

**BALD HEAD ISLAND SETTLEMENT MONITORING SURVEYS**  
**REPORT 10**  
**SEPTEMBER 2006**

**Introduction**

The 10th set of monitoring surveys for the Settlement Agreement between the Village of Bald Head Island and the United States Army Corps of Engineers was taken in September 2006. The criteria to be used in examining the surveys is to be a continuous passage through Smith Island Channel, Baldhead Shoal Channel Reach 1 and Baldhead Shoal Channel Reach 2 with a minimum bottom width of 500 feet at a depth of -42 feet mean lower low water (mllw).

**Data**

The 9th set of monitoring surveys taken in July 2006 is displayed in Figure 1 and is labeled July 2006 Surveys. Figure 2 is a plot of surveys taken in September 2006 and Figure 3 is a difference plot between the July and September surveys. Figure 4 is a difference plot between the January 2005 and September 2006 surveys

A plot for Smith Island Channel of the navigable widths at a depth of -42 feet mllw (navigable depth) is shown in Figures 5 and 6. MLLW is 2 inches lower than mlw at Bald Head Island. A plot of the minimum channel cross section at station 4+00 is shown in Figure 7. The baselines for the cross section plots are shown in Figure 1.

A plot for Baldhead Shoal Channel Reach 1 of the navigable widths at a depth of -42 feet mllw is contained in Figures 8 and 9. Plots of the minimum channel cross sections in the vicinity of the spit at stations 22+00 and 23+00 are shown in Figures 10 and 11.

A plot for Baldhead Shoal Channel Reach 2 of the navigable widths at a depth of -42 feet mllw is contained in Figures 12 and 13. Plots of the minimum channel cross sections at stations 45+00, 46+00, and 47+00 are shown in Figures 14, 15, and 16.

**Conclusion**

The minimum navigable width at a depth of -42 feet mllw is less than 500 feet at Stations 21+00, 22+00, 23+00 and 24+00 in Baldhead Shoal Channel Reach 1. Points are greater than 500 feet in the other 2 channels.

