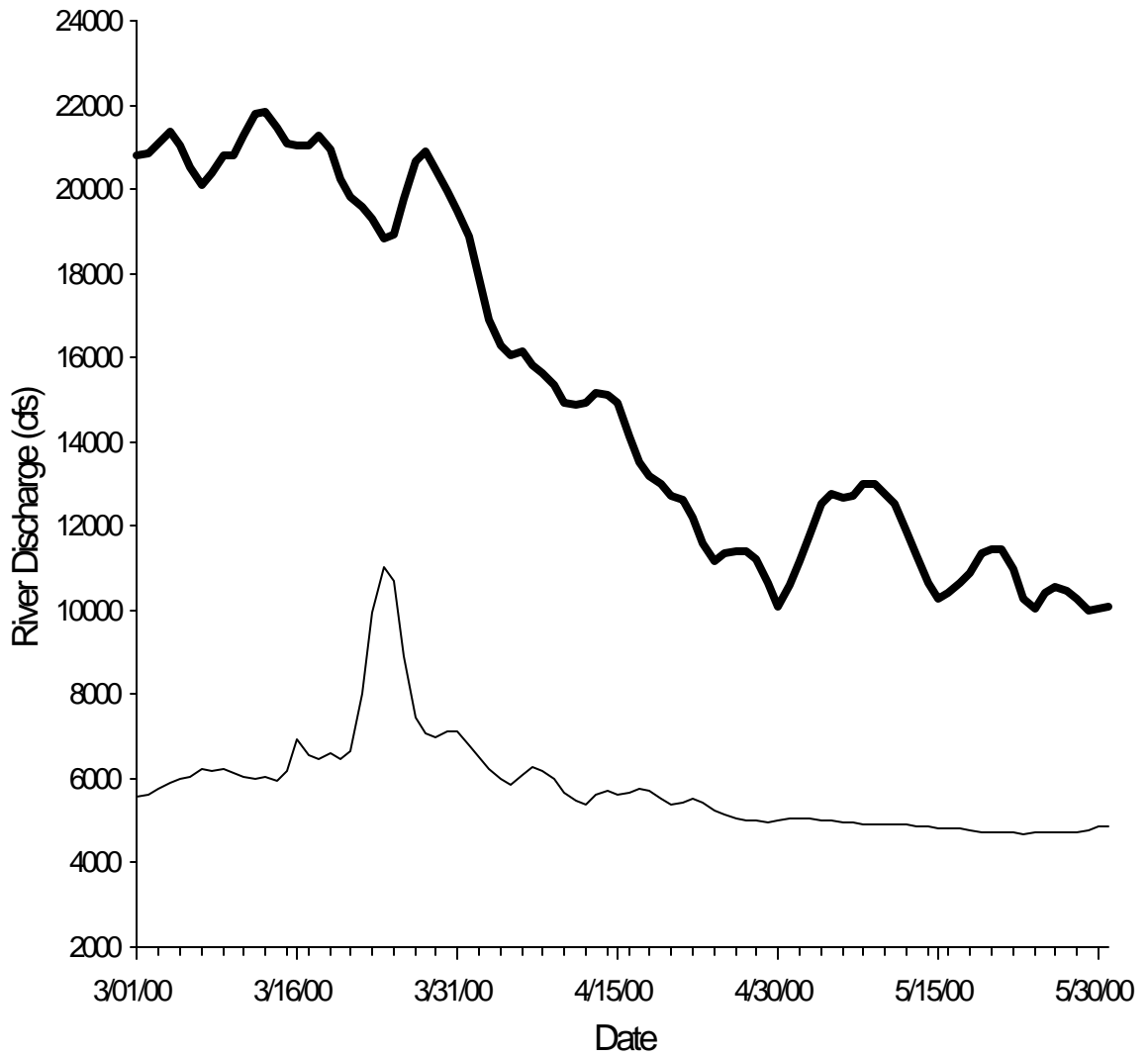
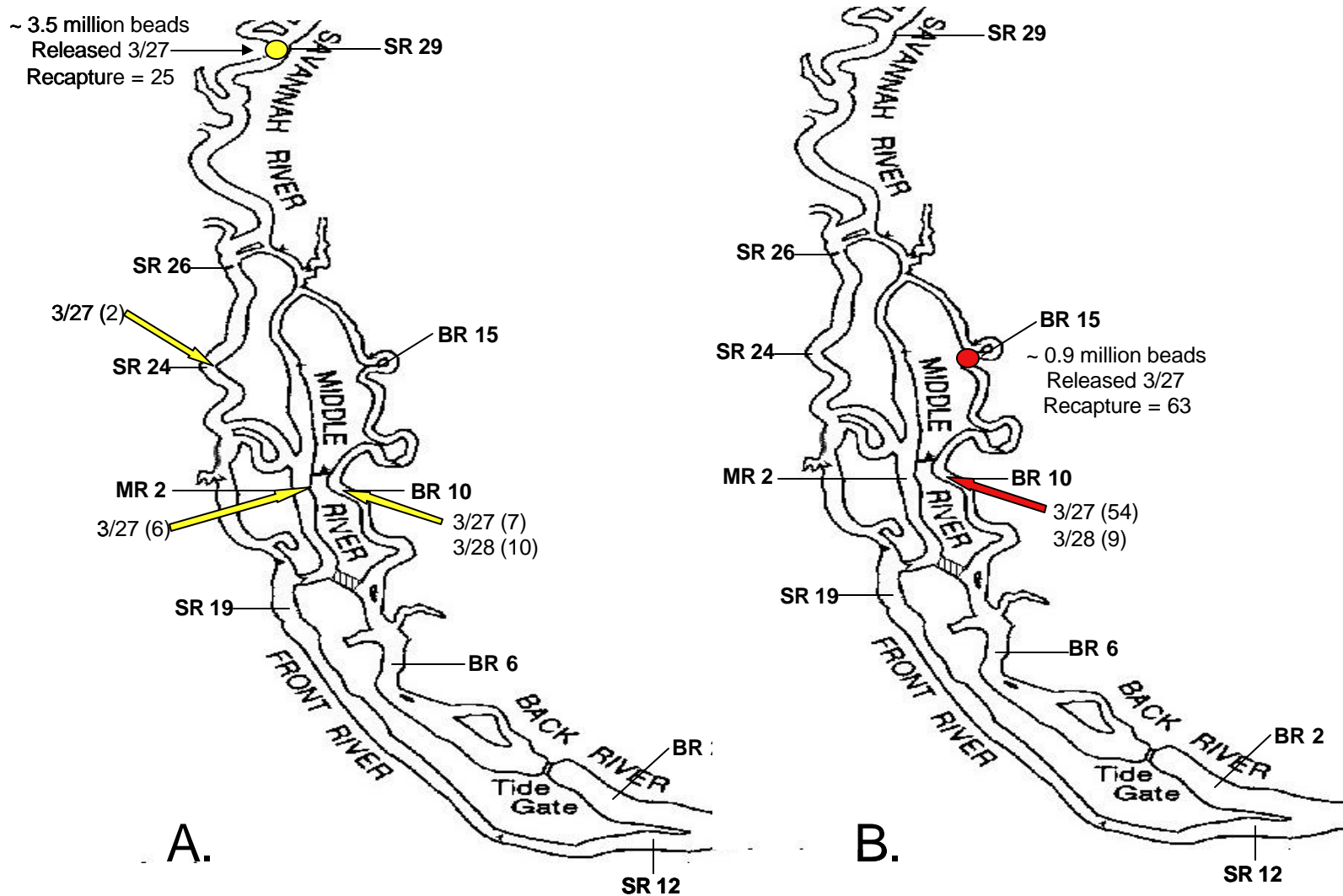


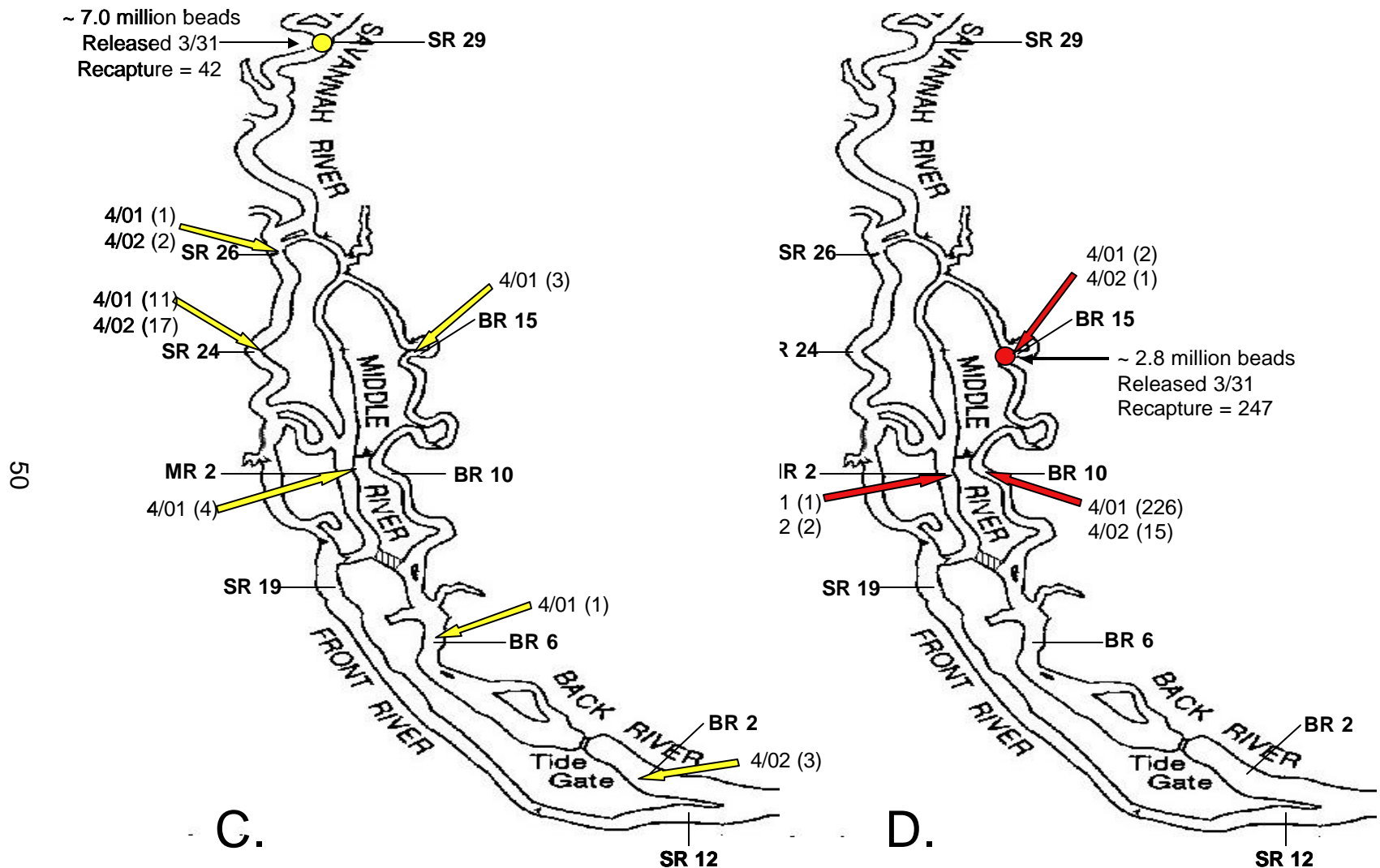
**Figure 1.** Map of the Savannah River Estuary with egg sampling and bead release stations and pertinent landmarks indicated, March - May, 2000.



