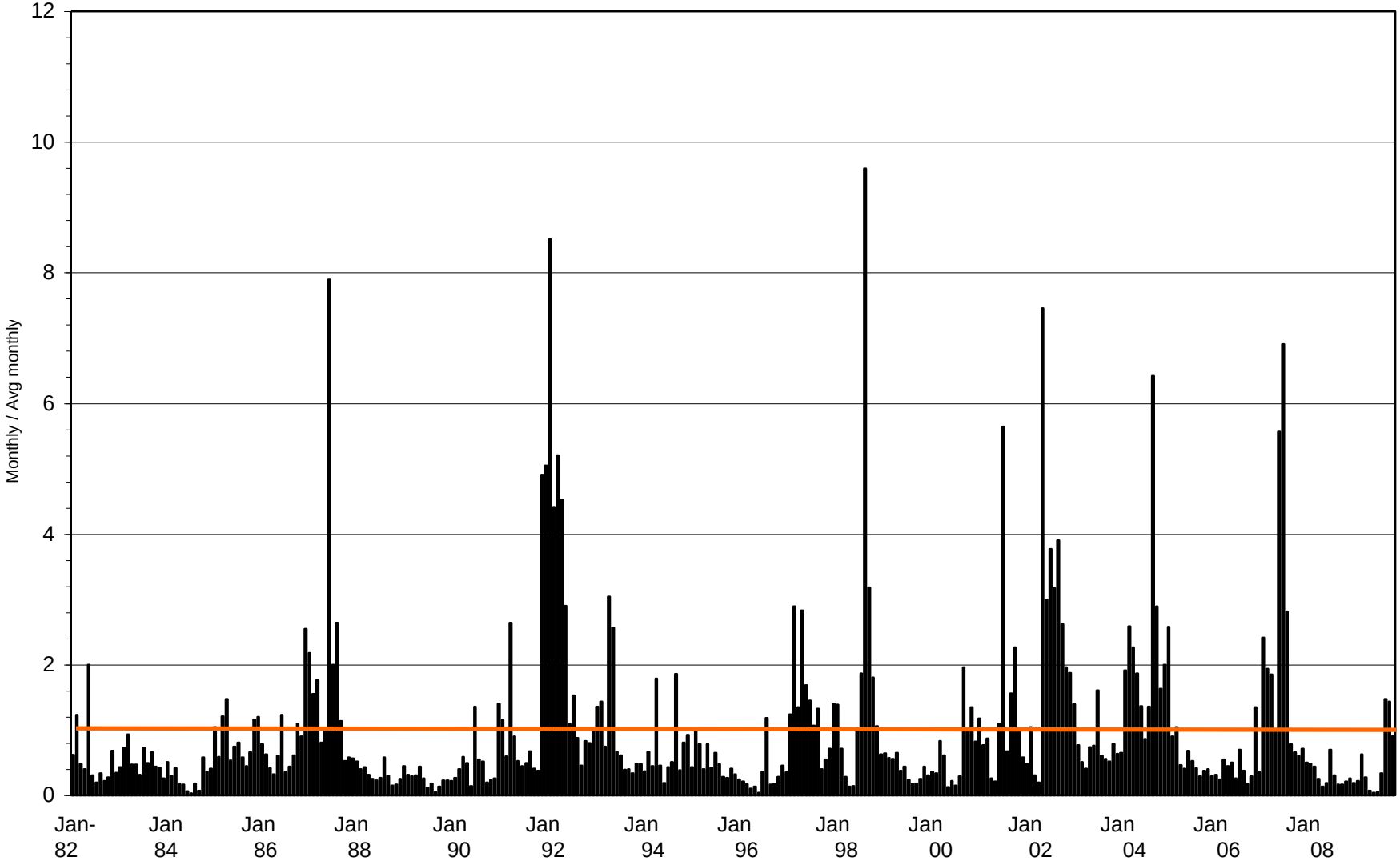
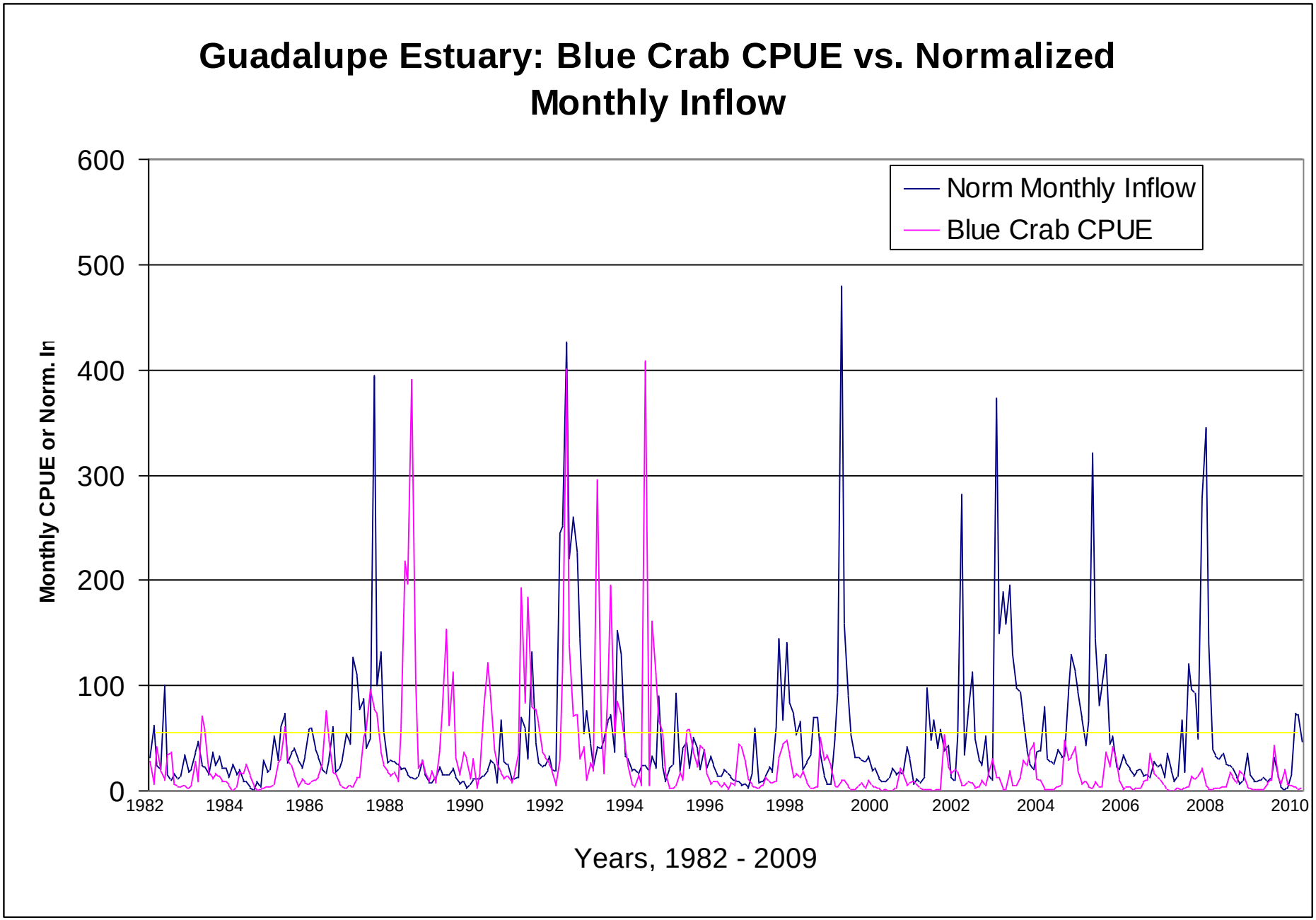
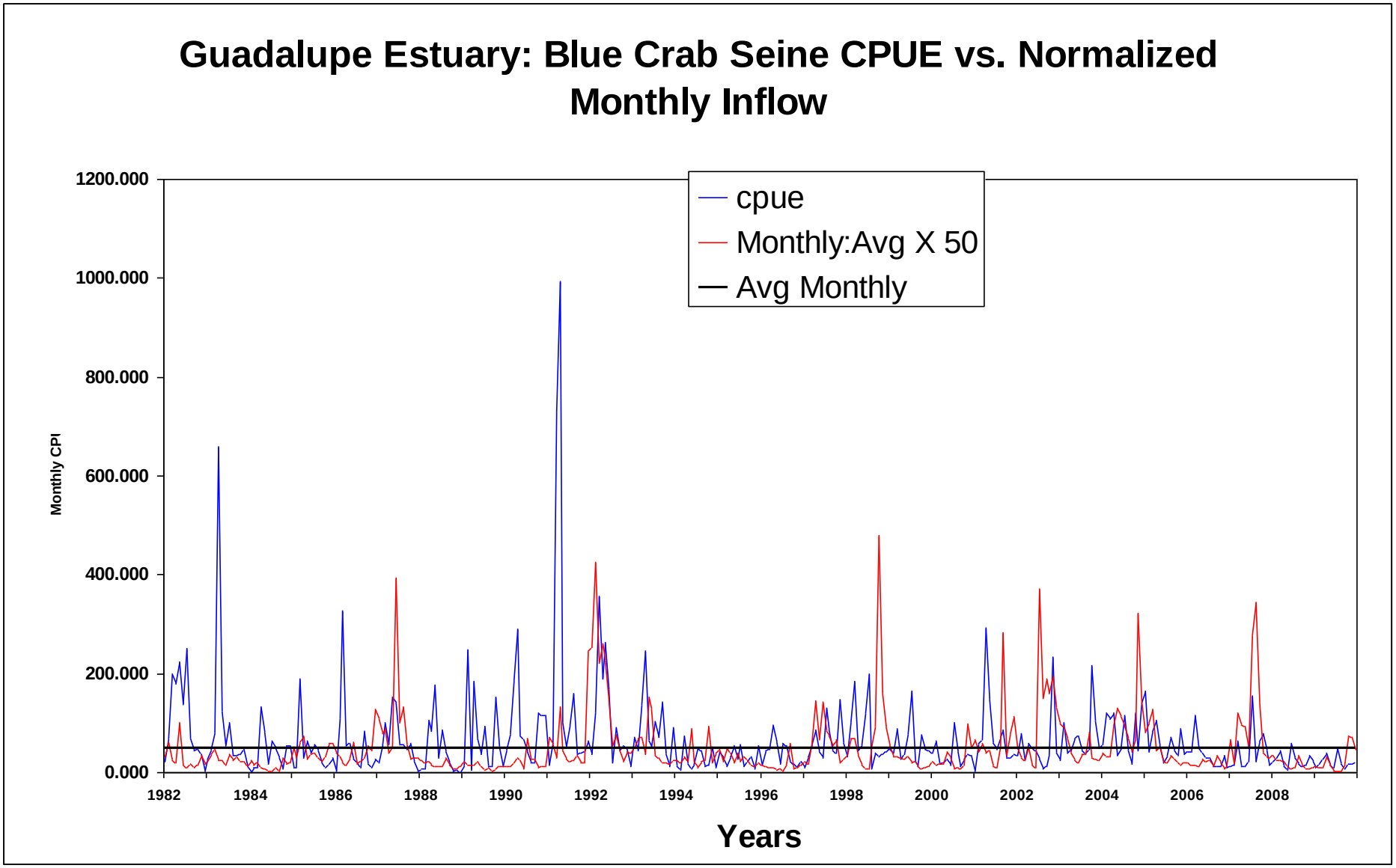
Guadalupe Estuary Monthly Inflows normalized to average monthly inflow, 1982 to 2009