# JULY 2006 SURVEYS

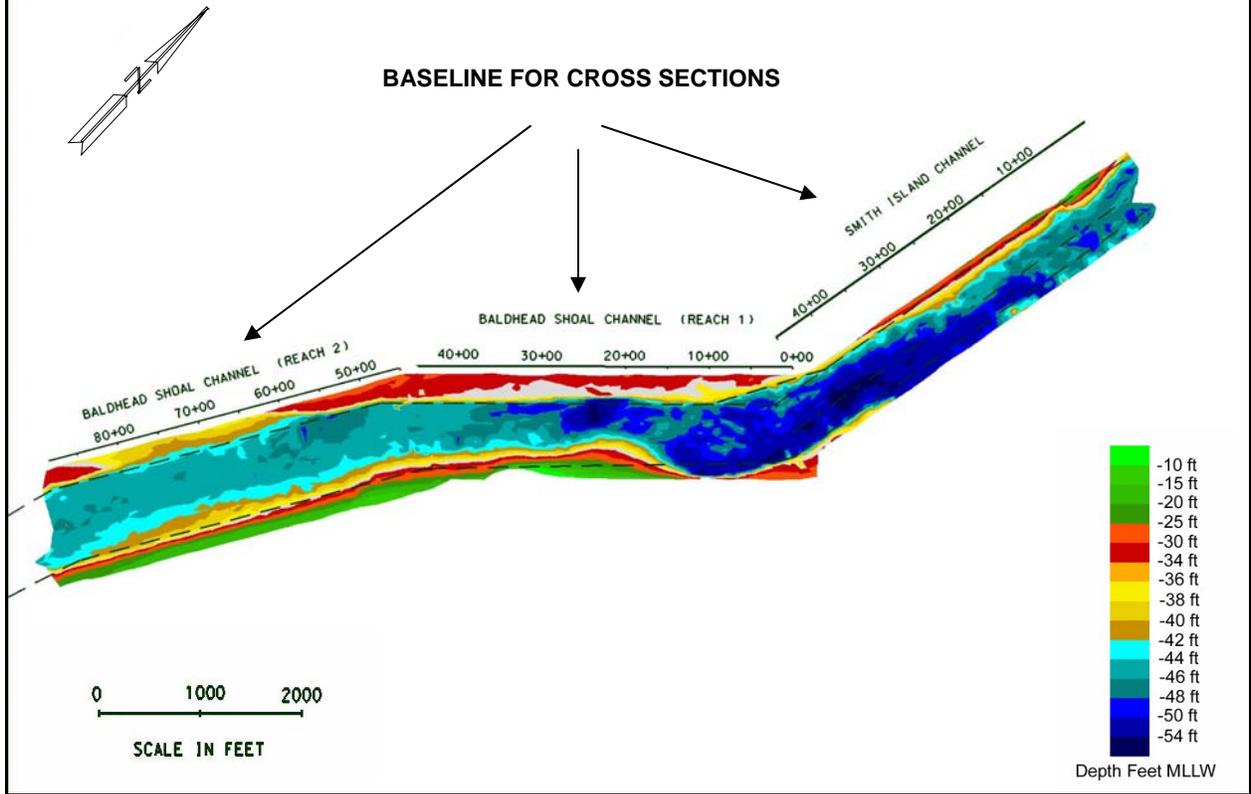


Figure 1 July 2006 Surveys

# SEPTEMBER 2006 SURVEYS