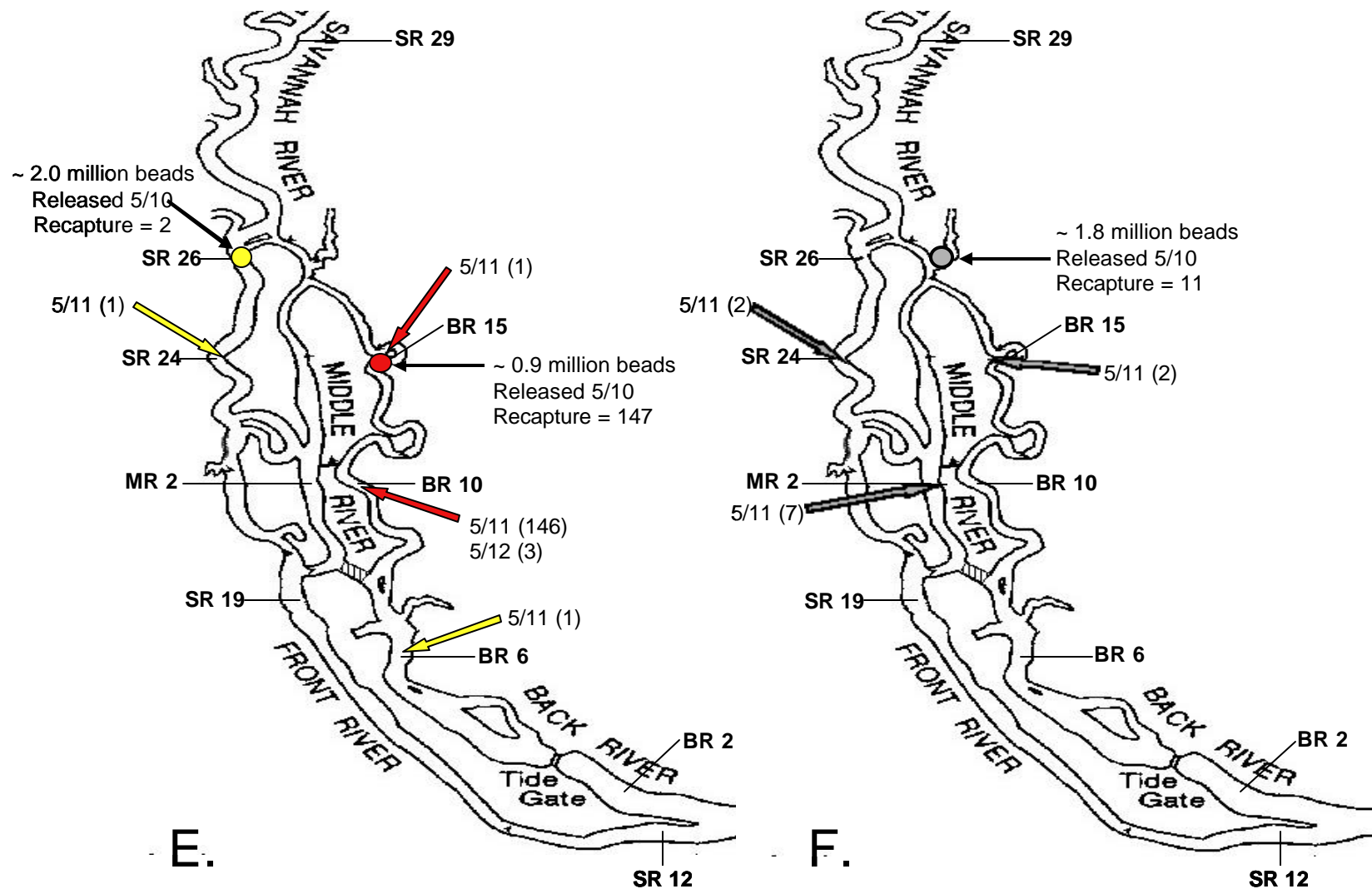
**Figure 2.** Mean daily discharge ( $\text{ft}^3/\text{s}$ ) for the lower Savannah River (thick line), March-May, 1990-1999, and daily discharge (thin line), March-May, 2000, as measured at Clyo, Georgia. Data courtesy of United States Geological Survey.



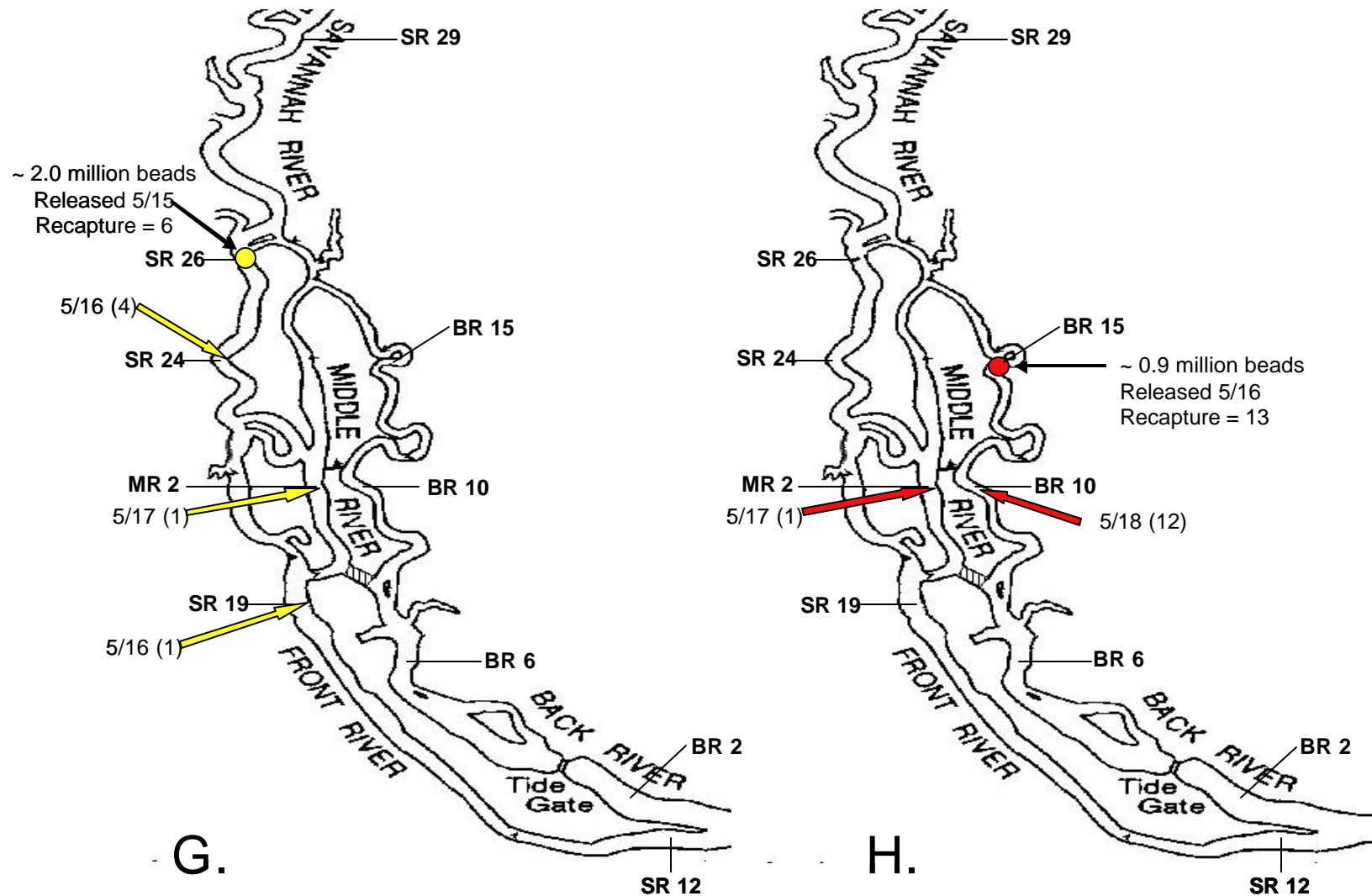
**Figures 3A and B.** Release (circles) and recapture (arrows) locations of beads, during egg surrogate studies in the Savannah River Estuary, March and May, 2000. The date (month/day) and number of beads recaptured (in parentheses) are noted at each instance. **A.** Release at SR29 March 27, 2000, and subsequent recaptures. **B.** Release at BR15 on March 27, 2000, and subsequent recaptures.



