> <u>M</u>
<i>S. stellifer</i>	4.06 ***	5.70 ***	3.54 ***	0.36	<u>1</u> <u>2</u> <u>3</u> <u>4</u>	<u>M</u> <u>S</u>
<i>P. nodosus</i>	1.50 ***	3.67 ***	1.56 ***	0.80	<u>3</u> <u>2</u> <u>4</u> <u>1</u>	<u>M</u> <u>S</u>
<i>Stellifer sp.</i>	2.10 ***	0.10	0.46	0.21	<u>1</u> <u>2</u> <u>3</u> <u>4</u>	
<i>A. brevirostris</i>	0.36	1.55 **	0.44	0.13		<u>S</u> <u>M</u>
<i>A. aspredo</i>	0.33	0.16	0.54 **	0.12		
<i>M. meeki</i>	0.08 **	0.07	0.08 **	0.01	<u>3</u> <u>1</u> <u>2</u> <u>4</u>	
<i>Aspredinichthys sp.</i>	0.04 **	0.03	0.02	0.01	<u>1</u> <u>2</u> <u>3</u> <u>4</u>	
<i>M. furnieri</i>	0.15 **	0.10	0.29 **	0.03	<u>1</u> <u>3</u> <u>2</u> <u>4</u>	
Eggs	2.00 ***	1.48	1.01 **	0.25	<u>2</u> <u>1</u> <u>4</u> <u>3</u>	

Table 5. Mean Density of Larvae per 100m³ Caught in Ring Trals in the Middle Estuary in December 1996 and June 1997 and the Relative Contributions of these Species to the Adjusted Numbers at Different Diel, Spatial and Tidal Situations. The Relative Contributions were Calculated from Numbers in Each Sample after these had been Adjusted to a Constant Volume of 100 m³. Dash Indicates Species not Caught in that Region

Family	Species	Total		December 1996 (%)								June 1997 (%)							
				Day				Night				Day				Night			
				Surface		Bottom		Surface		Bottom		Surface		Bottom		Surface		Bottom	
				Mean	%	ebb	Flood	ebb	Flood	ebb	flood	ebb	flood	ebb	Flood	ebb	Flood	ebb	Flood
Engraulidae	<i>Anchovia clupeioides</i>	69.7	60.8	63.1	12.5	63.5	5.6	6.7	41.6	6.0	16.3	90.4	43.4	50.4	33.7	31.5	20.5	7.3	5.2
Sciaenidae	<i>Stellifer microps</i>	18.8	16.4	21.1	---	6.8	---	---	---	---	---	4.0	0.5	8.4	---	---	---	---	---
Eleotridae	<i>Guavina guavina</i>	7.7	6.7	8.7	---	11.2	---	---	---	1.8	3.9	1.1	0.4	1.5	---	---	---	---	---
Clupeidae	<i>Rhinosardinia amazonica</i>	7.1	6.2	4.7	4.52	2.0	1.2	33.8	37.6	27.0	31.7	2.8	44.8	2.4	56.7	---	15.9	0.7	9.2
Achiridae	<i>Achirus sp.</i>	3.5	3.1	3.1	72.5	13.0	74.4	2.2	---	3.8	12.5	---	---	0.2	---	---	---	---	---
Sciaenidae	<i>Stellifer sp.</i>	2.4	2.1	---	---	---	---	---	---	---	---	0.3	---	22.7	---	20.6	31.4	34.3	7.8
Sciaenidae	<i>Stellifer rastrifer</i>	2.2	1.9	---	10.5	---	3.6	4.4	4.1	0.8	6.8	0.1	---	5.0	---	31.7	15.2	42.2	46.9
Sciaenidae	<i>Cynoscion acoupa</i>	1.3	1.2	<0.1	---	2.6	9.5	31.7	---	49.9	---	---	8.6	3.8	3.7	2.7	0.9	5.7	0.9
Engraulidae	<i>Lycengraulis grossidens</i>	0.3	0.3	---	---	---	---	---	---	1.8	---	---	---	1.1	---	8.4	4.5	2.3	6.5
Sciaenidae	<i>Micropogonias furnieri</i>	0.3	0.2	---	---	---	---	2.5	4.1	1.0	---	0.1	---	1.1	---	1.4	6.3	1.5	4.2
Sciaenidae	<i>Stellifer stellifer</i>	0.3	0.2	---	---	---	---	---	---	---	---	---	0.4	0.8	---	---	---	---	11.6
Carangidae	<i>Caranx sp.</i>	0.2	0.2	---	---	1.1	---	---	4.3	---	---	0.9	0.5	---	3.5	---	---	---	---
Sciaenidae	<i>Cynoscion microlepidotus</i>	0.2	0.1	---	---	---	---	9.2	4.4	3.4	21.0	---	---	0.2	---	---	---	---	0.5
Carangidae	<i>Oligoplites sp.</i>	0.1	0.1	---	---	---	---	---	---	---	3.9	0.2	0.9	---	2.3	---	0.9	---	0.5
Gobiidae	<i>Microgobius meeki</i>	0.1	0.1	---	---	---	---	9.3	4.0	0.8	3.9	---	---	0.3	---	---	---	---	---
Gobiidae	<i>Gobioides broussonnetii</i>	0.1	0.1	---	---	---	---	---	---	---	---	---	---	0.8	---	3.6	---	0.8	---
Engraulidae	<i>Pterengraulis atherinoides</i>	0.1	0.1	---	---	---	---	---	---	1.0	---	---	---	0.3	---	---	---	1.5	1.4
Sciaenidae	<i>Macrodon ancylodon</i>	0.1	0.1	---	---	---	---	---	---	---	---	---	---	0.6	---	---	0.9	1.5	0.5
Engraulidae	<i>Anchoviella brevirrostris</i>	0.1	0.1	---	---	---	---	---	---	---	---	---	---	0.1	0.4	---	---	---	2.7
Cynoglossidae	<i>Symphurus sp.</i>	0.03	<0.1	---	---	---	---	---	---	---	---	---	---	0.3	---	---	---	0.8	0.5
	<i>Egg</i>	0.03	<0.1	---	---	---	---	---	---	2.8	---	---	---	---	---	---	---	---	---
Centropomidae	<i>Centropomus sp.</i>	0.02	<0.1	---	---	---	---	---	---	---	---	0.1	---	---	---	---	---	---	0.5
Gerreidae	<i>Ulaema lefroyi</i>	0.02	<0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	1.8	---	---
Tetraodontidae	<i>Colomesus psittacus</i>	0.02	<0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	0.9	---	0.5
	<i>Species C</i>	0.01	<0.1	---	---	---	---	---	---	---	---	---	0.5	---	---	---	---	---	---
Trichiuridae	<i>Trichiurus lepturus</i>	0.01	<0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	0.9	---	---
Ariidae	<i>Cathorops spixii</i>	0.01	<0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.8	---
Engraulidae	<i>Anchoa spinifer</i>	0.01	<0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.8	---
Sciaenidae	<i>Isopisthus parvipinnis</i>	0.008	<0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.5
Engraulidae	<i>Anchoviella lepidentostole</i>	0.008	<0.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.5
Gobiidae	<i>Coryphopterus sp.</i>	0.003	<0.1	---	---	---	---	---	---	---	---	---	---	0.1	---	---	---	---	---
Achiridae	<i>Aprionichthys dumerili</i>	0.003	<0.1	---	---	---	---	---	---	---	---	---	---	0.1	---	---	---	---	---
	Total																		
	mean no. of larvae	115		1013	3	10	10	12	6	24	6	141	27	67	23	20	26	30	44
	no. of species	31		6	4	7	5	8	7	12	8	10	9	20	6	7	12	13	18
	no. of samples	72		6	6	6	6	3	3	3	3	6	6	6	6	3	3	3	3