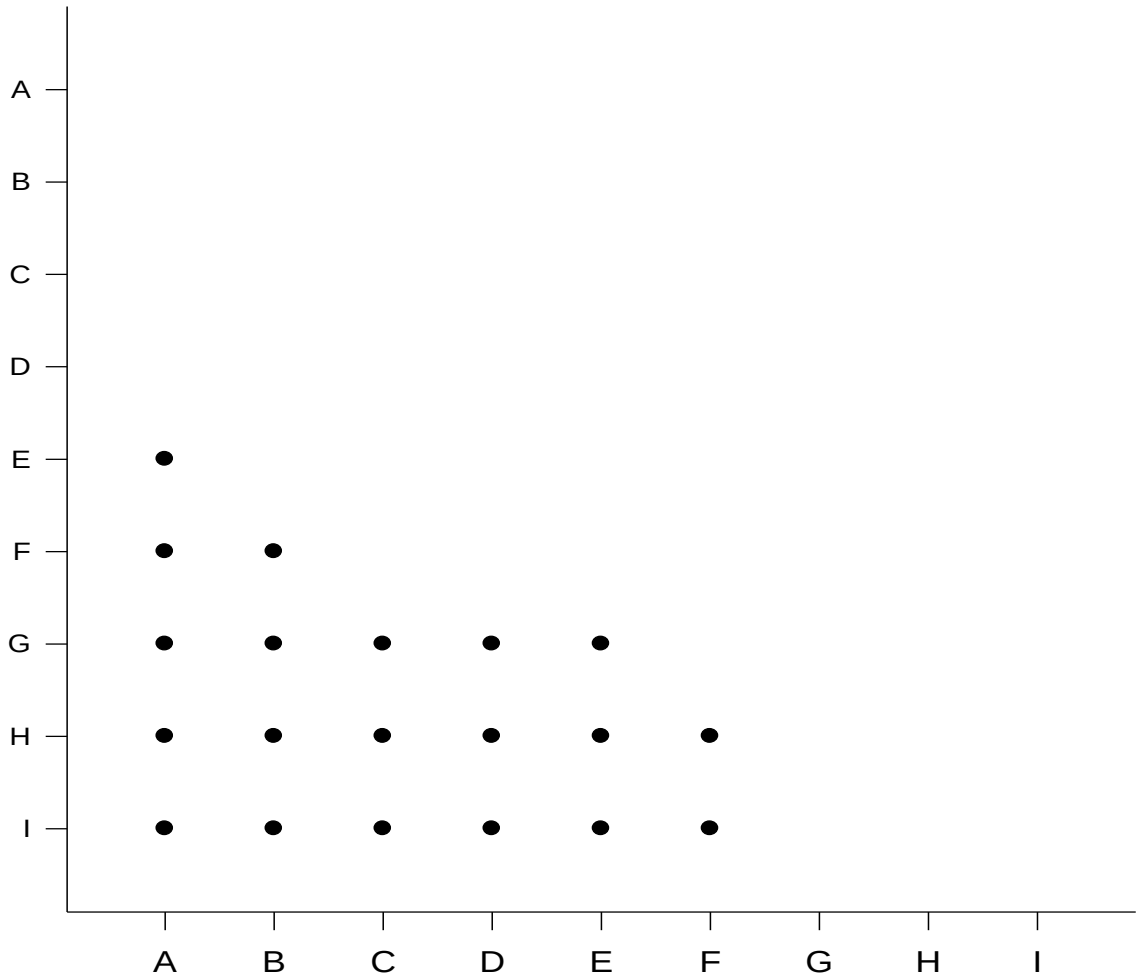



Guadalupe Estuary: Blue Crab CPUE vs. Normalized Monthly Inflow
Norm Monthly Inflow
Blue Crab CPUE
Monthly CPUE or Norm. In
600
500
400
300
200
100
0
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Years, 1982 - 2009


Guadalupe Estuary: Blue Crab Seine CPUE vs. Normalized Monthly Inflow
cpue
Monthly:Avg X 50
Avg Monthly
Monthly CPI
1200.000
1000.000
800.000
600.000
400.000
200.000
0.000
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
Years

Blue Crab: Multiple Comparison Graph

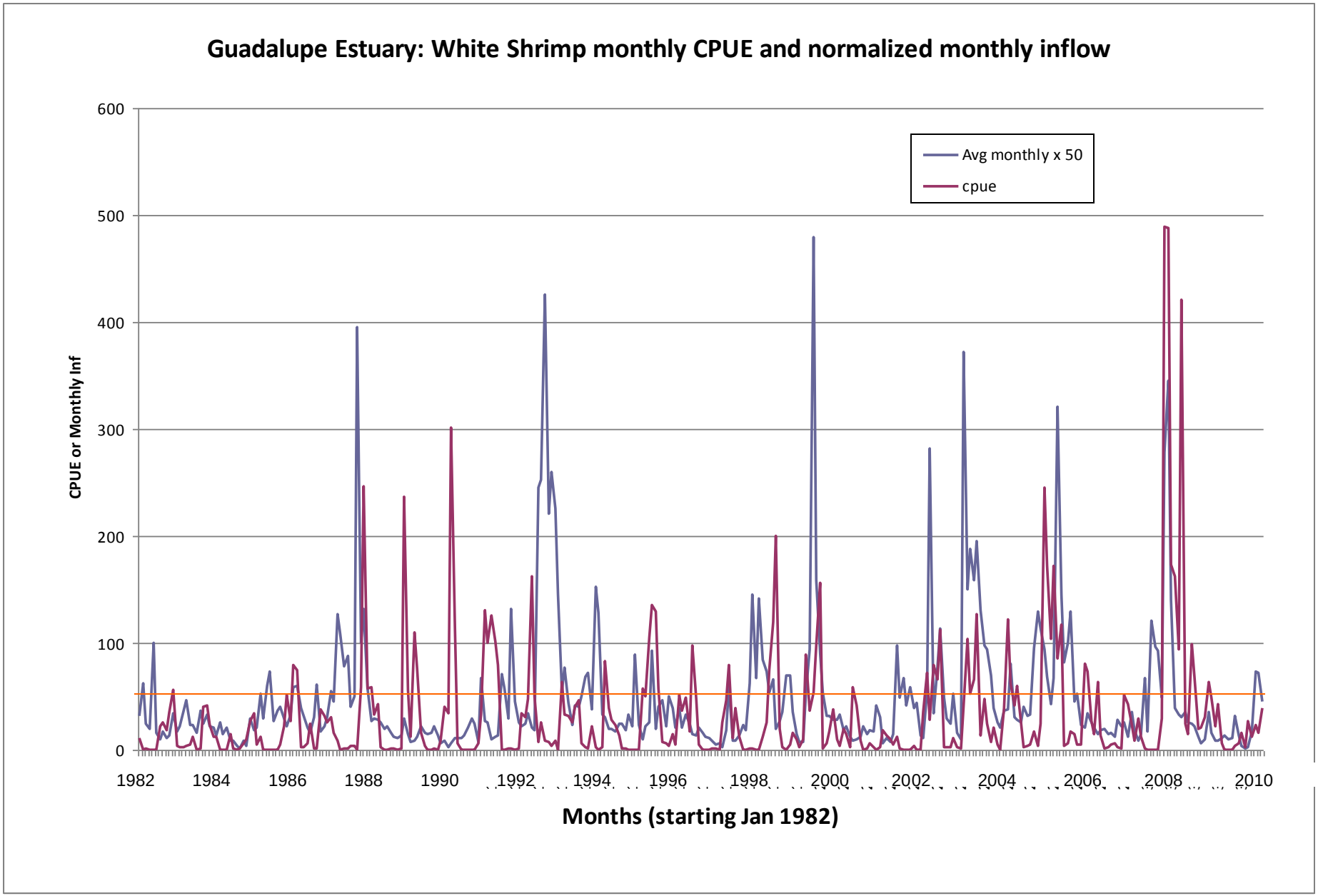
(Raw data are ranked and compared using Dunn's test*)

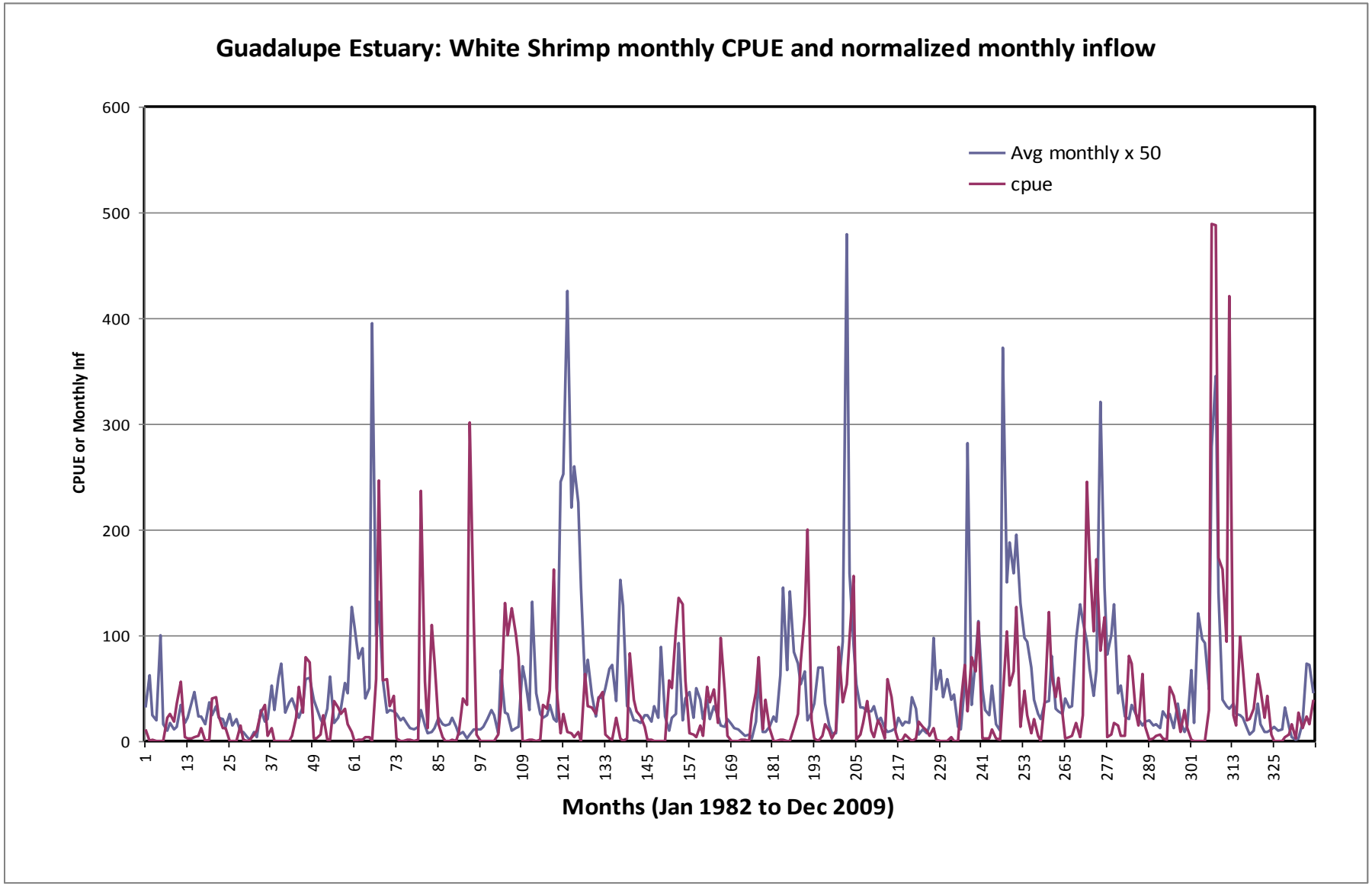


Symbol indicates significant difference.