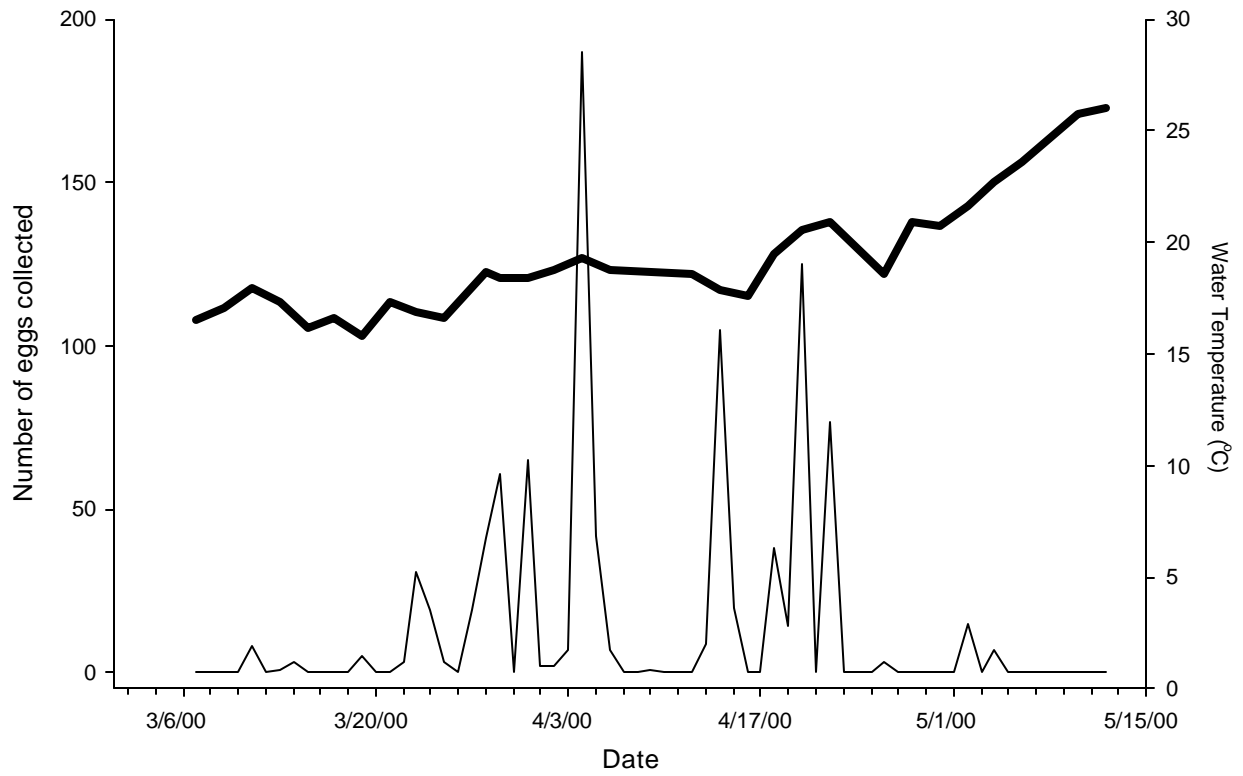
**Figures 3 C and D.** Release (circles) and recapture (arrows) locations of beads, during egg surrogate studies in the Savannah River Estuary, March and May, 2000. The date (month/day) and number of beads recaptured (in parentheses) are noted at each instance. **C.** Release at SR29 on March 31, 2000, and subsequent recaptures. **D.** Release at BR15 on March 31, 2000, and subsequent recaptures.



**Figures 3 E and F.** Release (circles) and recapture (arrows) locations of beads, during egg surrogate studies in the Savannah River Estuary, March and May, 2000. The date (month/day) and number of beads recaptured (in parentheses) are noted at each instance. **E.** Releases at SR26 and BR15 on May 10, 2000, and subsequent recaptures. **F.** Release at Union Creek on May 10, 2000, and subsequent recaptures.



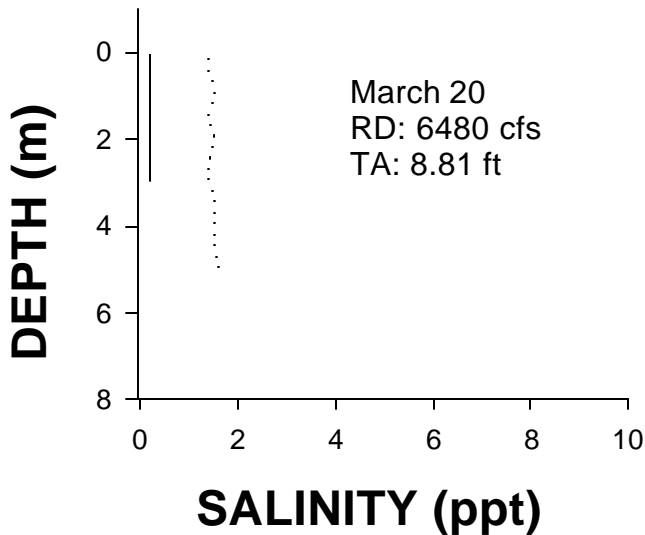
**Figures 3G and H.** Release (circles) and recapture (arrows) locations of beads, during egg surrogate studies in the Savannah River Estuary, March and May, 2000. The date (month/day) and number of beads recaptured (in parentheses) are noted at each instance. **G.** Release at SR26 on May 15, 2000, and subsequent recaptures. **H.** Release at BR15 on May 16, 2000, and subsequent recaptures.



**Figure 4.** Total number of striped bass eggs captured in the Savannah River Estuary (thin line) and water temperature at station SR26 (thick line), March - May, 2000.

# BR 10

## SPRING TIDE



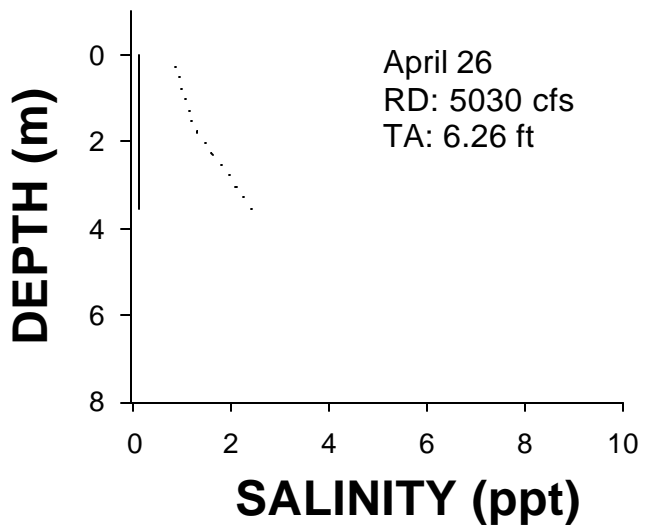
April 18  
RD: 5690 cfs  
TA: 8.82 ft

Salinity was below 0.5 ppt at all depths during both high- and low-slack tidal periods of the April spring-tide

## NEAP TIDE

March 28(h), 29(l)  
RD: 7070, 6960 cfs  
TA: 5.81, 6.95 ft

Salinity was below 0.5 ppt at all depths during both high- and low-slack tidal periods of the March neap-tide

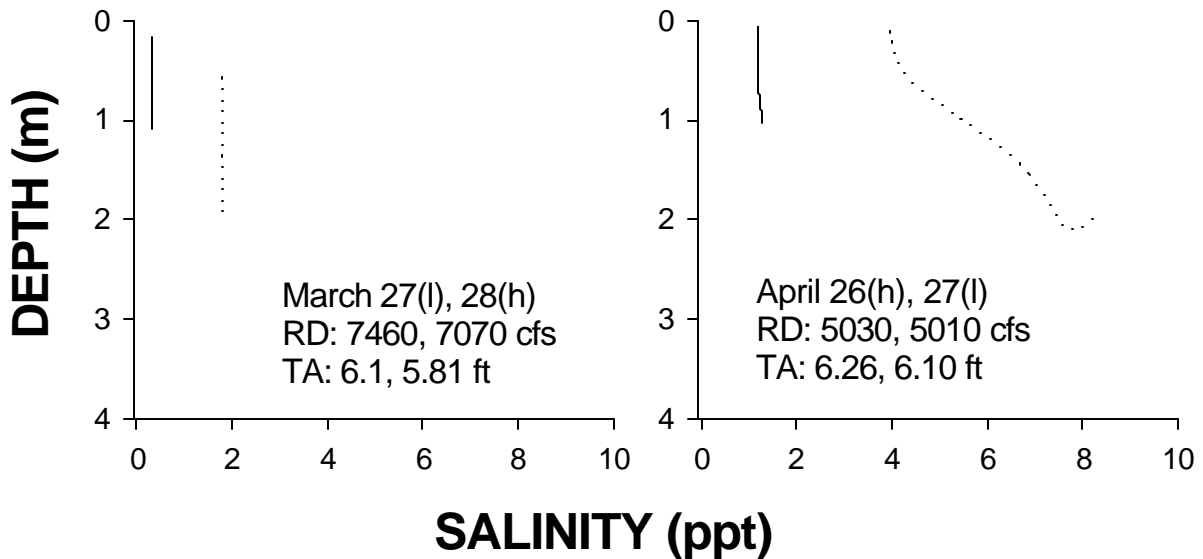
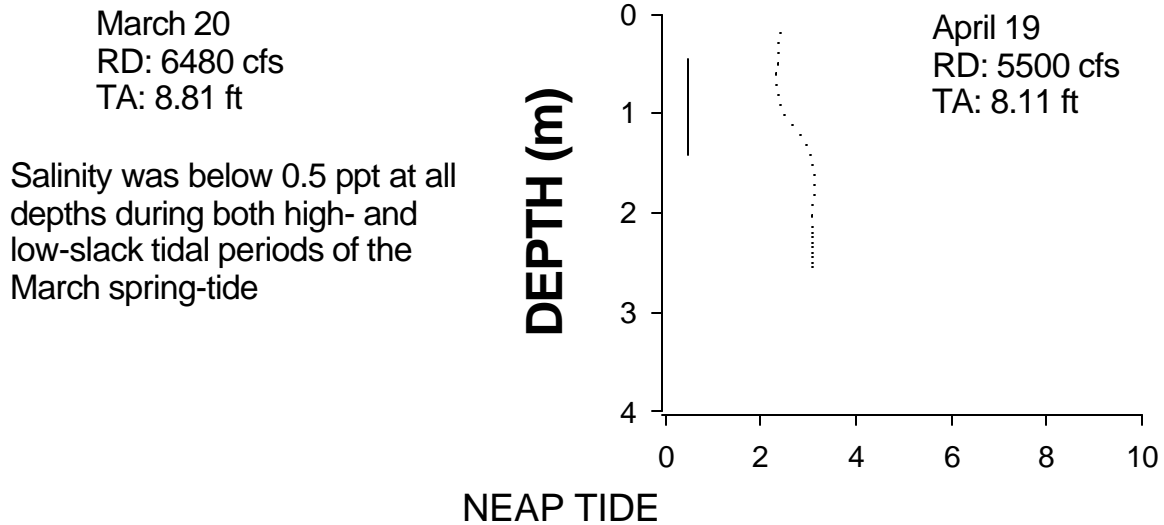


**Figure 5a.** Salinity profiles at egg sampling stations, Savannah River Estuary, March and April, 2000. Salinity profiles at station BR10 during high-slack (dotted line) and low-slack (solid line) tides. RD=river discharge measured at Clio, GA. TA=tidal amplitude (mean from stations at I-95 bridge, Broad Street, and Lucknow Canal). Discharge and tidal amplitude data courtesy of USGS.