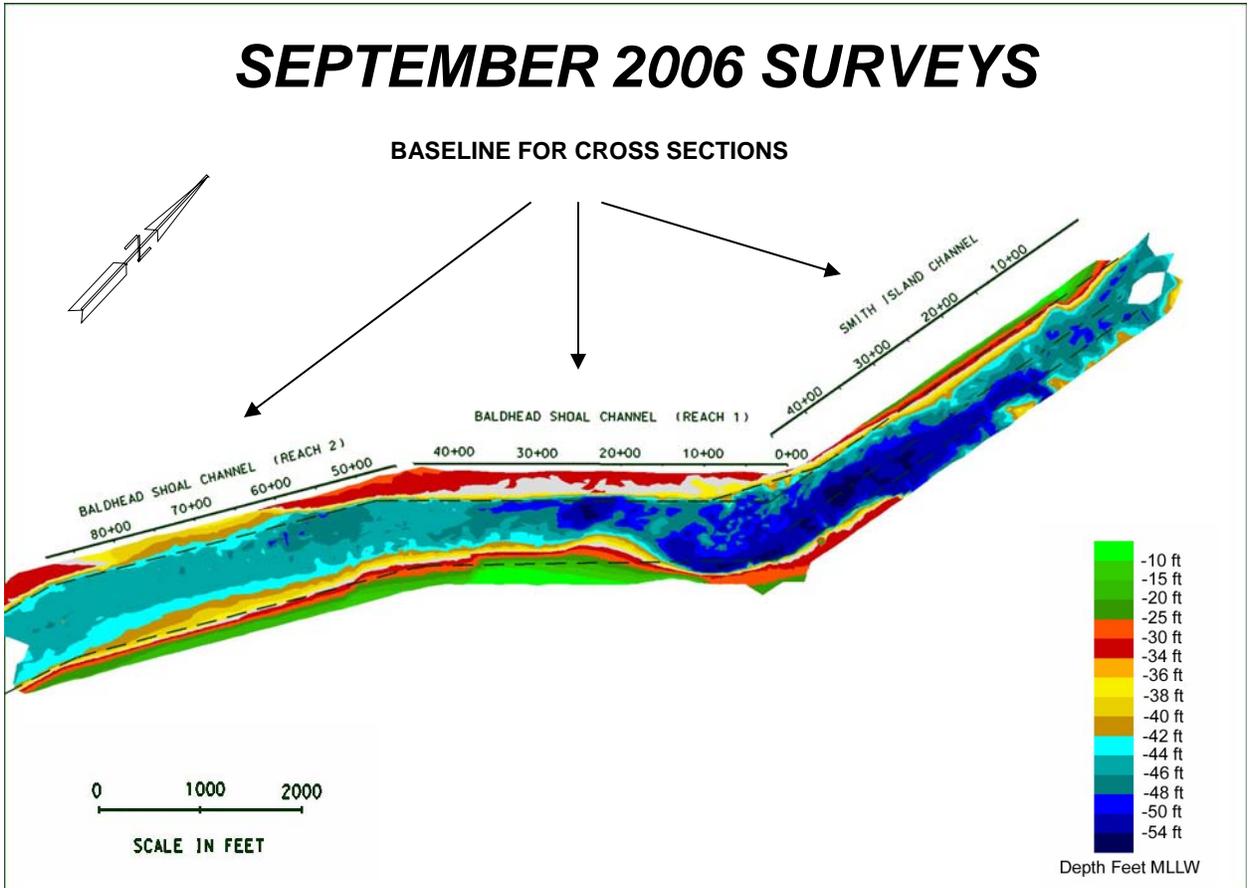


Figure 2 September 2006 Surveys

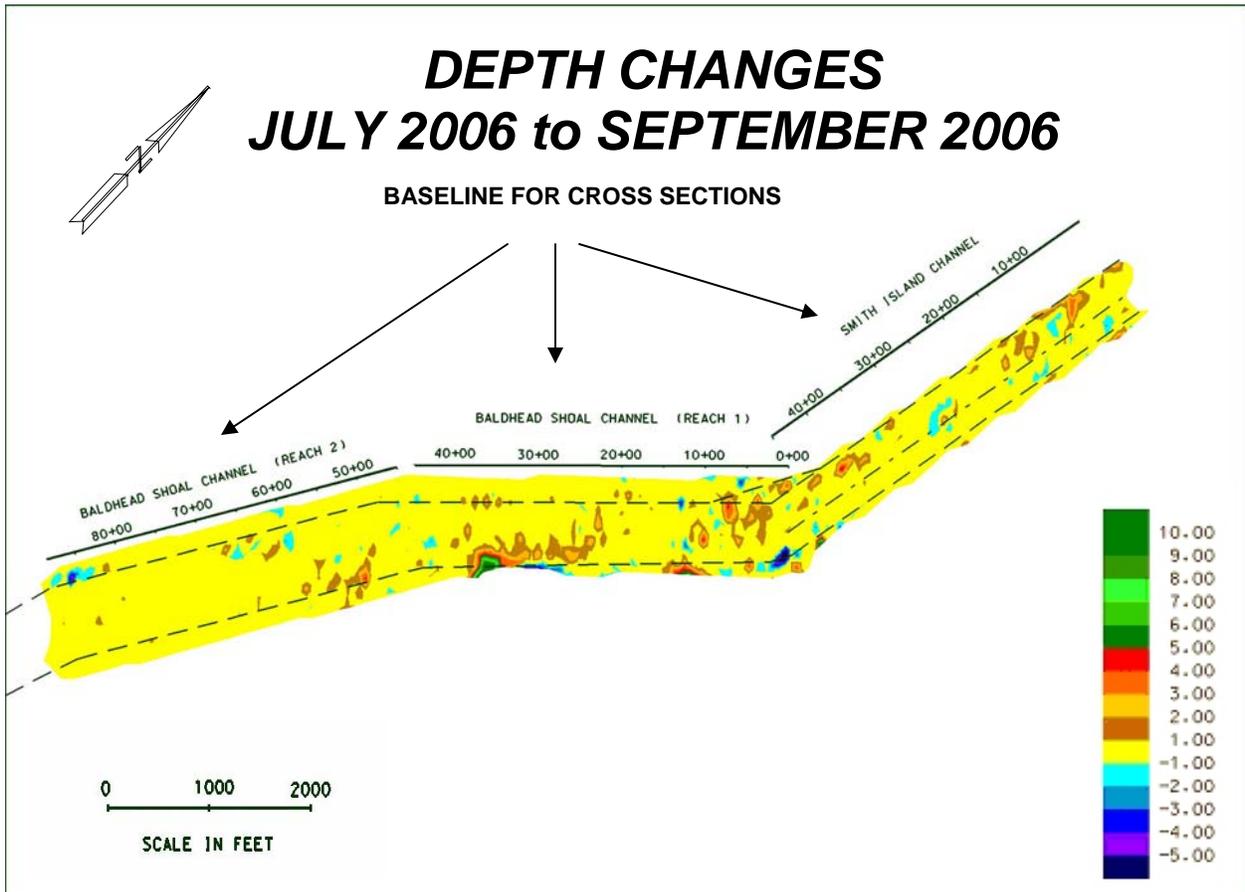