A = 0 -4 psu
B = 4 -8 "
C = 8- 12 "
D =12-16 "
E= 16-20 "
F= 20-24 "
G= 24-28 "
H= 28-32 "
I = 32-36 "

* Dunn's Test is used because of the unequal group sizes varying from 143 to 563

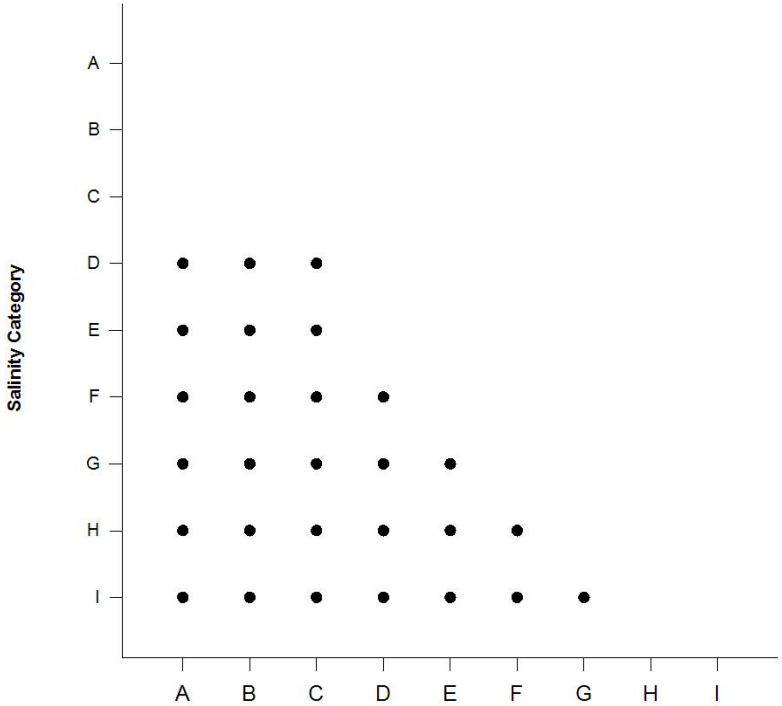

Guadalupe Estuary: White Shrimp monthly CPUE and normalized monthly inflow
Avg monthly x 50
cpue
CPUE or Monthly Inf
600
500
400
300
200
100
0
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
Months (starting Jan 1982)



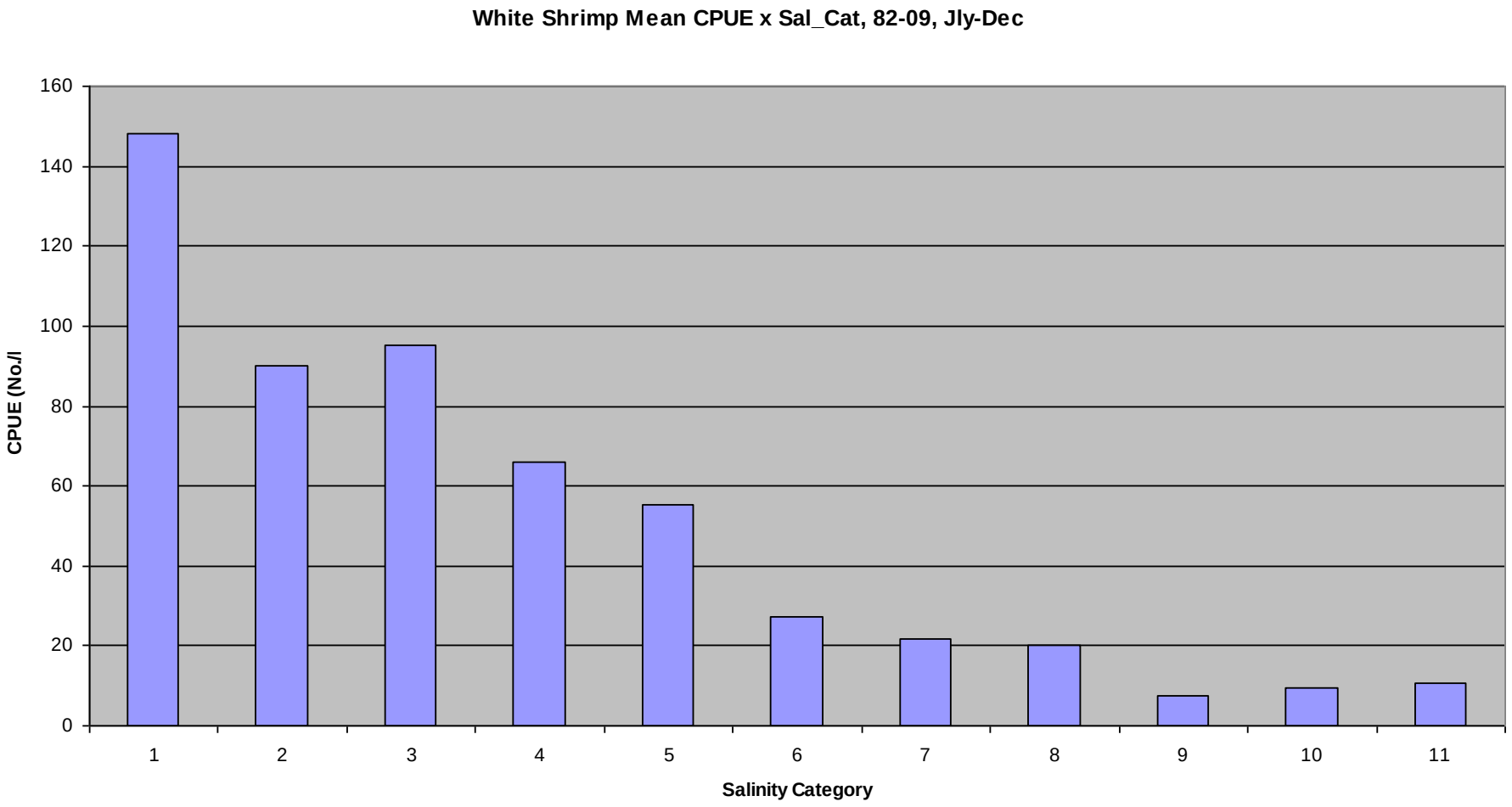
1982 1984 1986 1988 1990 1992 1994 1996 1998 2000 2002 2004 2006 2008 2010

White Shrimp: Multiple Comparison Graph

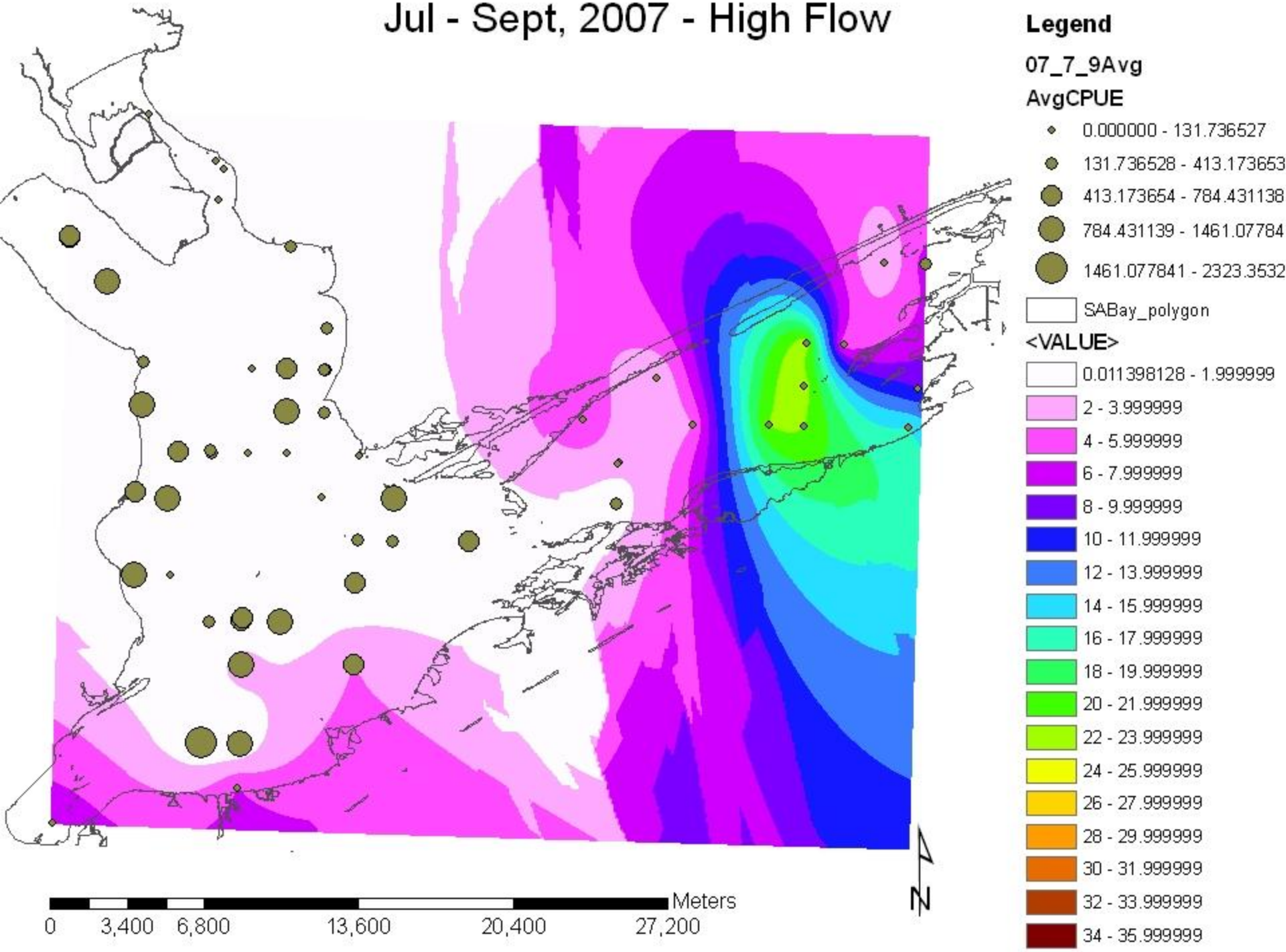
(Reduced data and ranked)