# MR 2

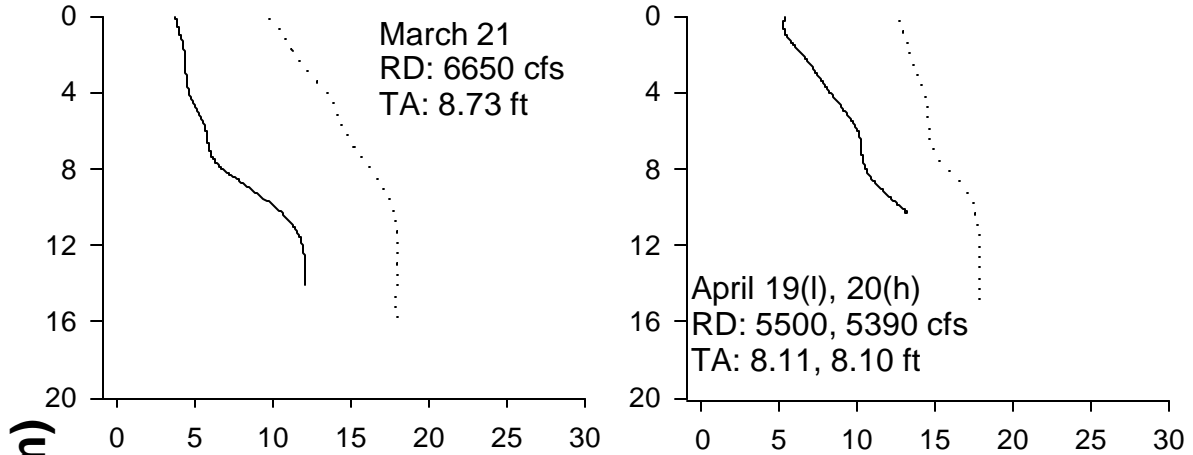
## SPRING TIDE



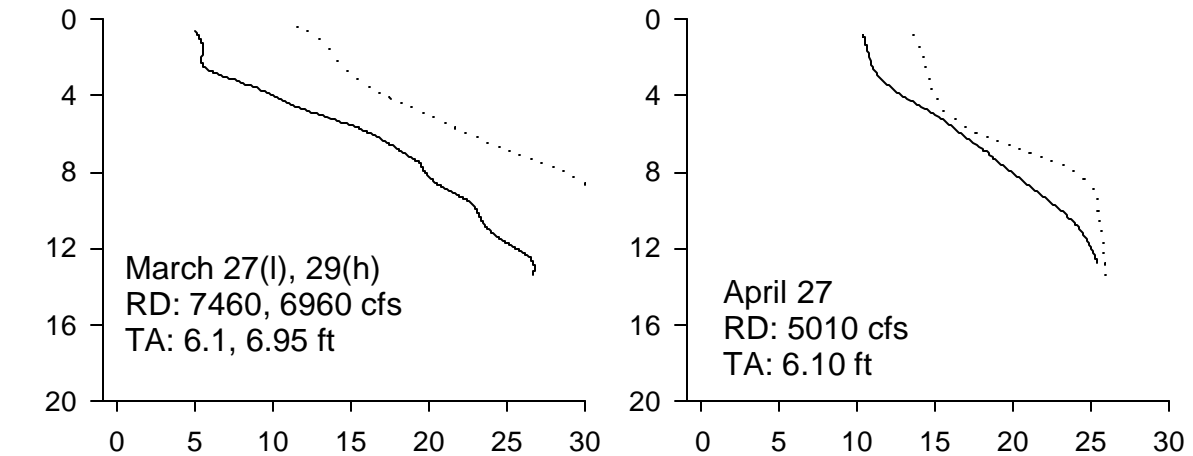
**Figure 5b.** Salinity profiles at egg sampling stations, Savannah River Estuary, March and April, 2000. Salinity profiles at station MR2 during high-slack (dotted line) and low-slack (solid line) tides. RD=river discharge measured at Clyo, GA. TA=tidal amplitude (mean from stations at I-95 bridge, Broad Street, and Lucknow Canal). Discharge and tidal amplitude data courtesy of USGS.

# SR 12

## SPRING TIDE



## NEAP TIDE

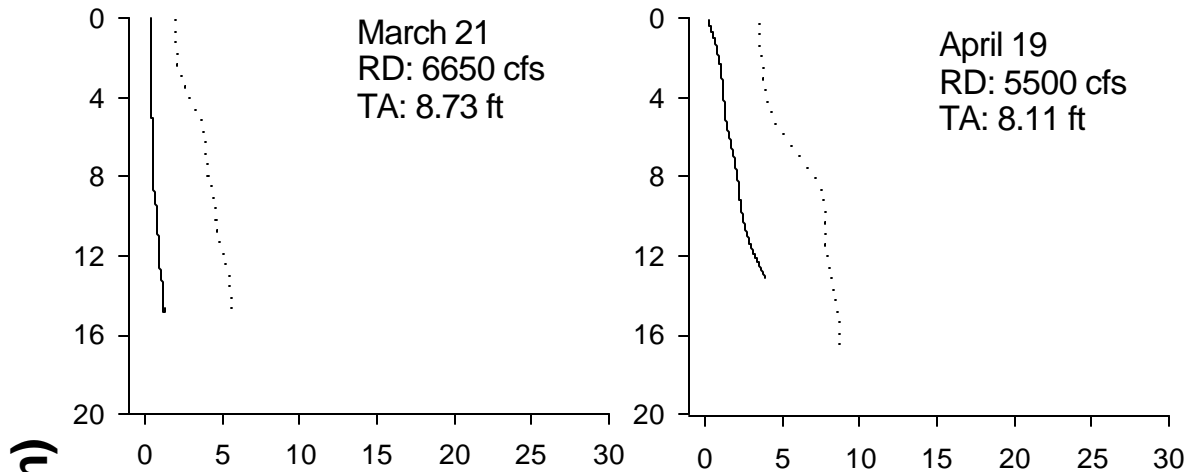


## SALINITY (ppt)

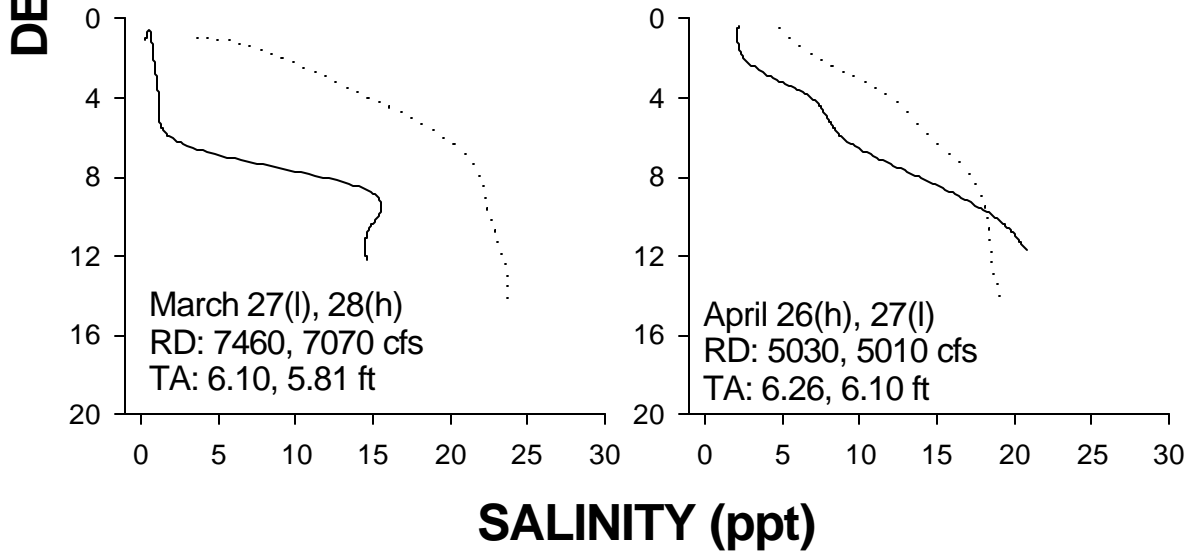
**Figure 5c.** Salinity profiles at egg sampling stations, Savannah River Estuary, March and April, 2000. Salinity profiles at station SR12 during high-slack (dotted line) and low-slack (solid line) tides. RD=river discharge measured at Clio, GA. TA=tidal amplitude (mean from stations at I-95 bridge, Broad Street, and Lucknow Canal). Discharge and tidal amplitude data courtesy of USGS.