Figure 3 July 06 to September 06 Depth Changes

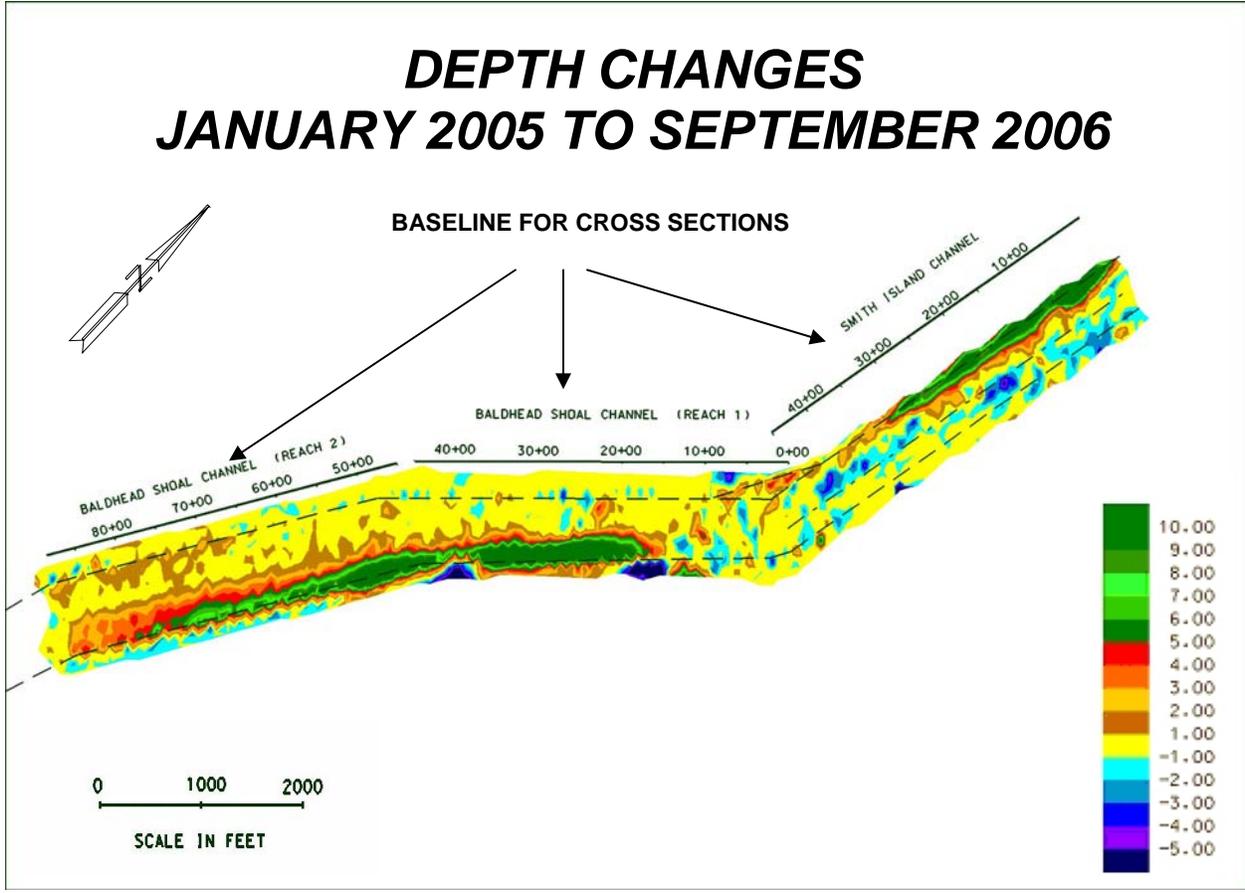
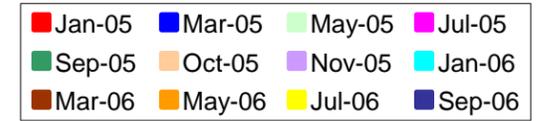