Table 6. Month, Water Layer, Tide and Diel Effects Tested by ANOVA Performed on Number of Species and Log-Density of Fish Larvae Caught in the Middle Estuary in December 1996 and June 1997.
DF: Degree of Freedom; SNK: A Posteriori Student-Newman-Keuls; J: June 1997; D: December 1996; B: Bottom; S: Surface; N: night; D: day; E: ebb; F: flood

Source of Variation	DF	Mean Square of:	
		Density	No. of Species
Main effect:			
Month (M)	1	3.32 **	72.25 ***
Layer (L)	1	0.18	49.00 ***
Tide (T)	1	1.27 *	7.11
Time (Ti)	1	0.10	56.25***
2-way interaction			
M x L	1	0.02	7.11
M x T	1	0.37	16.00 *
L x T	1	0.18	2.25
M x Ti	1	0.01	0.03
L x Ti	1	0.34	7.11
T x Ti	1	0.45	25.00 **
3-way interaction			
M x L x T	1	0.09	2.25
M x L x Ti	1	0.00	0.11
M x T x Ti	1	0.66	25.00 **
L x T x Ti	1	0.26	0.03
4-way interaction			
M x L x T x Ti	1	0.71	6.25
Residual	56	0.31	3.05
<u>SNK</u>			
Month (M)		J > D	J > D
Layer (L)			B > S
Tide (T)		E > F	
Time (Ti)			N > D

Table 7. Month, Water Layer, Tide and Diel Effects Tested by ANOVA Performed on Abundant Species Caught in the Middle Estuary in December 1996 and June 1997. DF: Degree of Freedom; Below Each Species Results of Student-Newman-Keuls Test are Given; J: June 1997; D: December 1996 b: Bottom; s: Surface; n: Night; d: day; e: ebb; f: Flood

Species	Main Effects		(1DF)		2-way Interaction			(1DF)			Residual
	Month (M)	Layer (L)	Tide (T)	Time (Ti)	M x L	M x T	L x T	M x Ti	L x Ti	T x Ti	(56 DF)
<i>A. clupeioides</i>	3.10 ** <i>D > J</i>	0.75	0.76	1.76 * <i>d > n</i>	0.12	0.10	0.20	0.35	0.15	1.02	0.22
<i>S. microps</i>	0.00	0.11	0.82 * <i>e > f</i>	0.90 * <i>d > n</i>	0.10	0.00	0.87	0.00	0.11	0.82 * <i>e > f</i>	0.20
<i>G. guavina</i>	0.19	0.09	0.62 * <i>e > f</i>	0.50 * <i>d > n</i>	0.30	0.16	0.11	0.06	0.24	0.56 * <i>e > f</i>	0.11
<i>R. amazonica</i>	0.46	0.06	0.64 * <i>e > f</i>	0.01	0.02	1.12 **	0.00	1.29 **	0.18	0.02	0.10
<i>Achirus sp.</i>	1.76 *** <i>D > J</i>	0.02	0.00	0.69 ** <i>d > n</i>	0.01	0.00	0.21	0.63 * <i>e > f</i>	0.06	0.01	0.09
<i>S. rastrifer</i>	2.29 *** <i>J > D</i>	0.76 ** <i>b > s</i>	0.00	2.32 *** <i>n > d</i>	0.81 **	0.02	0.00	1.63 *** <i>e > f</i>	0.29 * <i>d > n</i>	0.05	0.07
<i>C. acoupa</i>	0.00	0.38 * <i>b > s</i>	0.54 ** <i>e > f</i>	0.20	0.01	0.42 **	0.30 * <i>e > f</i>	0.51 **	0.03	1.19 *** <i>e > f</i>	0.06