# SR 19

## SPRING TIDE



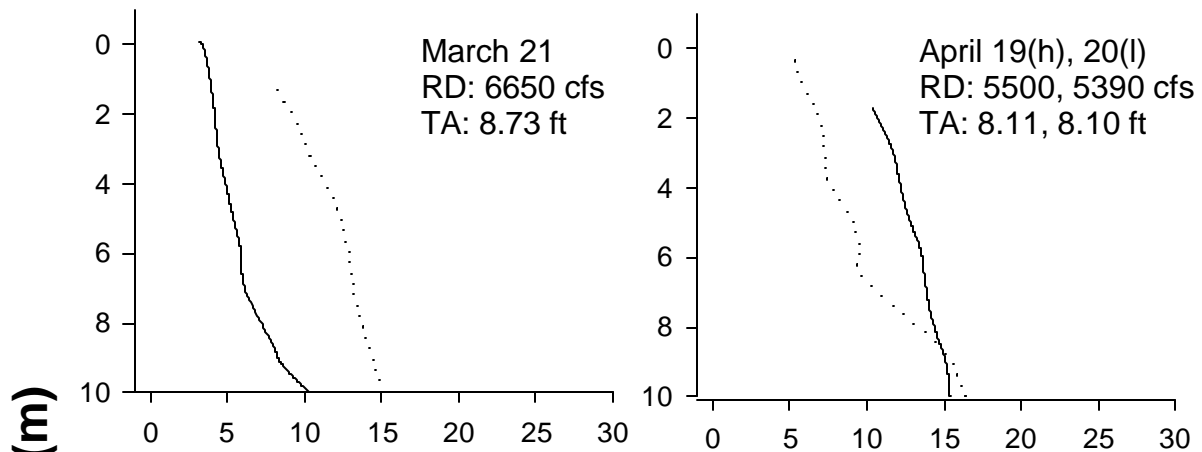
## NEAP TIDE



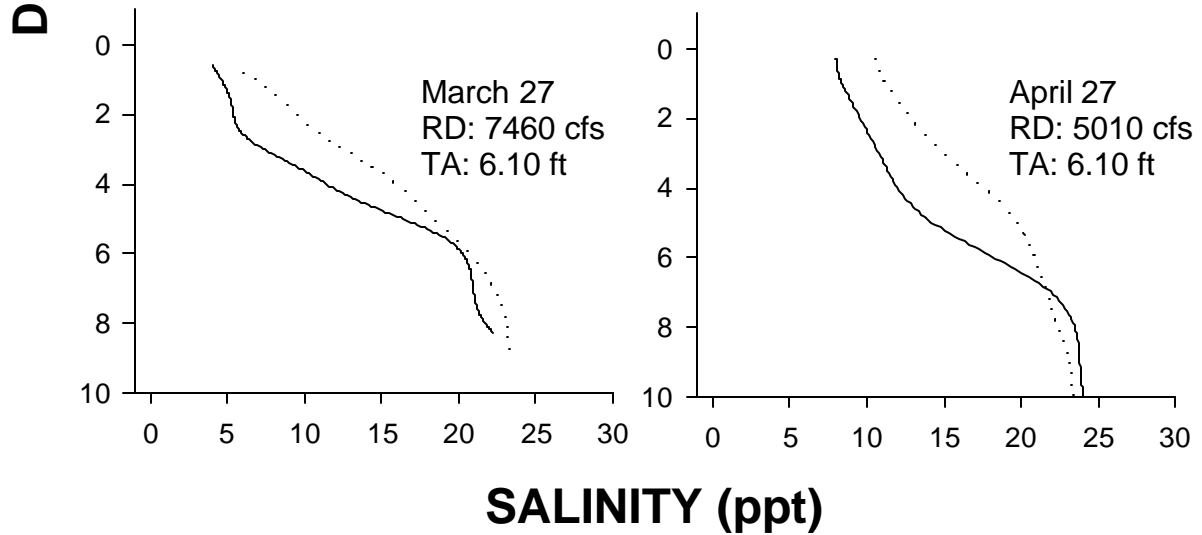
**Figure 5d.** Salinity profiles at egg sampling stations, Savannah River Estuary, March and April, 2000. Salinity profiles at station SR19 during high-slab (dotted line) and low-slab (solid line) tides. RD=river discharge measured at Clyo, GA. TA=tidal amplitude (mean from stations at I-95 bridge, Broad Street, and Lucknow Canal). Discharge and tidal amplitude data courtesy of USGS.

# BR 2

## SPRING TIDE



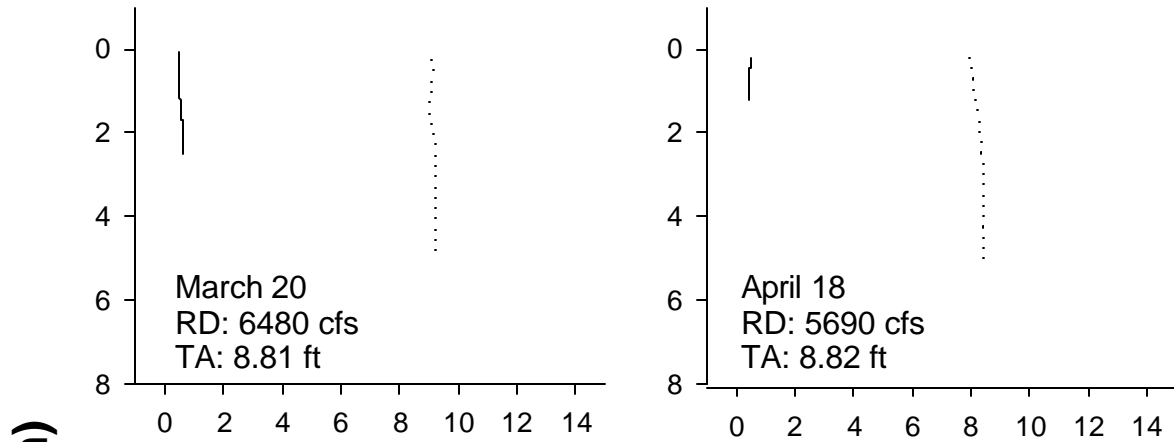
## NEAP TIDE



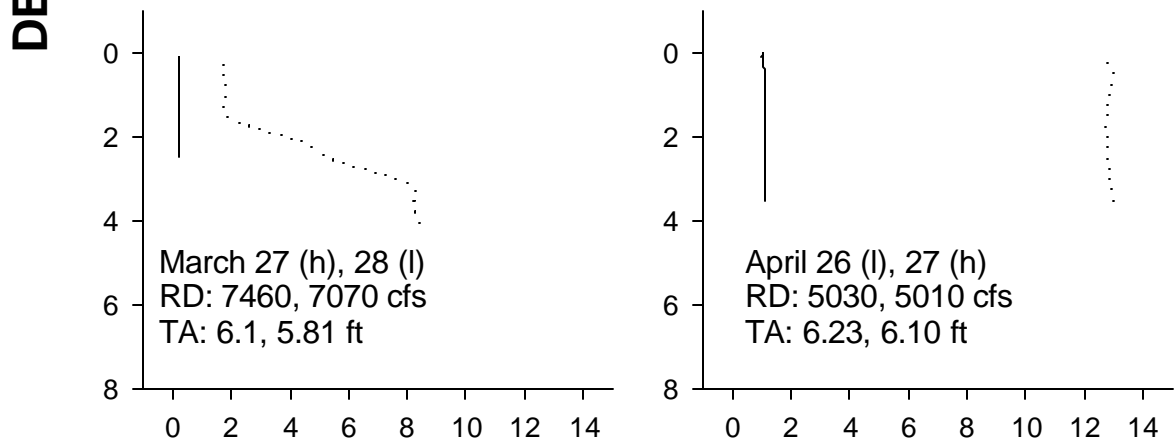
**Figure 5e.** Salinity profiles at egg sampling stations, Savannah River Estuary, March and April, 2000. Salinity profiles at station BR2 during high-slab (dotted line) and low-slab (solid line) tides. RD=river discharge measured at Clyo, GA. TA=tidal amplitude (mean from stations at I-95 bridge, Broad Street, and Lucknow Canal). Discharge and tidal amplitude data courtesy of USGS.

# BR 6

## SPRING TIDE



## NEAP TIDE



## SALINITY (ppt)

**Figure 5f.** Salinity profiles at egg sampling stations, Savannah River Estuary, March and April, 2000. Salinity profiles at station BR6 during high-slab (dotted line) and low-slab (solid line) tides. RD=river discharge measured at Clyo, GA. TA=tidal amplitude (mean from stations at I-95 bridge, Broad Street, and Lucknow Canal). Discharge and tidal amplitude data courtesy of USGS.

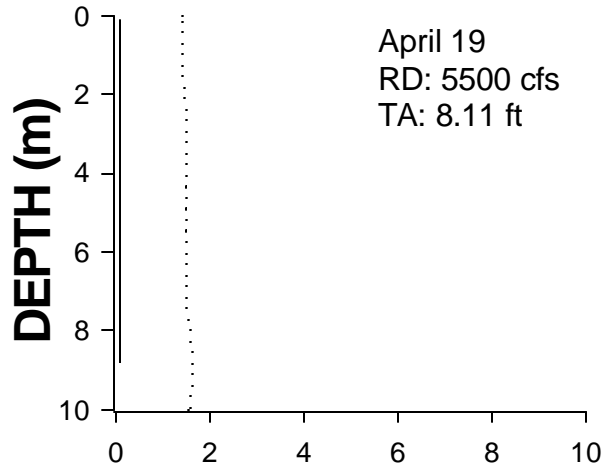
# SR 24

## SPRING TIDE

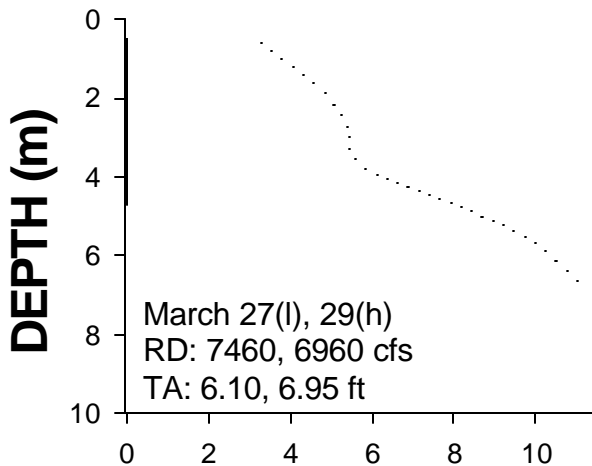
March 21  
RD: 6650 cfs  
TA: 8.73 ft

April 19  
RD: 5500 cfs  
TA: 8.11 ft

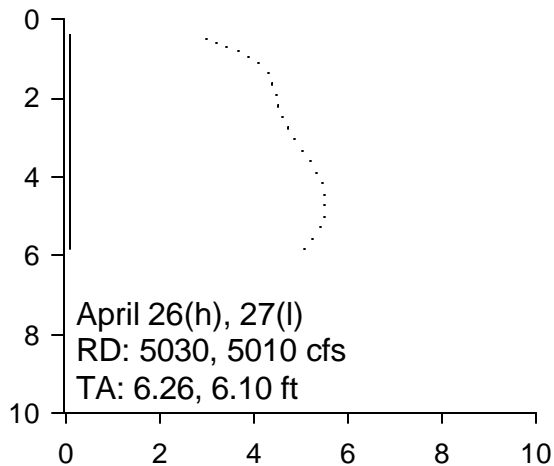
Salinity was below 0.5 ppt at all depths during both high- and low-slack tidal periods of the March spring-tide