Figure 4 January 05 to September 06 Depth

## SMITH ISLAND CHANNEL NAVIGABLE WIDTHS



Navigable widths are measured at -42 ft mllw

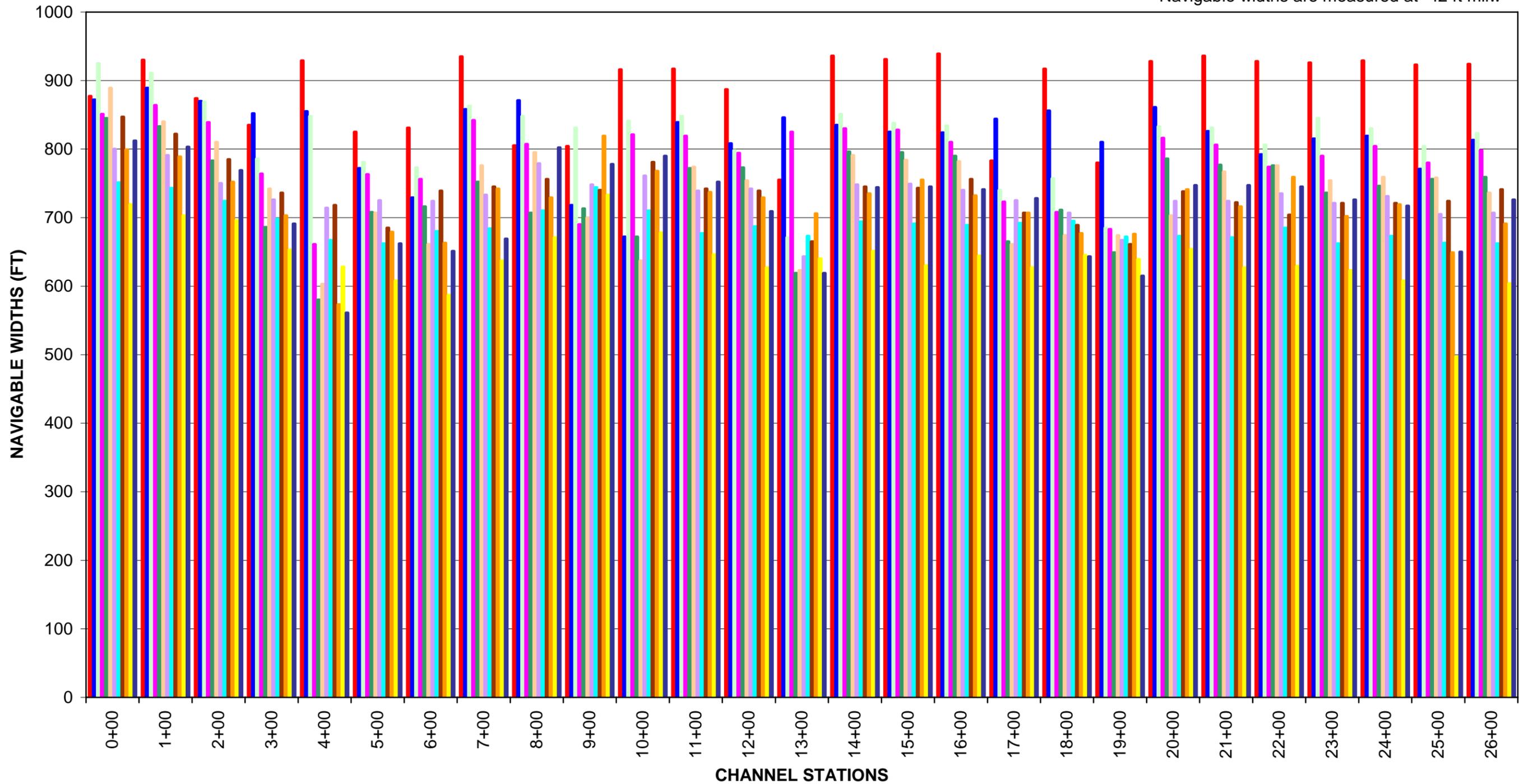
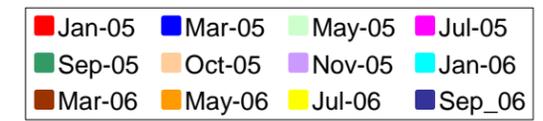