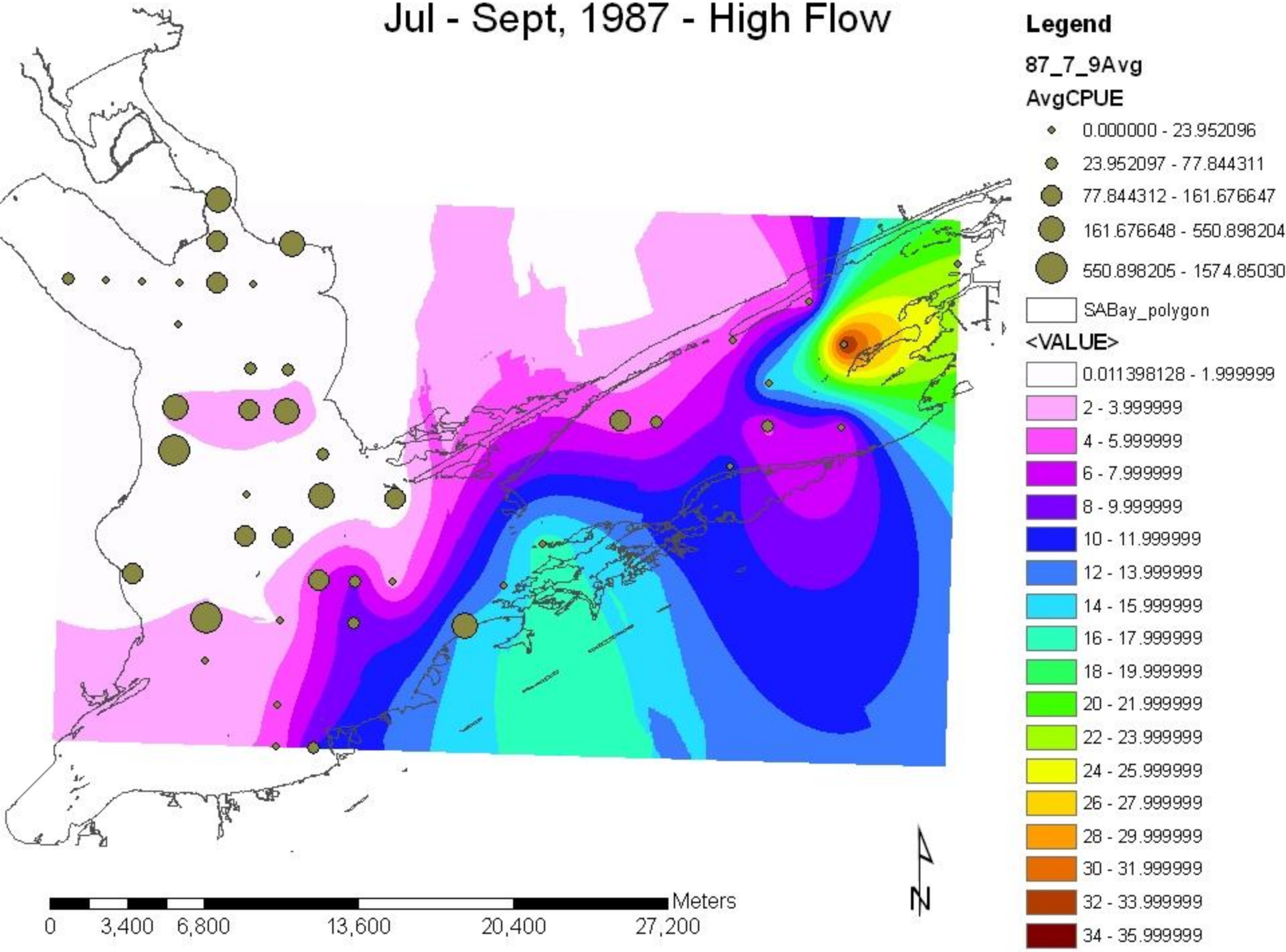
Symbol indicates significant difference.


White Shrimp Mean CPUE x Sal_Cat, 82-09, Jly-Dec
CPUE (No./l
160
140
120
100
80
60
40
20
0
1
2
3
4
5
6
7
8
9
10
11
Salinity Category