## NEAP TIDE



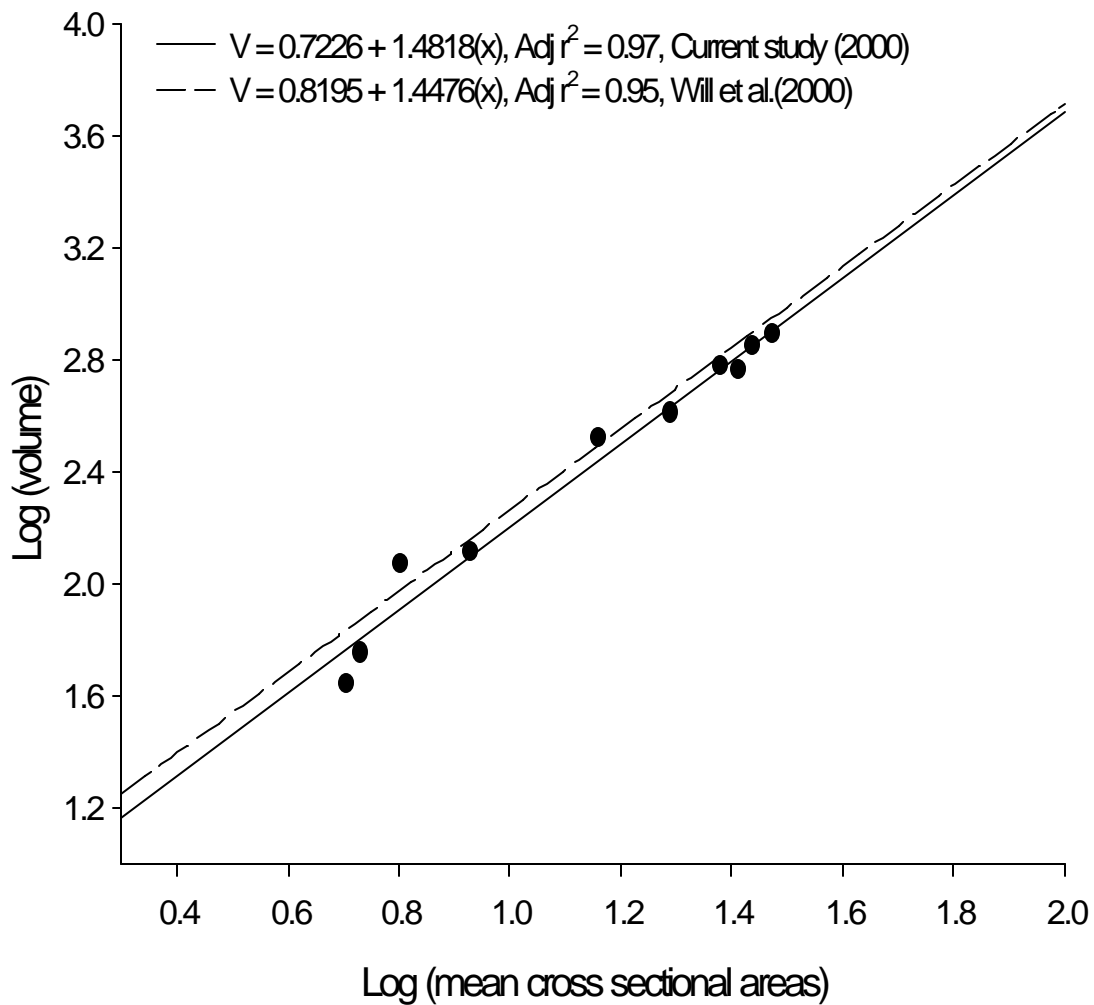
March 27(l), 29(h)  
RD: 7460, 6960 cfs  
TA: 6.10, 6.95 ft



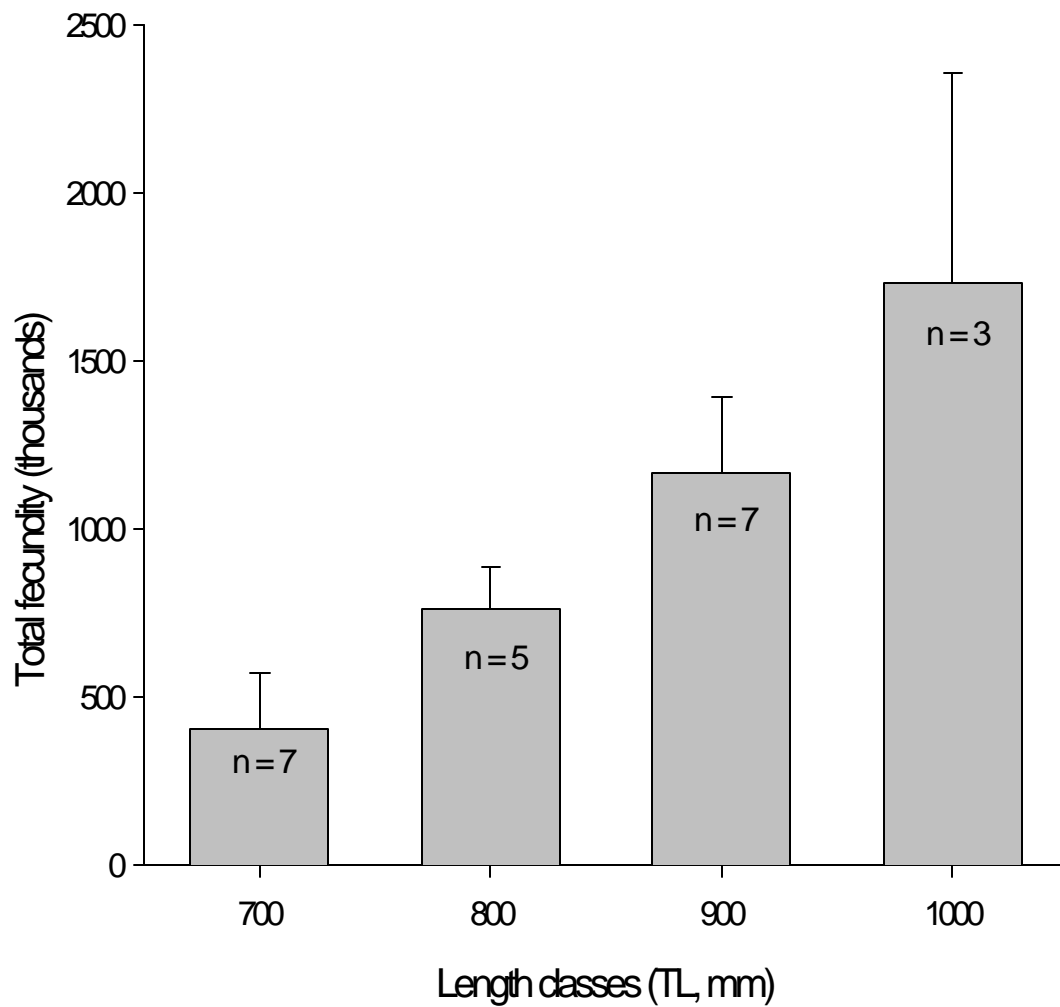
April 26(h), 27(l)  
RD: 5030, 5010 cfs  
TA: 6.26, 6.10 ft

## SALINITY (ppt)

**Figure 5g.** Salinity profiles at egg sampling stations, Savannah River Estuary, March and April, 2000. Salinity profiles at station SR24 during high-slack (dotted line) and low-slack (solid line) tides. RD=river discharge measured at Clyo, GA. TA=tidal amplitude (mean from stations at I-95 bridge, Broad Street, and Lucknow Canal). Discharge and tidal amplitude data courtesy of USGS.

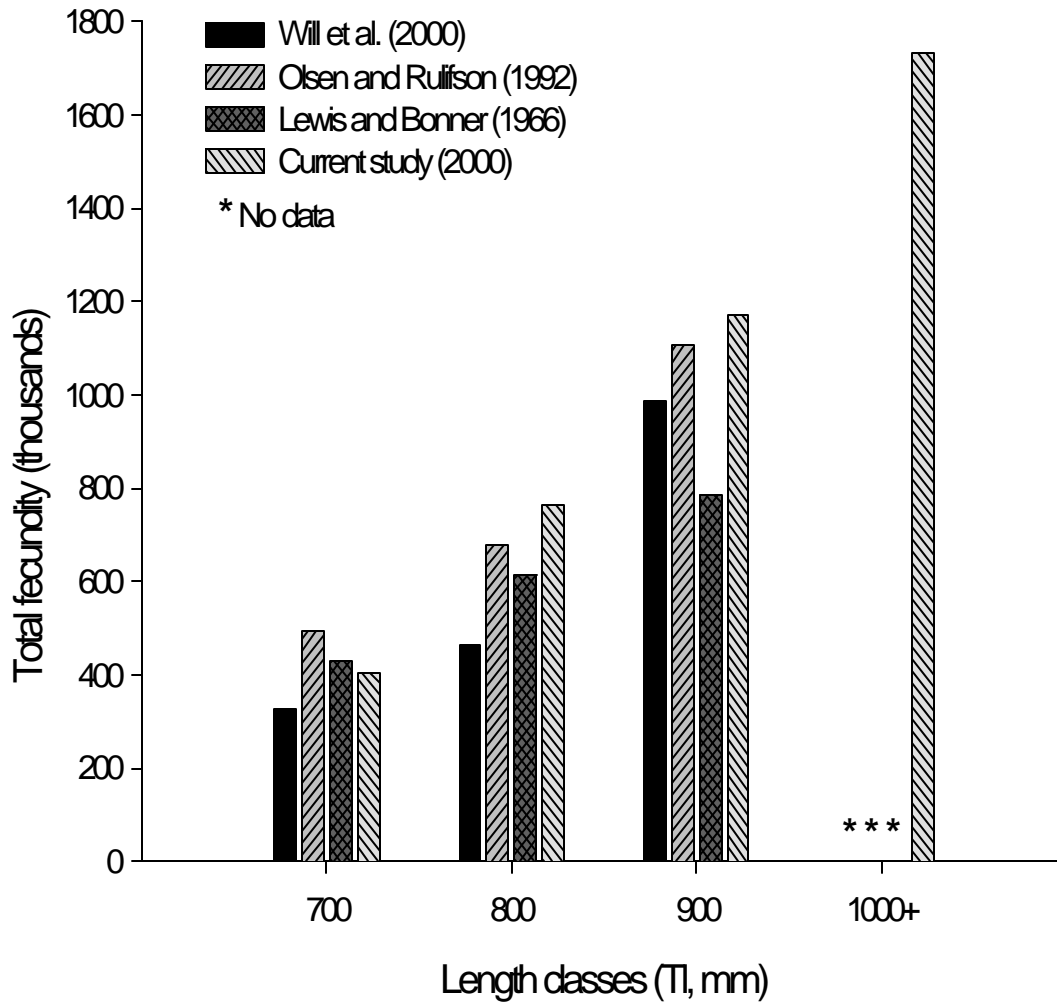


**Figure 6.** Relationship between mean cross-sectional ovary area and ovary volumes of striped bass collected from the Savannah River Estuary, March-April, 1999 and 2000. Black solid and dotted line represents the least square regression line (least square equations are listed in top left corner including the adjusted  $r^2$  value).