Figure 5 Smith Island Channel Navigable Widths – Stations 0+00 – 26+00

# SMITH ISLAND CHANNEL NAVIGABLE WIDTHS



Navigable widths are measured at -42 ft mllw

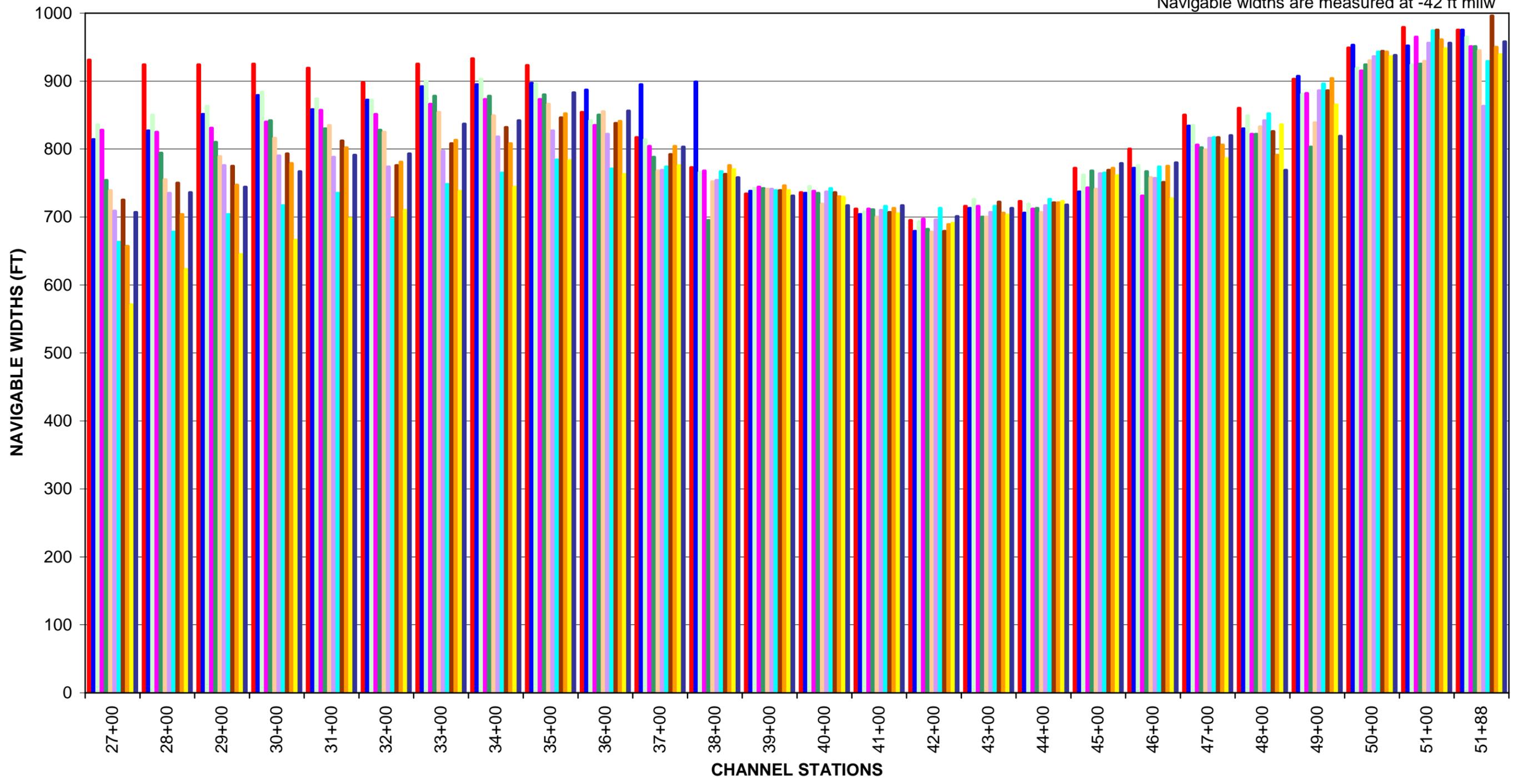
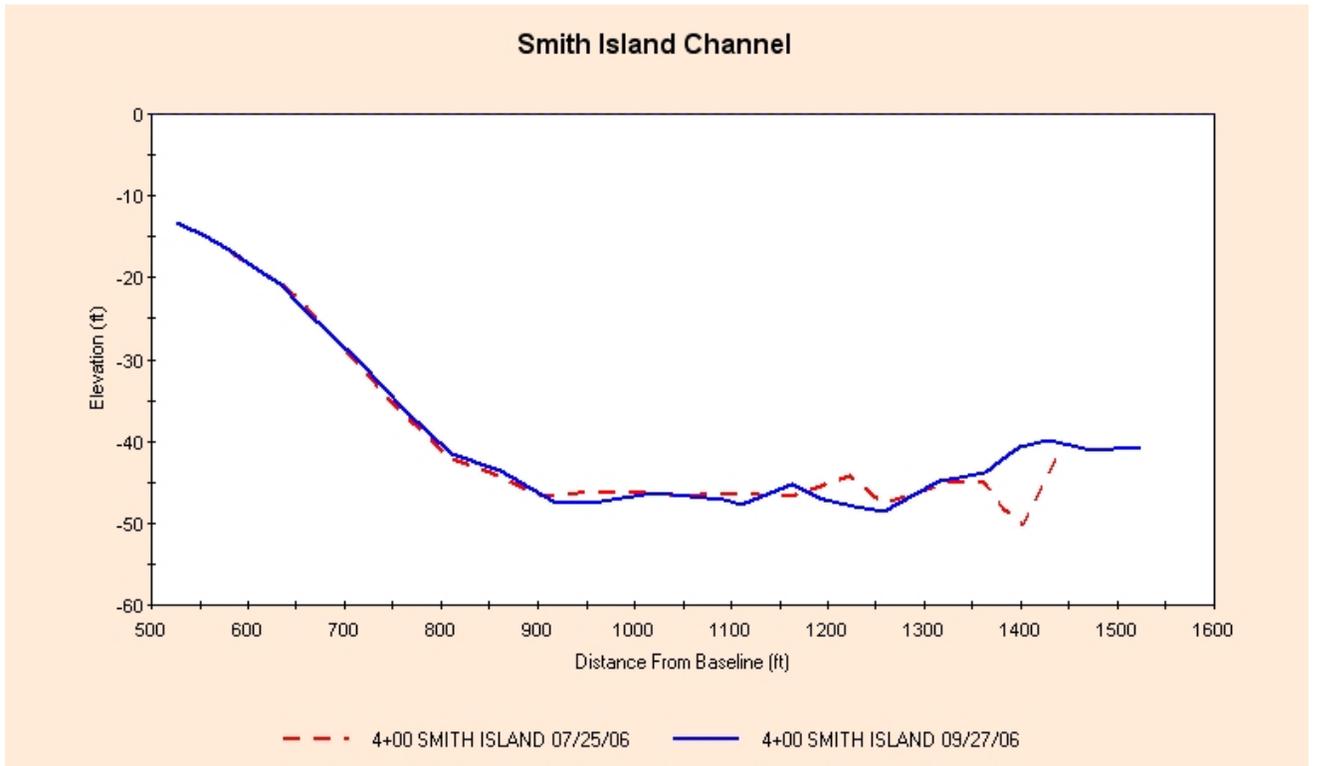