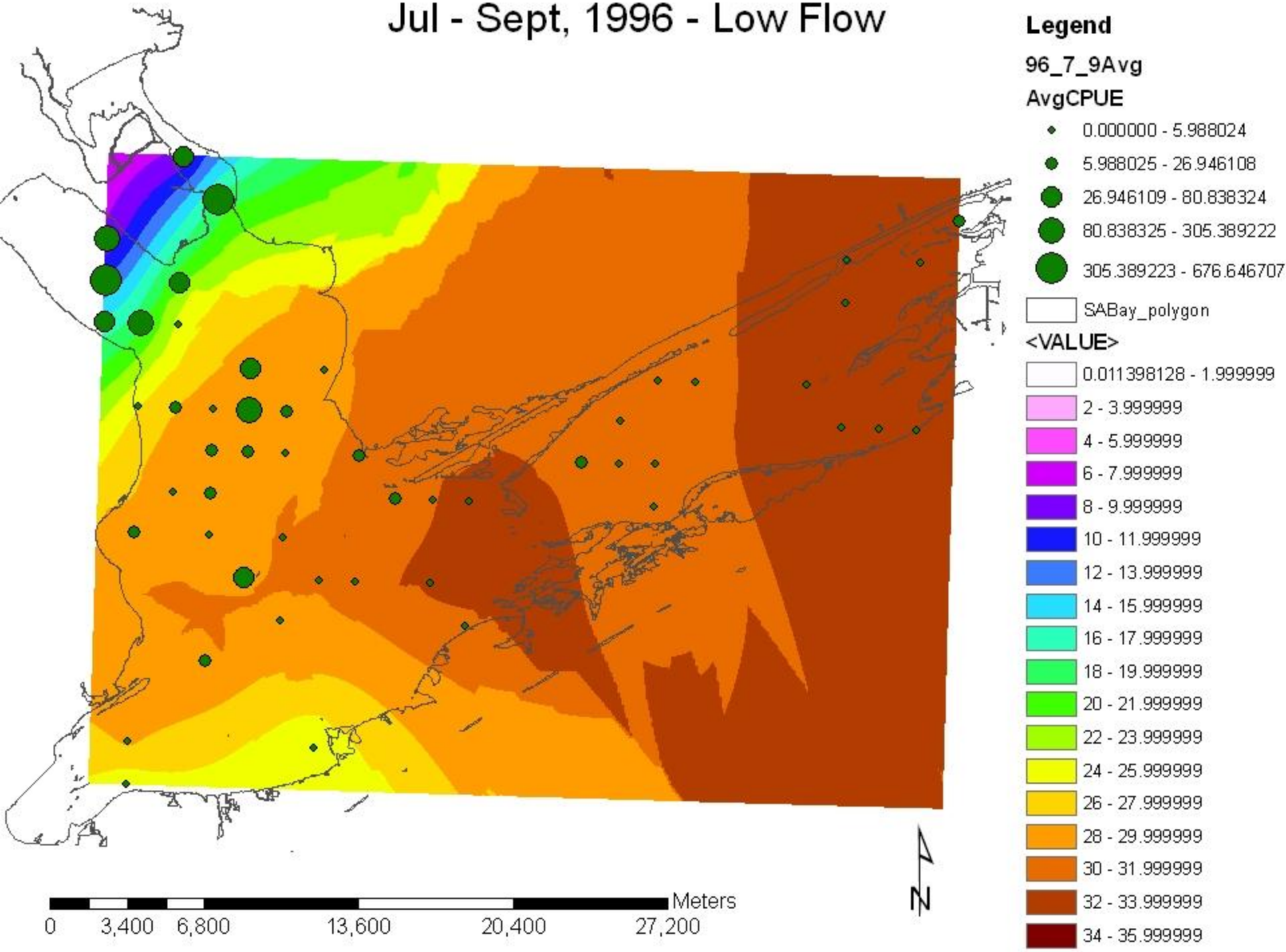
Jul - Sept, 2007 - High Flow



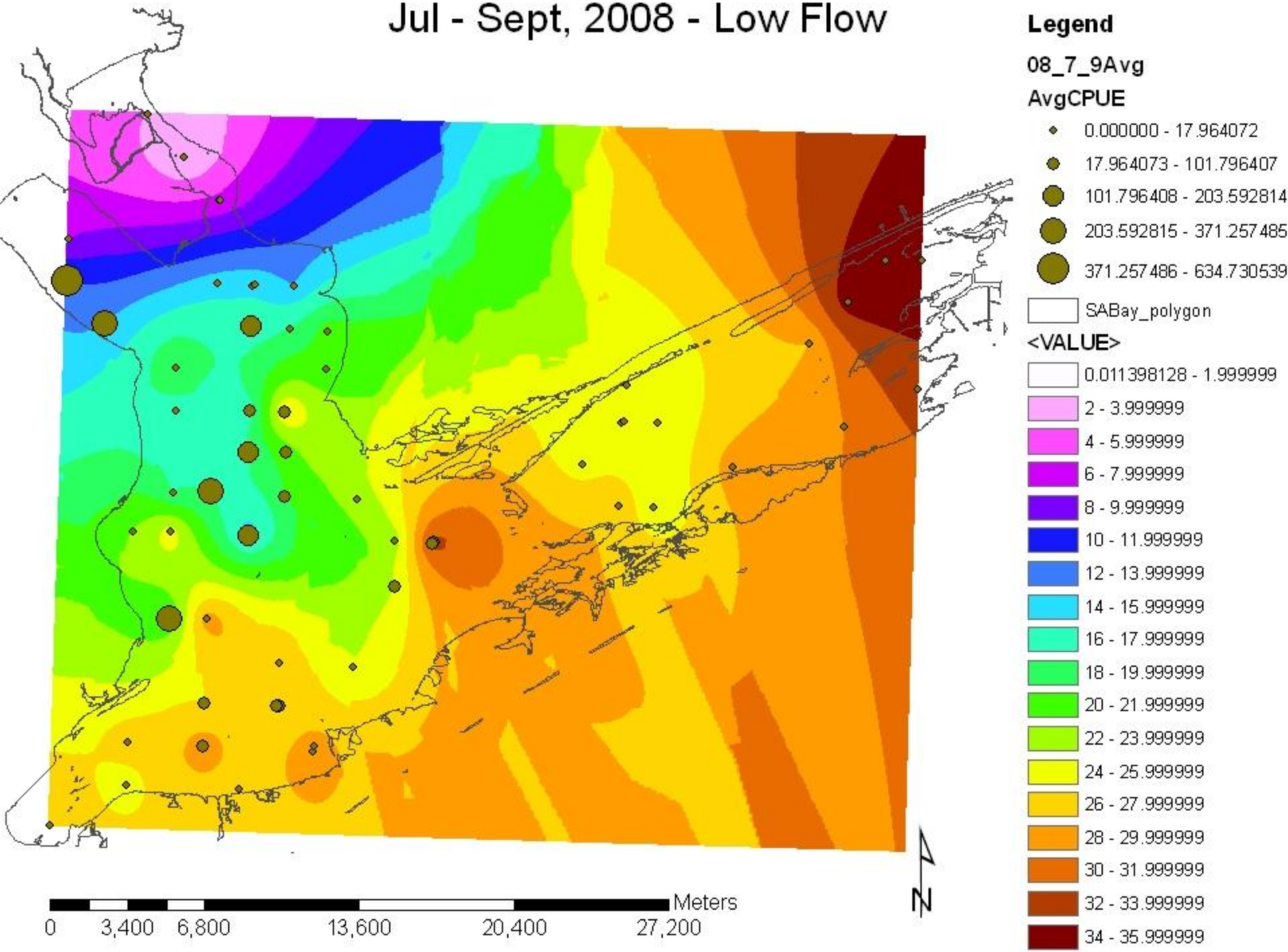
Jul - Sept, 1987 - High Flow

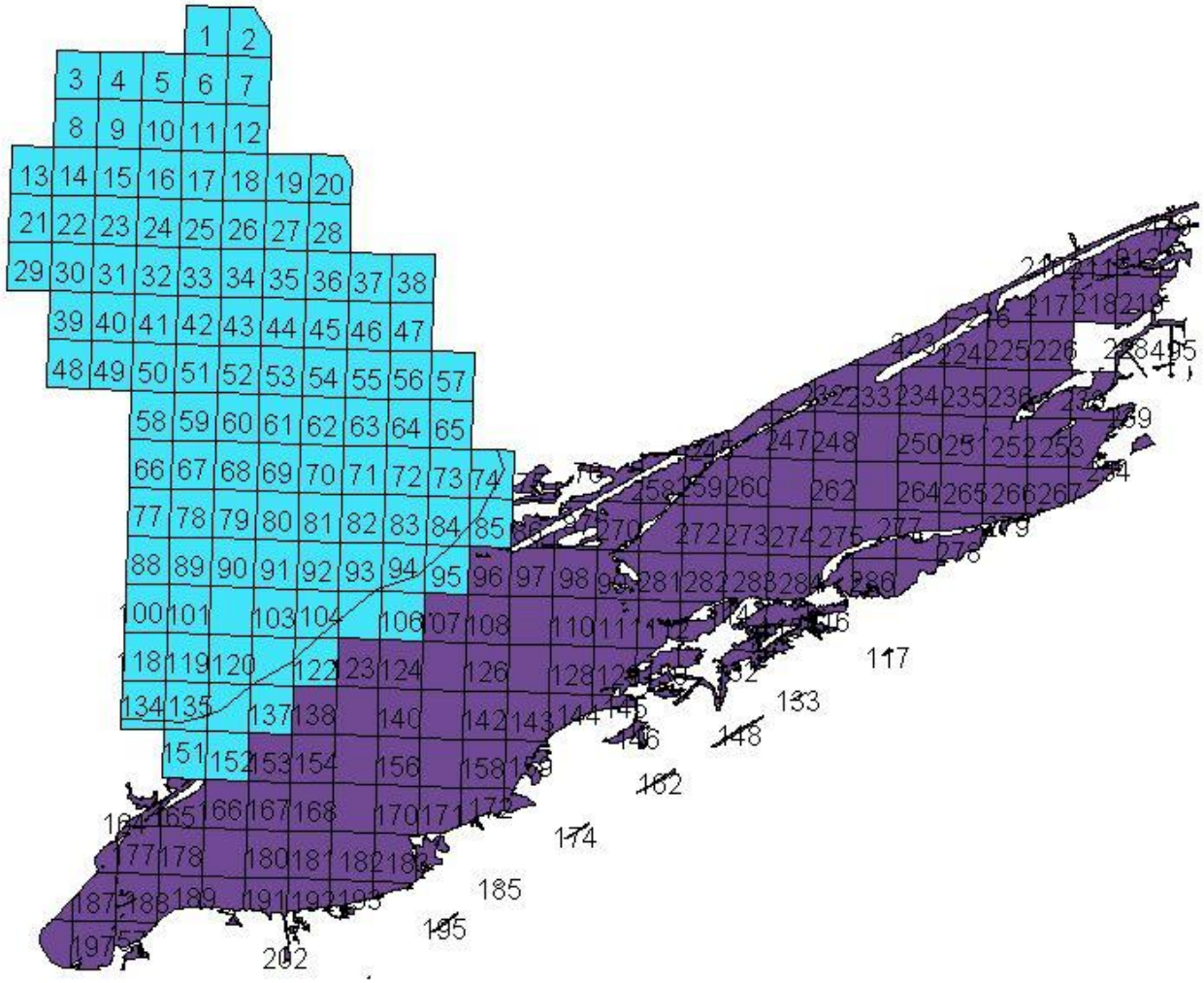


Jul - Sept, 1996 - Low Flow

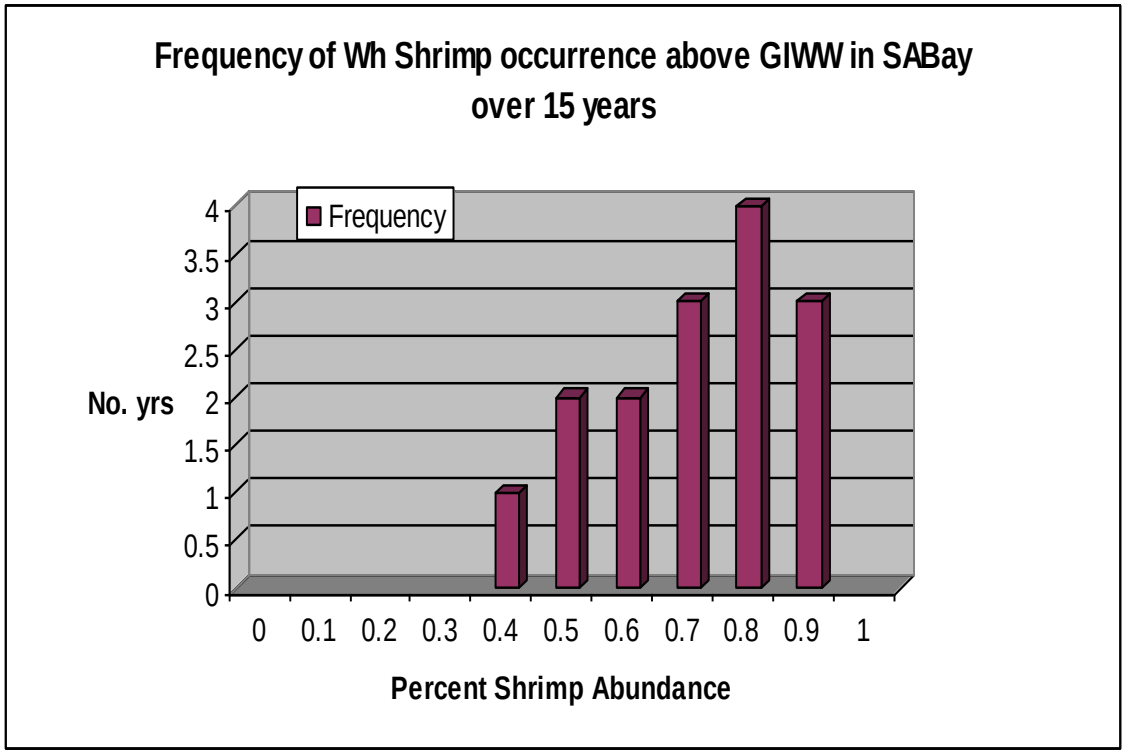


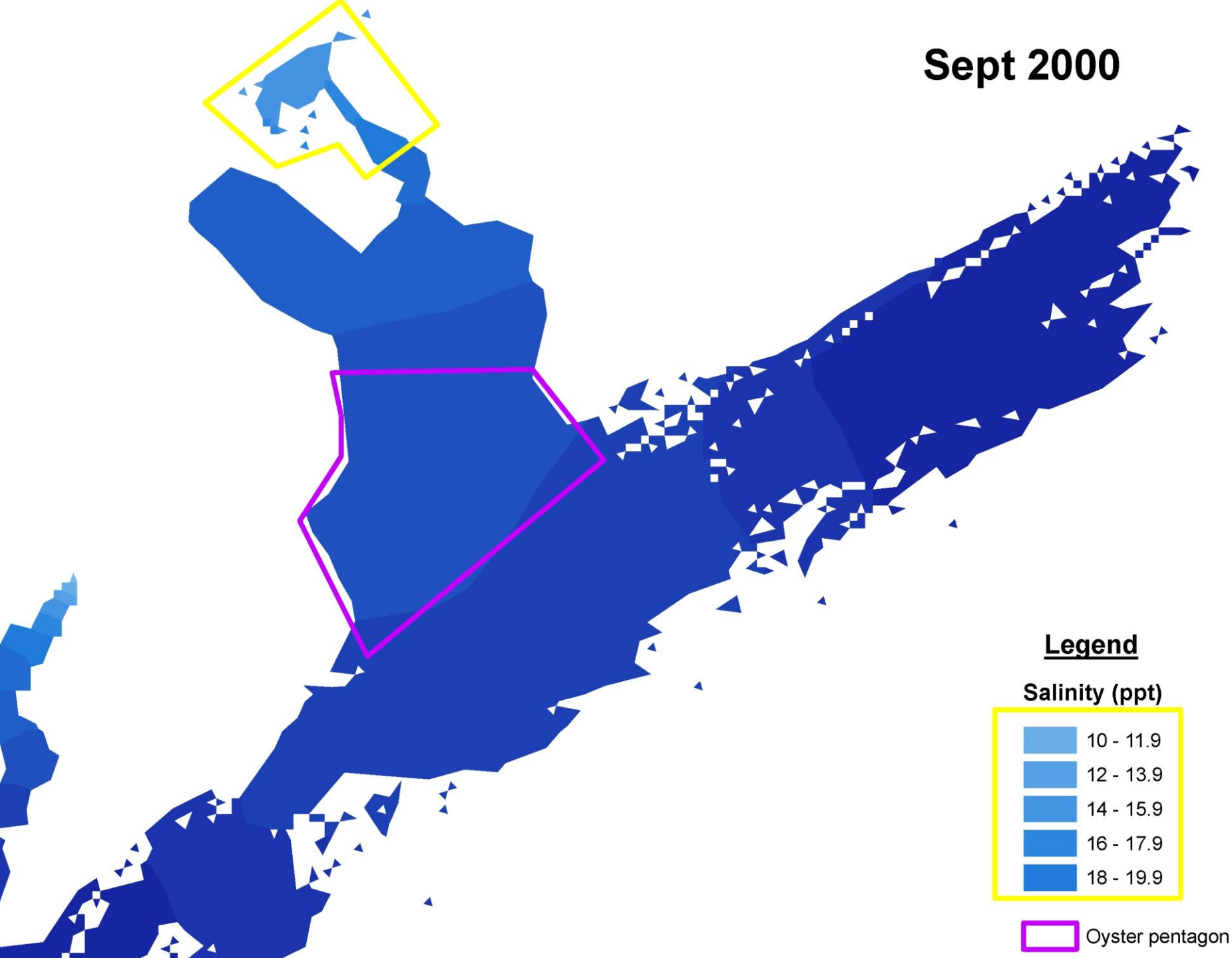
Jul - Sept, 2008 - Low Flow

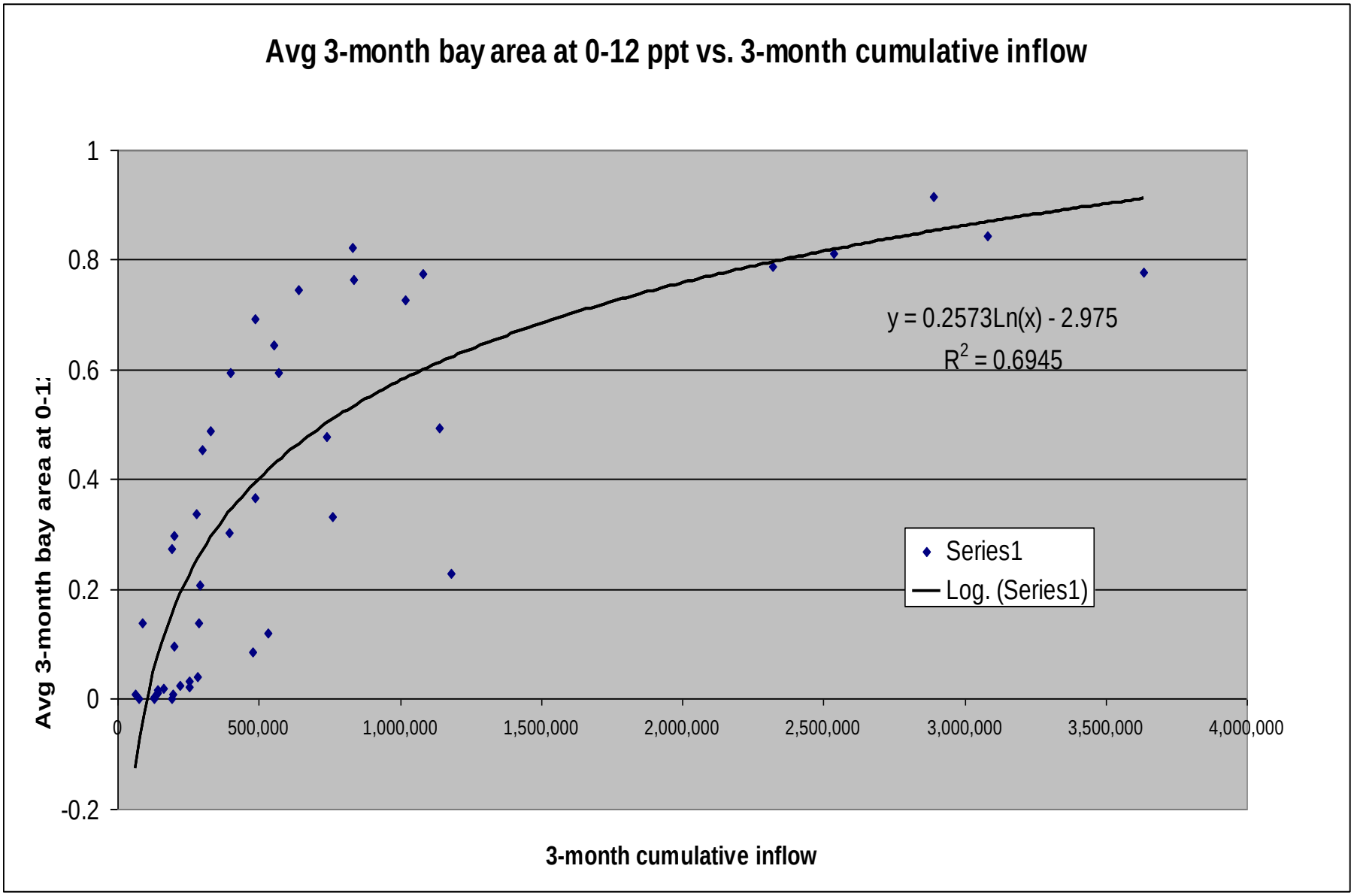