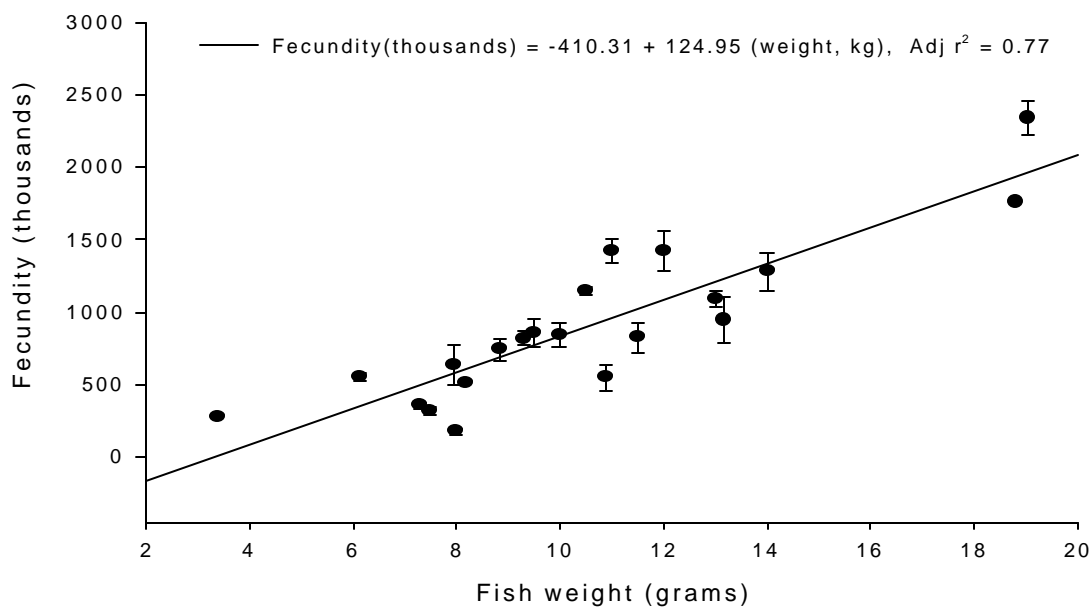
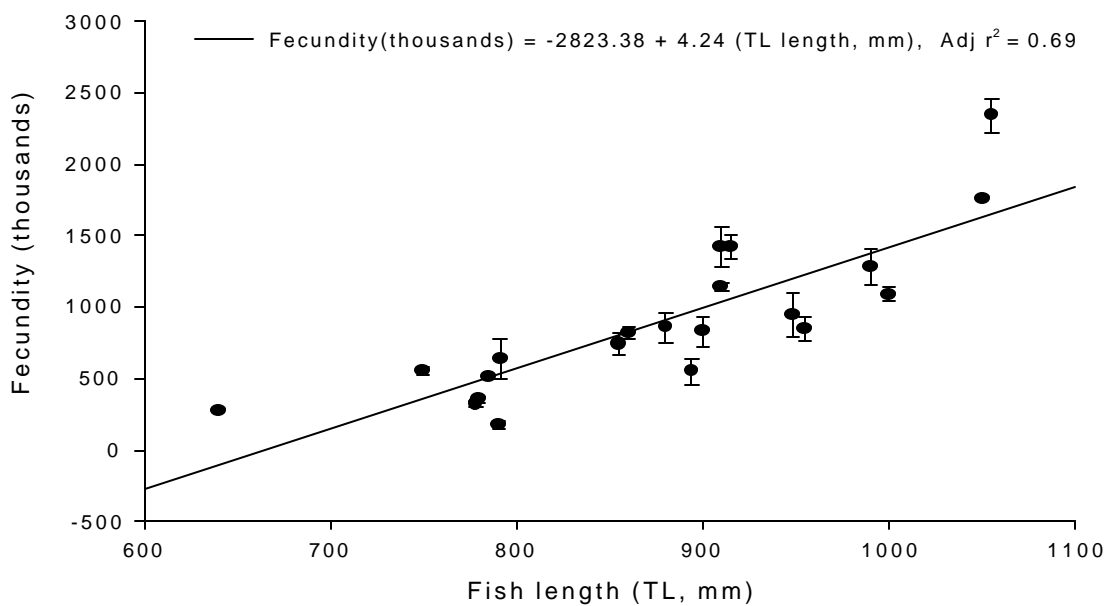


**Figure 7.** Estimates of total fecundity by length classes (700-799 mm, 800-899 mm, 900-999mm, and >1000 mm, TL) for striped bass collected from the Savannah River Estuary, March-April 2000. The error lines represent 95% confidence intervals and n=the number of fecundity estimates within each size class.

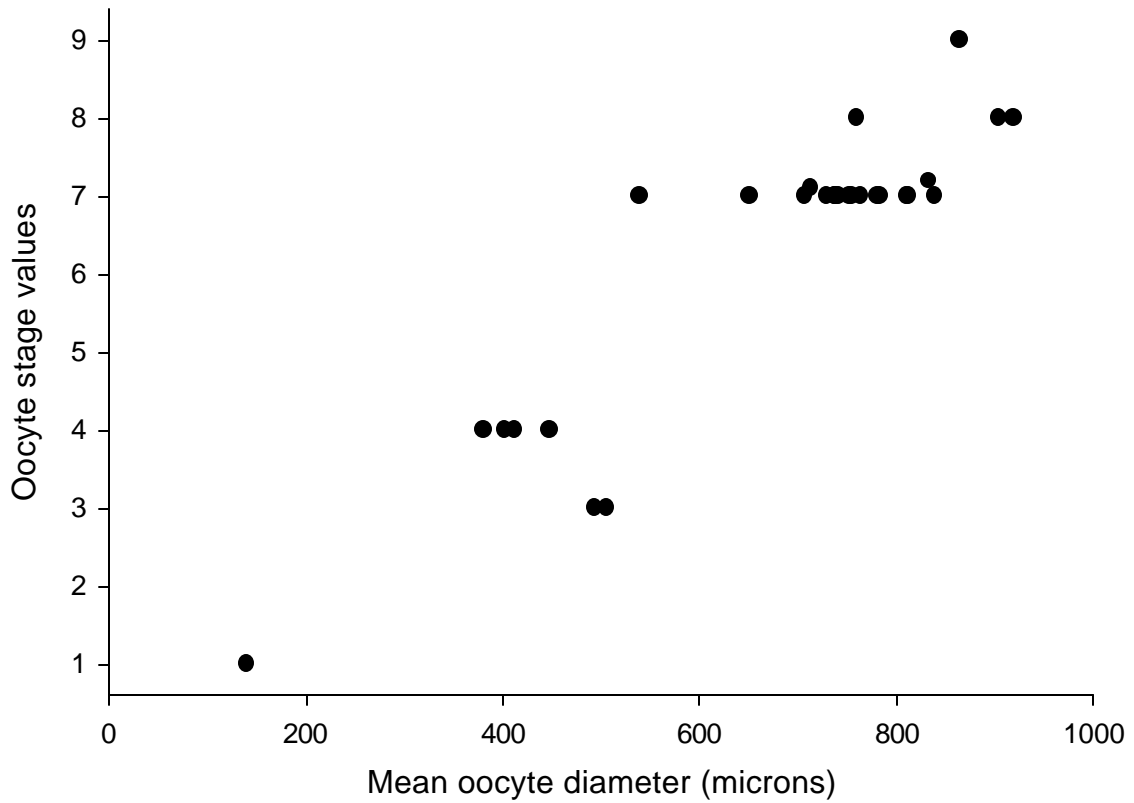




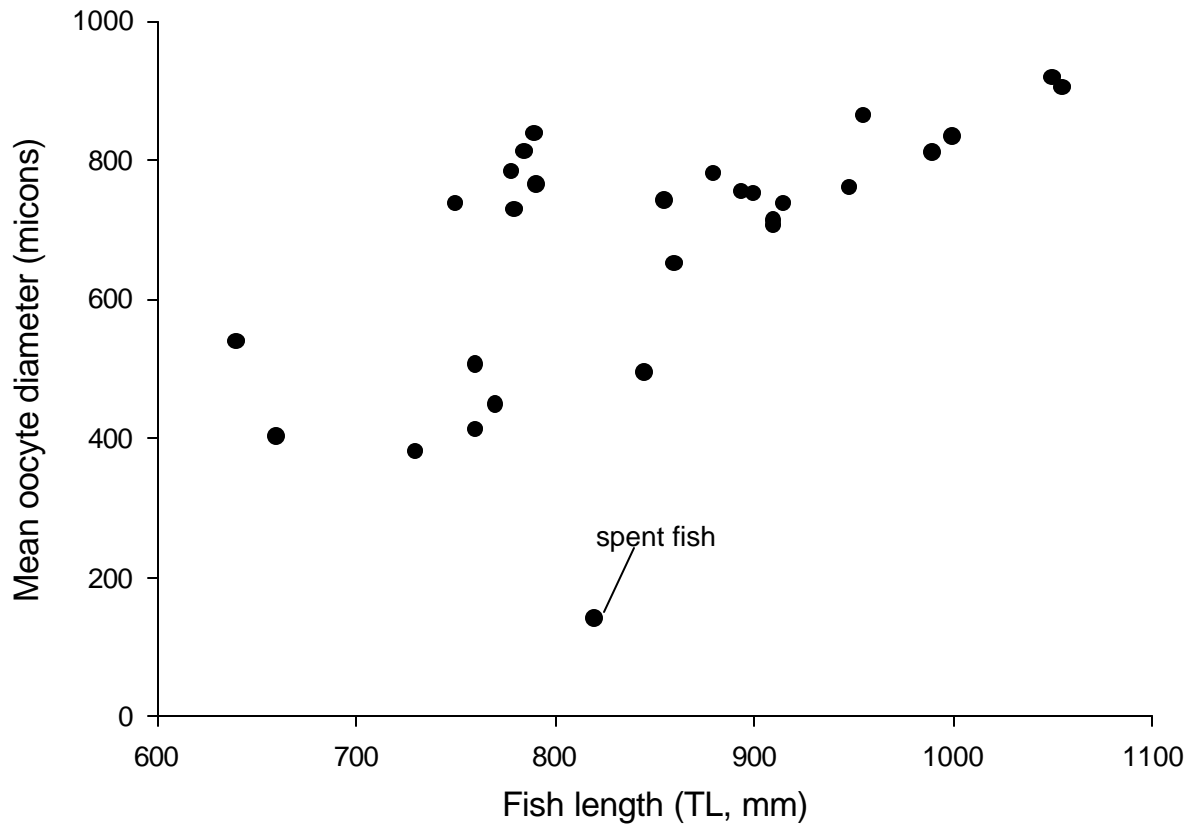
**Figure 8.** Fecundity estimates for total length classes (n=4) of striped bass collected in March-April 2000 from the Savannah River (current study); in March-April 1999 (Will et al. 2000); in April-May 1958, 1960, and 1963 from the Roanoke River, NC (Lewis and Bonner 1966); and in March-May 1989 and April-May 1990 from western Albemarle Sound and the Roanoke River, NC (Olsen and Rulifson 1992).