Figure 6 Smith Island Channel Navigable Widths – Stations 27+00 – 52+00



**Figure 7 Smith Island Station 4+00**

### BALDHEAD SHOAL CHANNEL (REACH 1) NAVIGABLE WIDTHS



Navigable widths are measured at -42 ft mllw

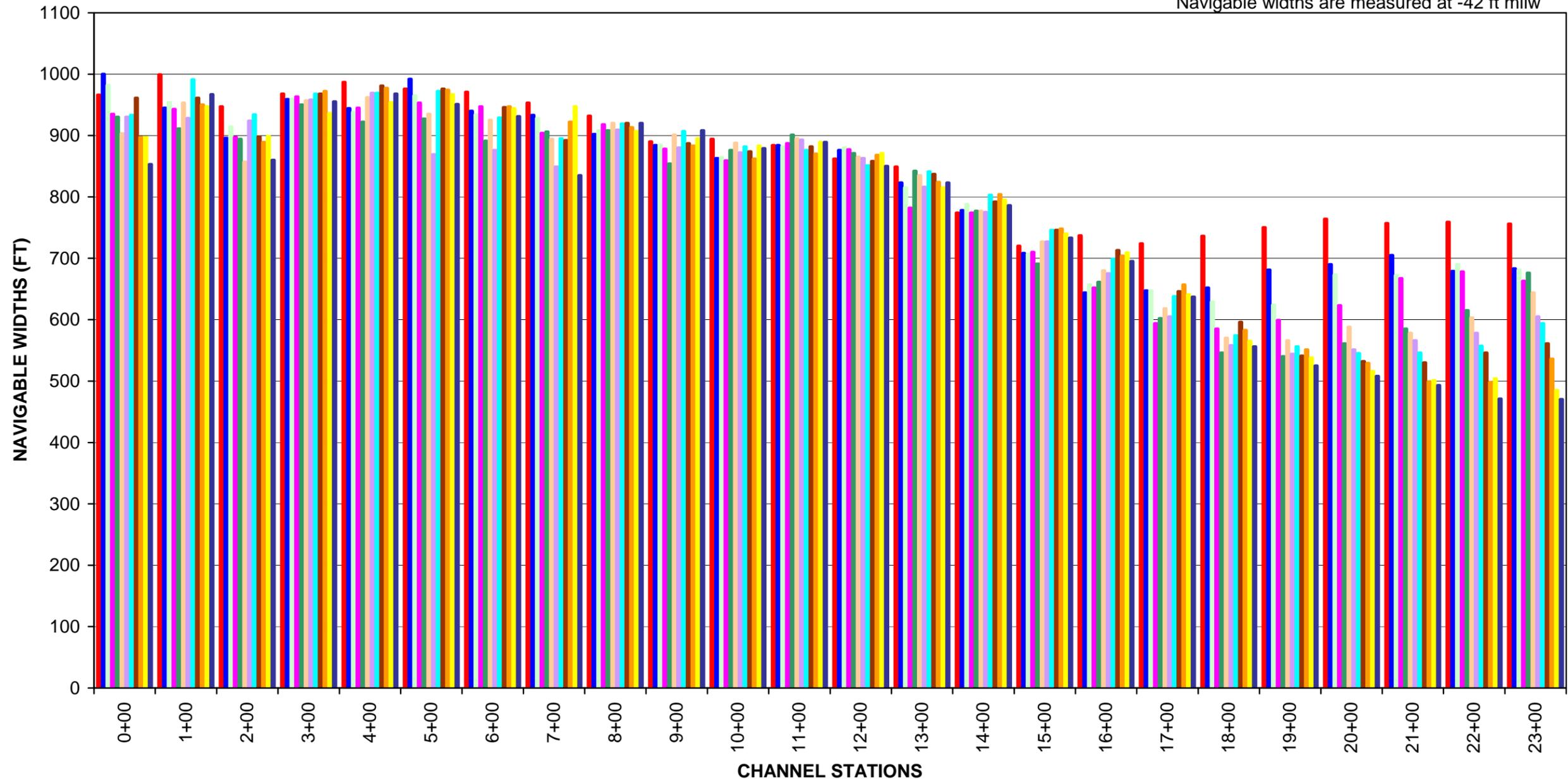
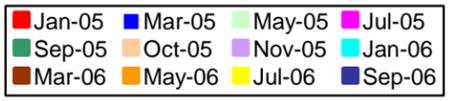