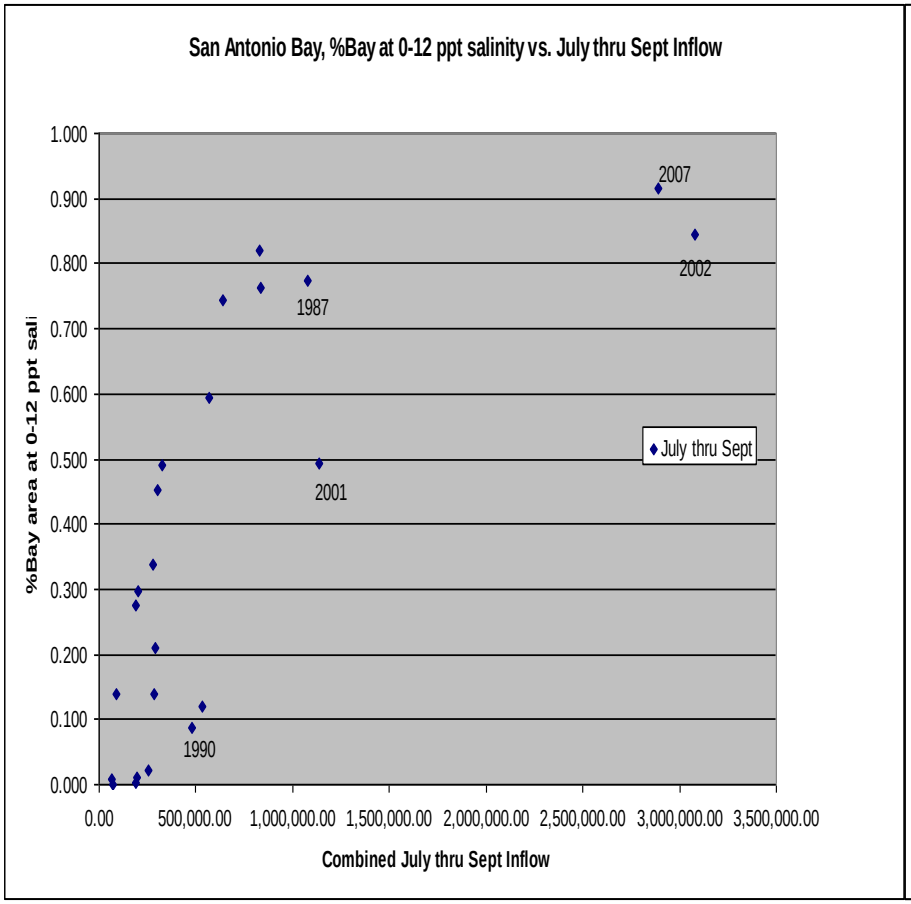


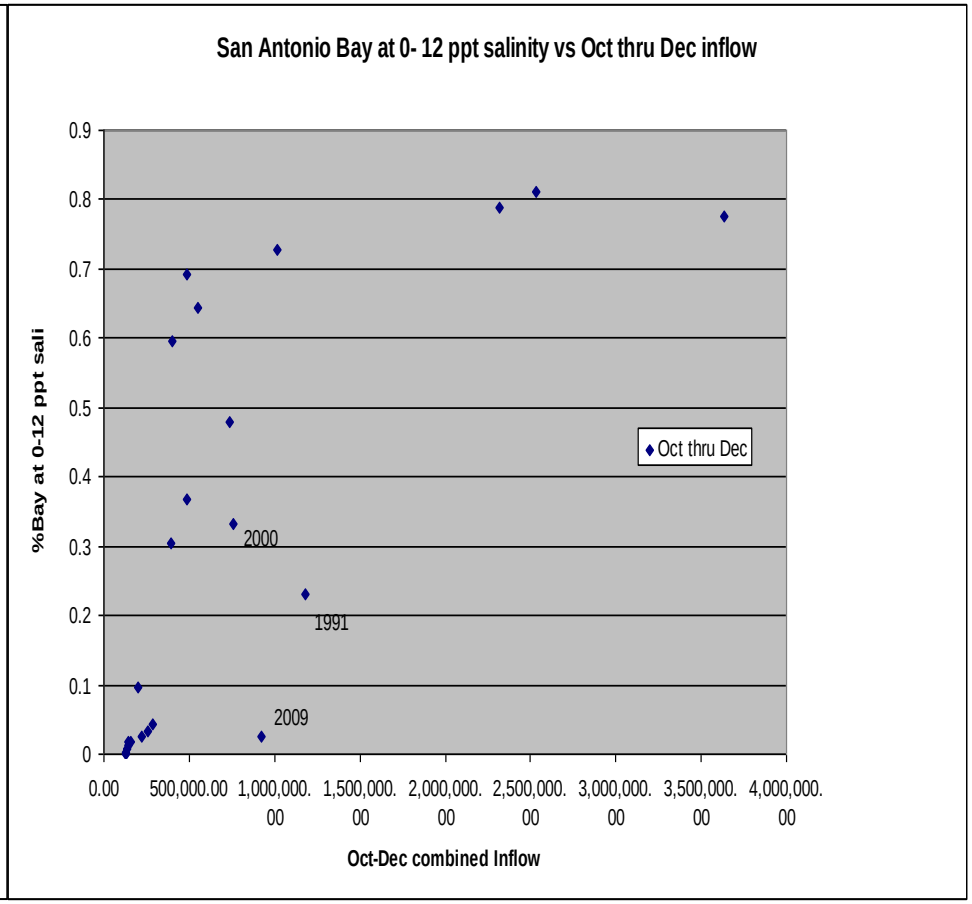
Year	CPUE above GIWW	CPUE above div. bay total
1984	4.67	0.39
1987	201.00	0.83
1988	188.82	0.97
2008	84.43	0.89
1993	42.91	0.52
1996	97.80	0.98
2001	63.07	0.70
2007	411.78	0.54
2009	21.56	0.79
1989	47.70	0.86
2005	86.23	0.71
1992	51.10	0.60
1994	127.15	0.90
1995	60.88	0.89
1999	19.36	0.80