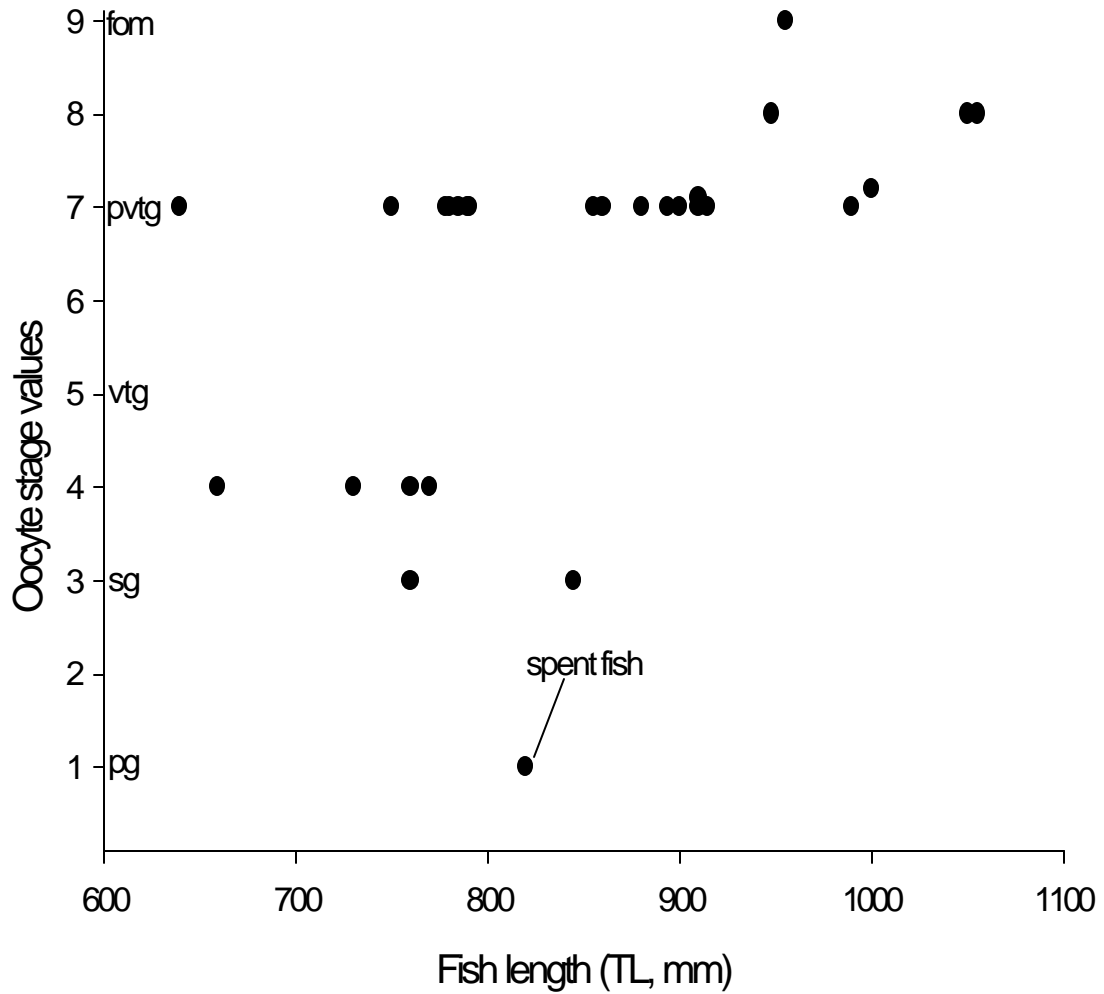
**Figure 9.** Relationship between fish length and fecundity (top figure) and fish weight and fecundity (bottom figure) for striped bass collected from the Savannah River Estuary, March-April, 2000. Solid black lines represent the least square regression line (least square equations are listed in top left corner including the adjusted  $r^2$  value) and the error bars indicate the standard error around the mean for each fecundity estimates where three 1-ml ovarian tissue samples were collected.



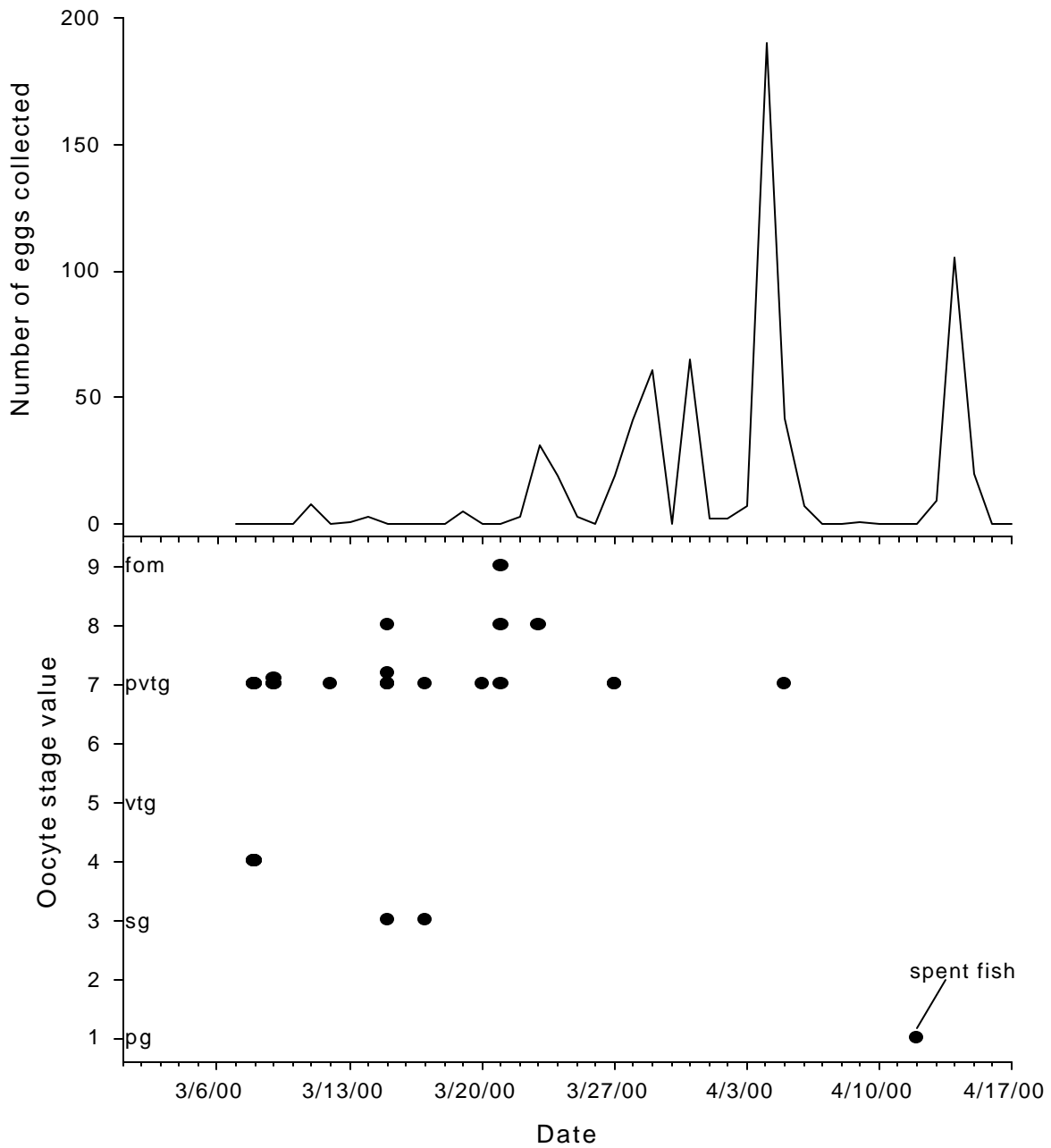
**Figure 10.** Relationship between mean maturational stage values and mean oocyte diameter for striped bass collected from the Savannah River Estuary, March-April, 2000, and used for ultrasonic imaging.



**Figure 11.** Relationship between mean oocyte diameter ( $\mu\text{m}$ ) and fish length (mm) for striped bass collected from the Savannah River Estuary, March-April, 2000.



**Figure 12.** Mean maturational stage values (1-9 stage values, stage value 1 = primary growth through stage value 9 = final oocyte maturity) of the 20 most-advanced oocytes identified in each striped bass collected from the Savannah River Estuary, March-April, 2000. Striped bass are reported by their measured total lengths (mm), pg = primary growth, sg = secondary growth, vtg = vitellogenic, pvtg = post-vitellogenic, fom = final oocyte maturity.



**Figure 13.** Striped bass egg densities from the Savannah River Estuary when striped bass were collected for maturational studies, March-April, 2000 (top figure), and corresponding temporal data for maturational stages of striped bass oocytes (bottom figure). Maturational stage values = 1-9, stage value 1= primary growth through stage value 9 = final oocyte maturity, pg = primary growth, sg = secondary growth, vtg = vitellogenic, pvtg = post-vitellogenic, fom=final oocyte maturity.