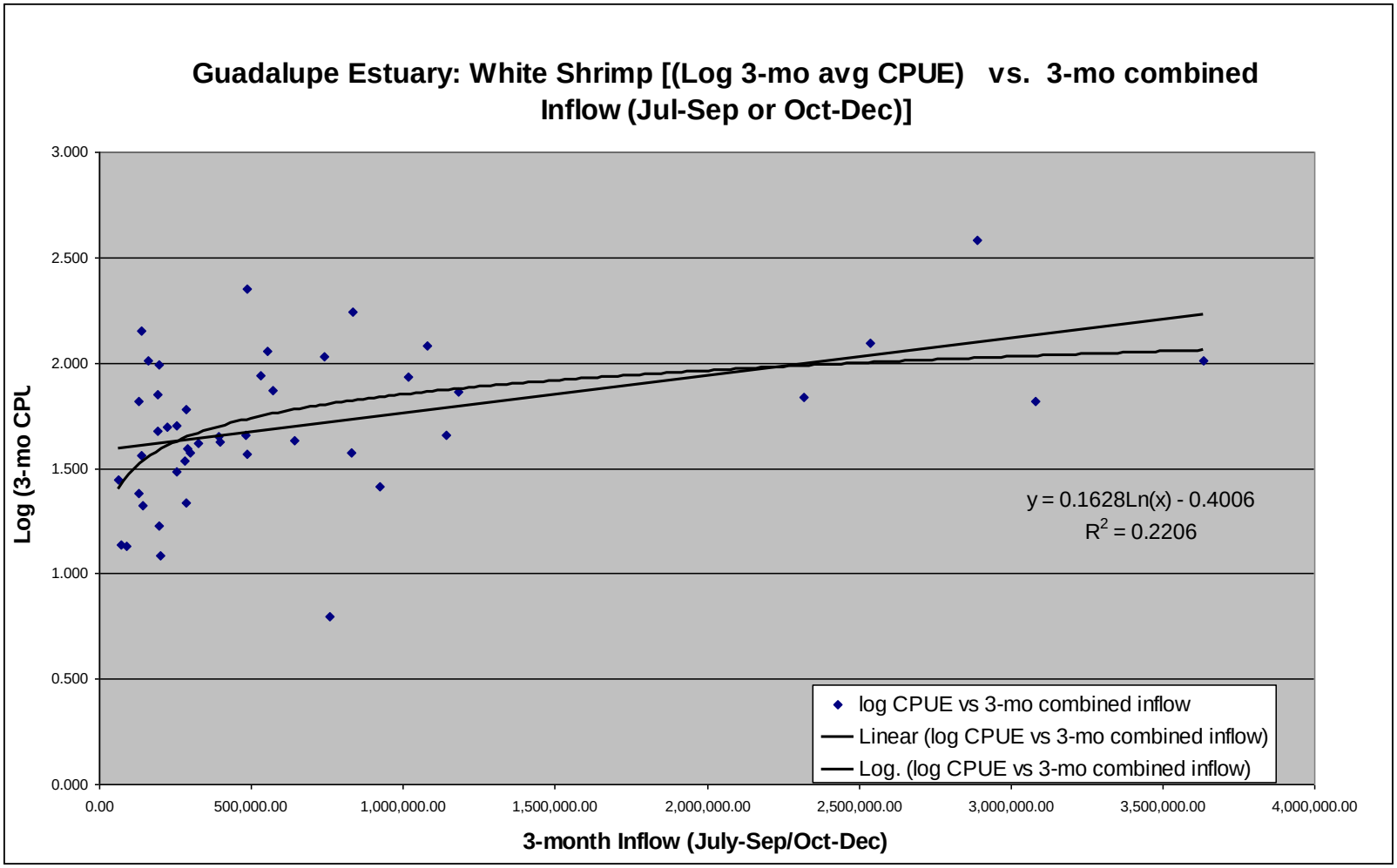


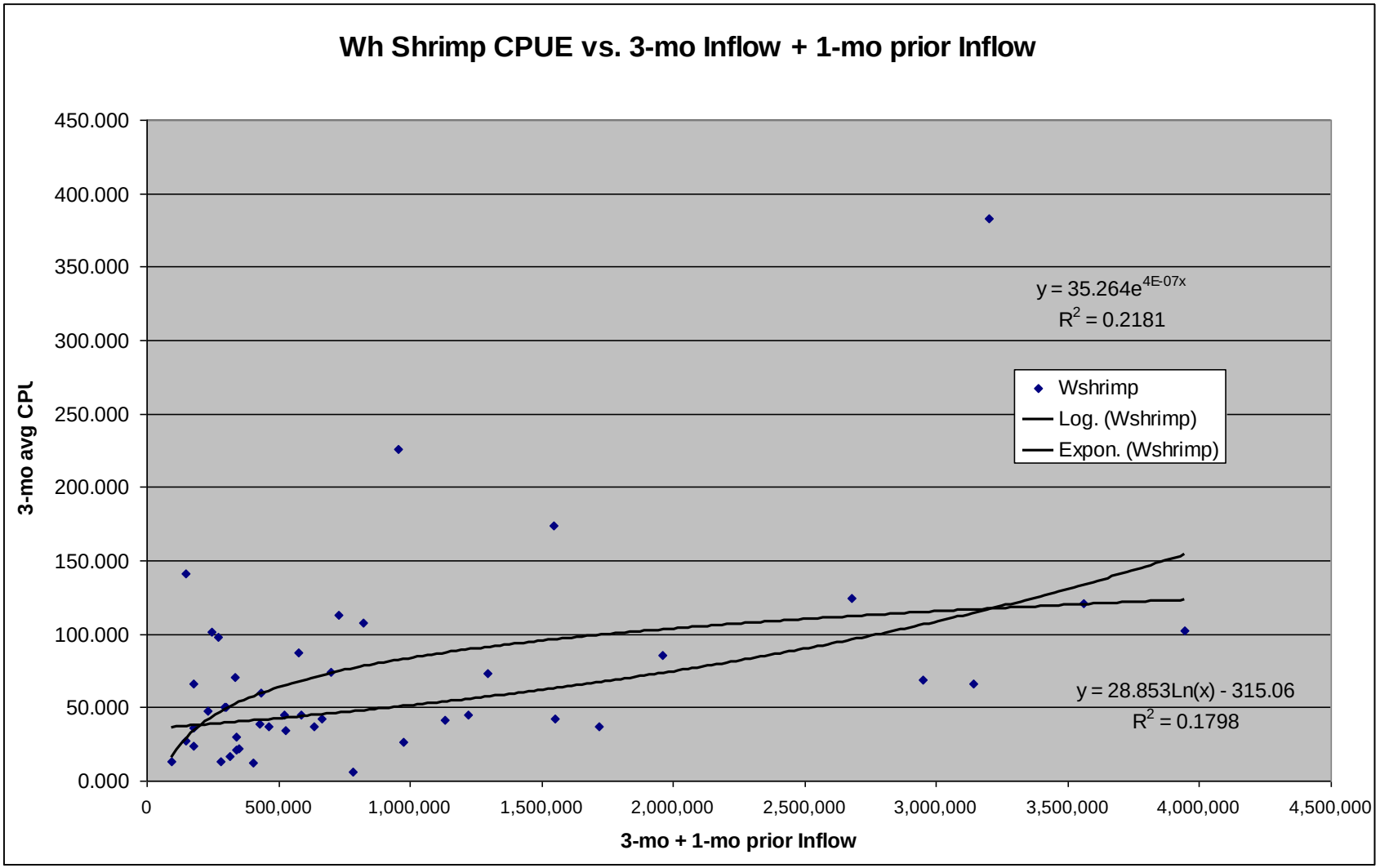

Sept 2000
Legend
Salinity (ppt)
10 - 11.9
12 - 13.9
14 - 15.9
16 - 17.9
18 - 19.9
Oyster pentagon

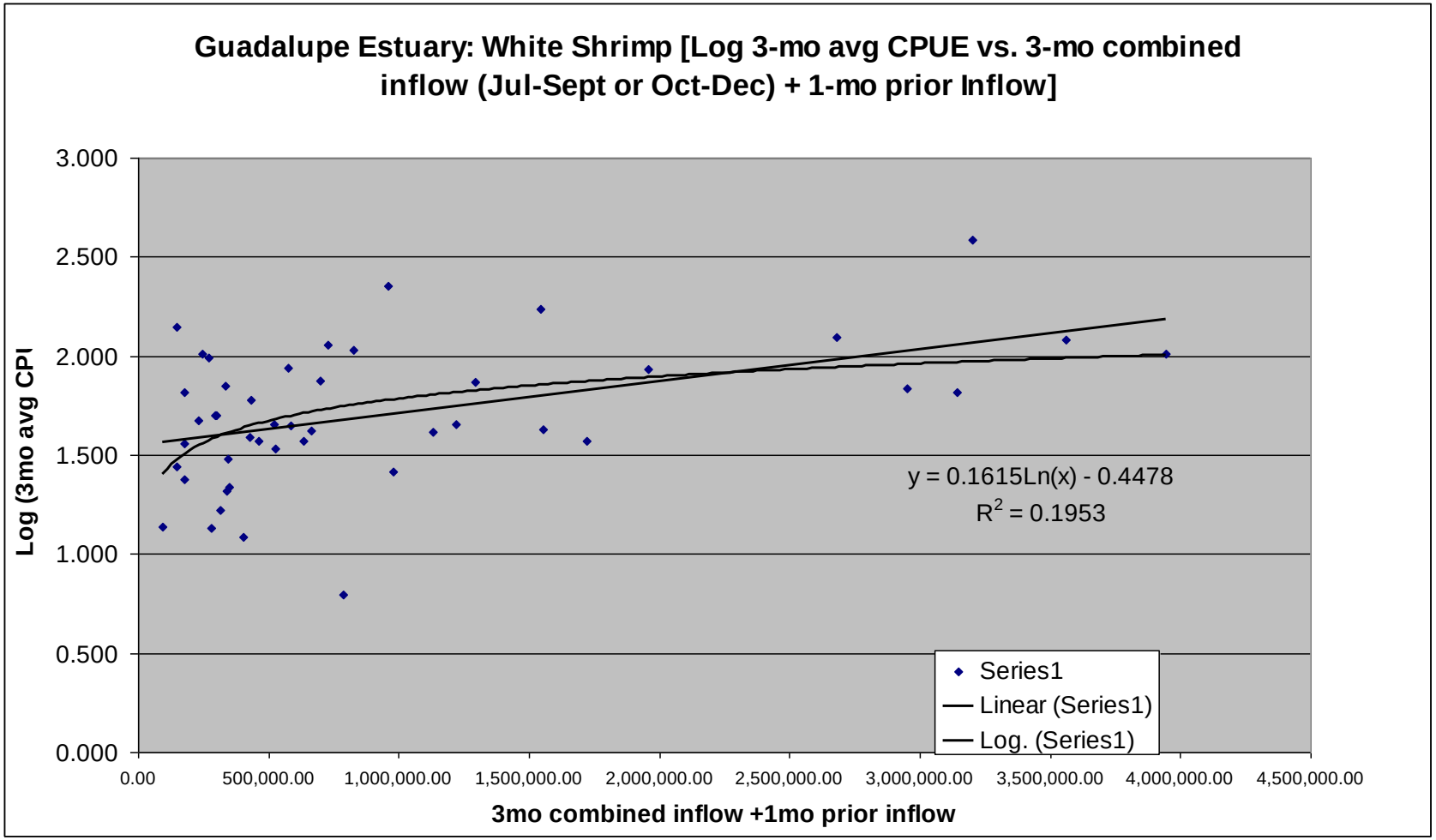

Avg 3-month bay area at 0-12 ppt vs. 3-month cumulative inflow
1
0.8
0.6
0.4
0.2
0
-0.2
Avg 3-month bay area at 0-1
0
500,000
1,000,000
1,500,000
2,000,000
2,500,000
3,000,000
3,500,000
4,000,000
y = 0.2573Ln(x) - 2.975
R2 = 0.6945
Series1
Log. (Series1)
3-month cumulative inflow


San Antonio Bay, %Bay at 0-12 ppt salinity vs. July thru Sept Inflow
%Bay area at 0-12 ppt sali
1.000
0.900
0.800
0.700
0.600
0.500
0.400
0.300
0.200
0.100
0.000
0.00
500,000.00
1,000,000.00
1,500,000.00
2,000,000.00
2,500,000.00
3,000,000.00
3,500,000.00
Combined July thru Sept Inflow
July thru Sept
2007
2002
1987
2001
1990


San Antonio Bay at 0- 12 ppt salinity vs Oct thru Dec inflow
%Bay at 0-12 ppt sali
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
0.00
500,000.00
1,000,000.00
1,500,000.00
2,000,000.00
2,500,000.00
3,000,000.00
3,500,000.00
4,000,000.00
Oct-Dec combined Inflow
Oct thru Dec
2000
1991
2009


Guadalupe Estuary: White Shrimp [(Log 3-mo avg CPUE) vs. 3-mo combined Inflow (Jul-Sep or Oct-Dec)]
Log (3-mo CPL
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0.00
500,000.00
1,000,000.00
1,500,000.00
2,000,000.00
2,500,000.00
3,000,000.00
3,500,000.00
4,000,000.00
3-month Inflow (July-Sep/Oct-Dec)
y = 0.1628Ln(x) - 0.4006
R2 = 0.2206
log CPUE vs 3-mo combined inflow
Linear (log CPUE vs 3-mo combined inflow)
Log. (log CPUE vs 3-mo combined inflow)


Wh Shrimp CPUE vs. 3-mo Inflow + 1-mo prior Inflow
3-mo avg CPL
450.000
400.000
350.000
300.000
250.000
200.000
150.000
100.000
50.000
0.000
0
500,000
1,000,000
1,500,000
2,000,000
2,500,000
3,000,000
3,500,000
4,000,000
4,500,000
3-mo + 1-mo prior Inflow
y = 35.264e^4E-07x
R^2 = 0.2181
Wshrimp
Log. (Wshrimp)
Expon. (Wshrimp)
y = 28.853Ln(x) - 315.06
R^2 = 0.1798

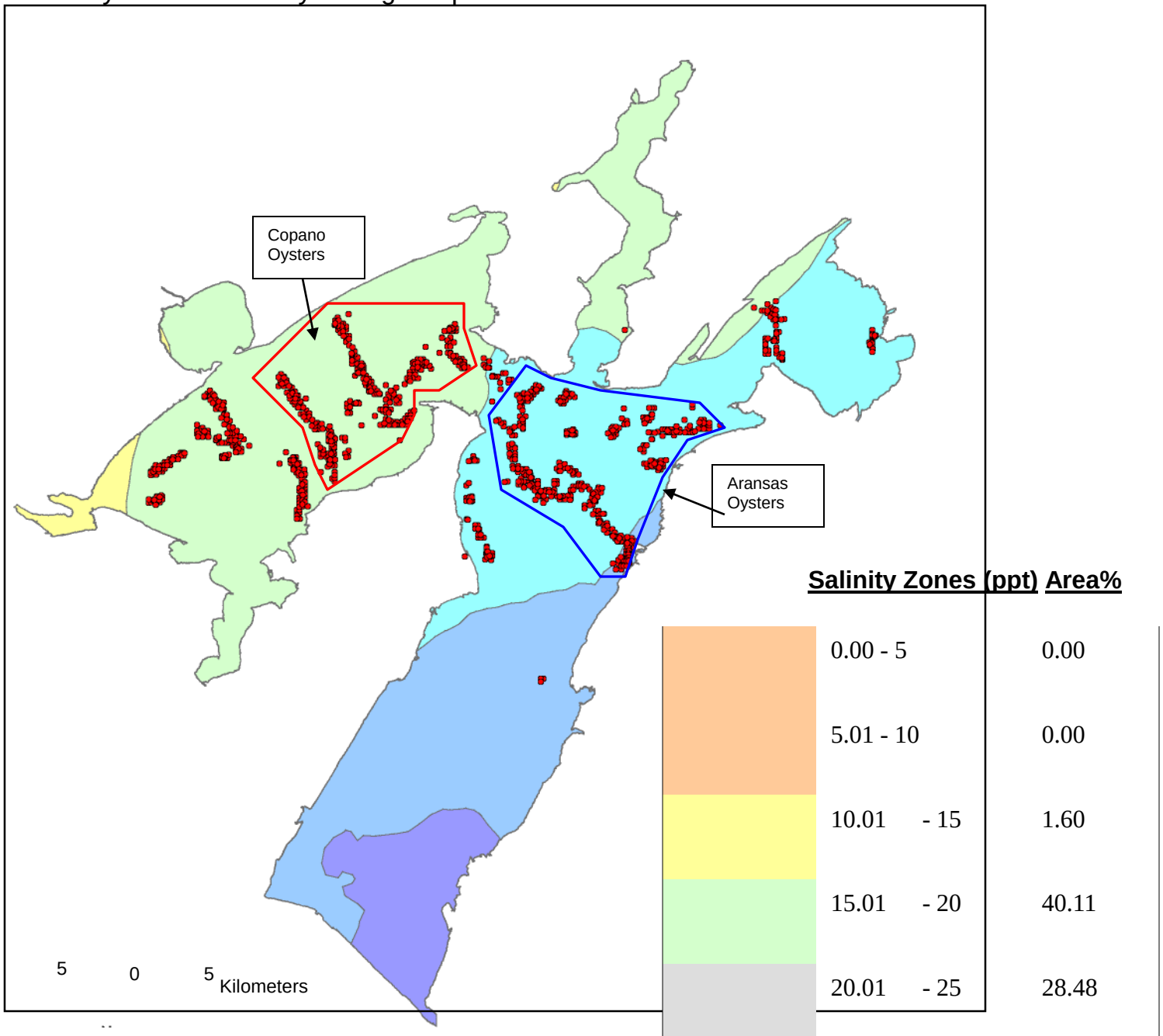

Guadalupe Estuary: White Shrimp [Log 3-mo avg CPUE vs. 3-mo combined inflow (Jul-Sept or Oct-Dec) + 1-mo prior Inflow]
Log (3mo avg CPI
3.000
2.500
2.000
1.500
1.000
0.500
0.000
0.00
500,000.00
1,000,000.00
1,500,000.00
2,000,000.00
2,500,000.00
3,000,000.00
3,500,000.00
4,000,000.00
4,500,000.00
3mo combined inflow +1mo prior inflow
y = 0.1615Ln(x) - 0.4478
R2 = 0.1953
Series1
Linear (Series1)
Log. (Series1)

White Shrimp Zone -- July - Sept

Year	Jul-Sep Combined Inflow for 3 months Sorted	Jul-Sep 1-month prior inflow June	% Bay at 0-12ppt 3-month AVG
1989	64,177.31	82,032.52	0.009
2009	73,040.19	22,340.08	2.43209E-07
2000	87,502.71	192,207.63	0.140
1994	191,428.77	143,260.75	0.274
2008	192,361.00	40,826.19	0.002
1988	196,895.00	72,016.04	0.010
1999	199,609.54	205,032.91	0.297
1996	255,349.49	41,961.66	0.021
1995	279,911.12	246,256.68	0.339
2005	286,988.35	146,035.09	0.140
2006	288,989.79	141,004.86	0.208
1991	299,383.87	163,836.11	0.453
1993	327,575.72	804,904.48	0.490
1998	479,448.50	42,905.34	0.086
1990	531,931.66	43,850.52	0.120
2003	568,941.42	128,968.67	0.594
1992	642,099.55	910,664.11	0.745
1997	831,185.13	887,855.82	0.821
2004	835,708.67	710,372.28	0.764
1987	1,080,652.15	2,478,062.00	0.774
2001	1,139,796.21	82,222.29	0.493
2007	2,891,326.67	309,811.78	0.916
2002	3,080,570.60	62,523.29	0.845

White Shrimp Zone -- Oct - Dec

Year	Oct-Dec Combined Inflow for 3 months Sorted	Oct-Dec 1-month prior inflw Sept	% Bay at 0-12ppt 3-month AVG
2008	128,260.18	50,935.10	0.0003
1988	130,209.00	49,139.00	0.0028
1989	137,009.74	9,463.33	0.0083
1999	139,662.15	39,828.17	0.0116
1996	141,025.50	197,443.08	0.0182
1990	160,934.11	86,335.10	0.0189
2006	198,271.41	116,937.22	0.0955
1995	221,890.10	79,761.47	0.0251
2005	254,863.27	87,287.41	0.0340
1993	283,750.67	64,816.95	0.0424
1987	394,309.83	189,300.30	0.3036
2003	398,074.92	267,828.90	0.5955
1992	486,844.32	146,704.35	0.3664
2007	487,037.92	470,018.97	0.6930
1997	551,383.36	178,130.89	0.6439
1994	738,408.16	85,462.38	0.4784
2000	759,452.88	25,351.11	0.3319
2009	921,606.19	55,606.92	0.0251
2001	1,017,850.99	941,895.50	0.7276
1991	1,182,465.95	112,202.08	0.2305
2002	2,320,088.85	628,855.55	0.7872
2004	2,535,684.11	143,564.75	0.8123
1998	3,633,506.93	311,410.22	0.7767

TPWD Oyster Dredging Location

Salinity Zonation -- May through September