Figure 8 Baldhead Shoal Channel Reach 1 Navigable Widths – Stations 0+00 – 23+00

### BALDHEAD SHOAL CHANNEL (REACH 1) NAVIGABLE WIDTHS



Navigable widths are measured at -42 ft mllw

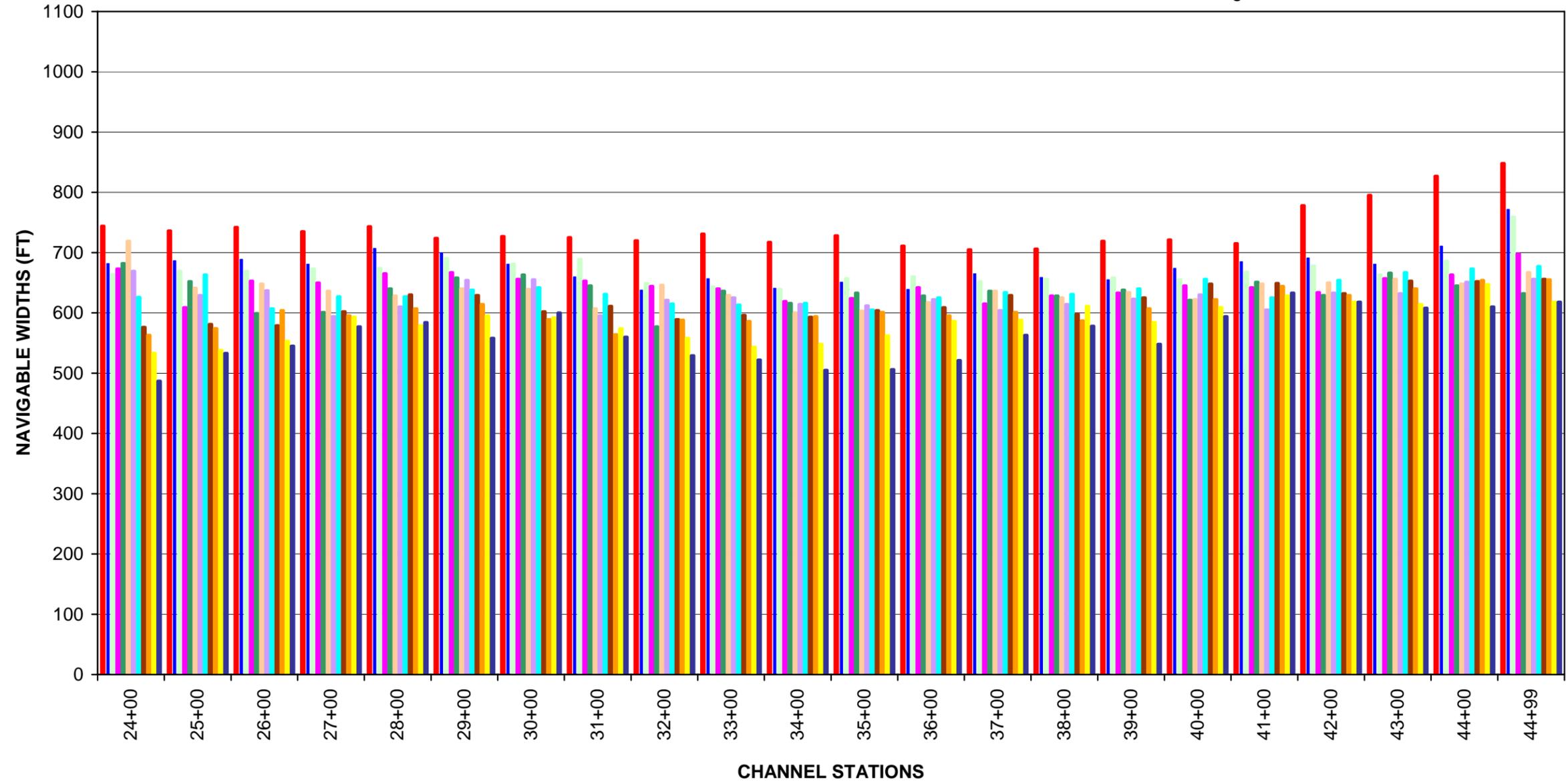
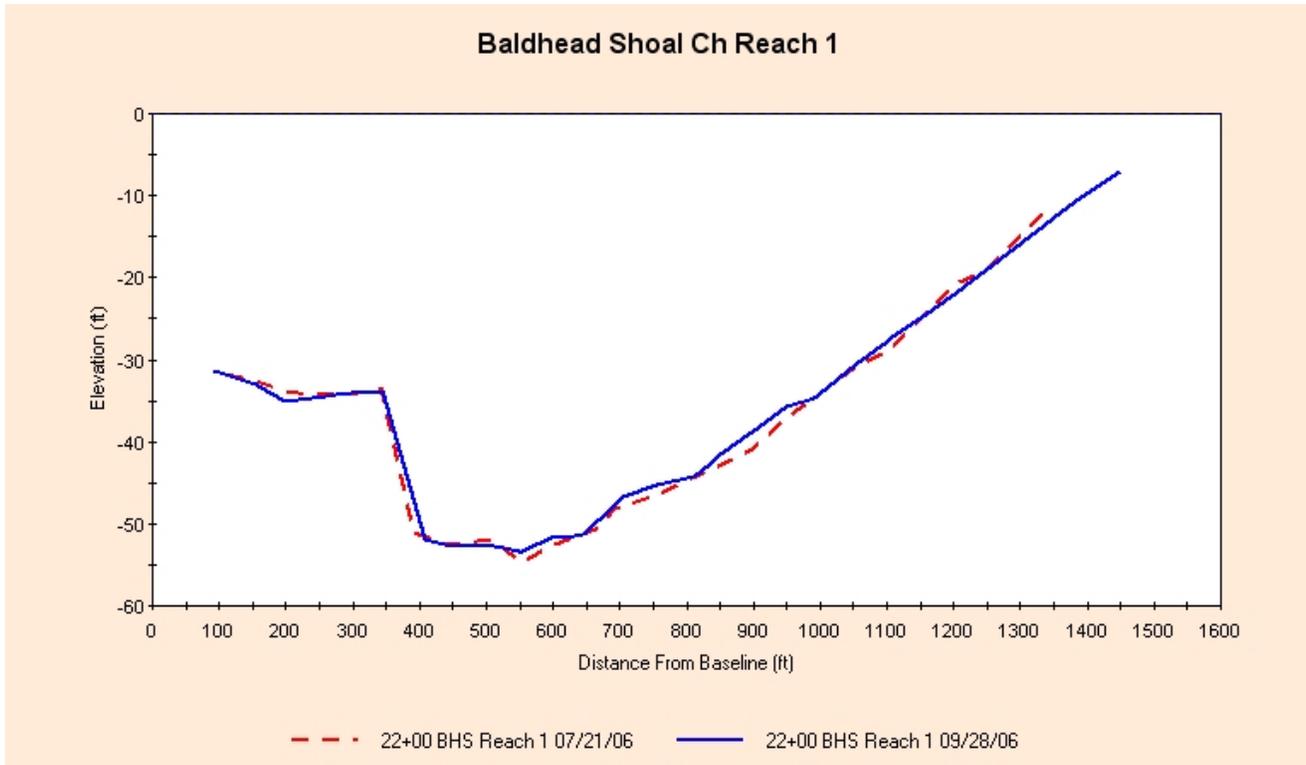
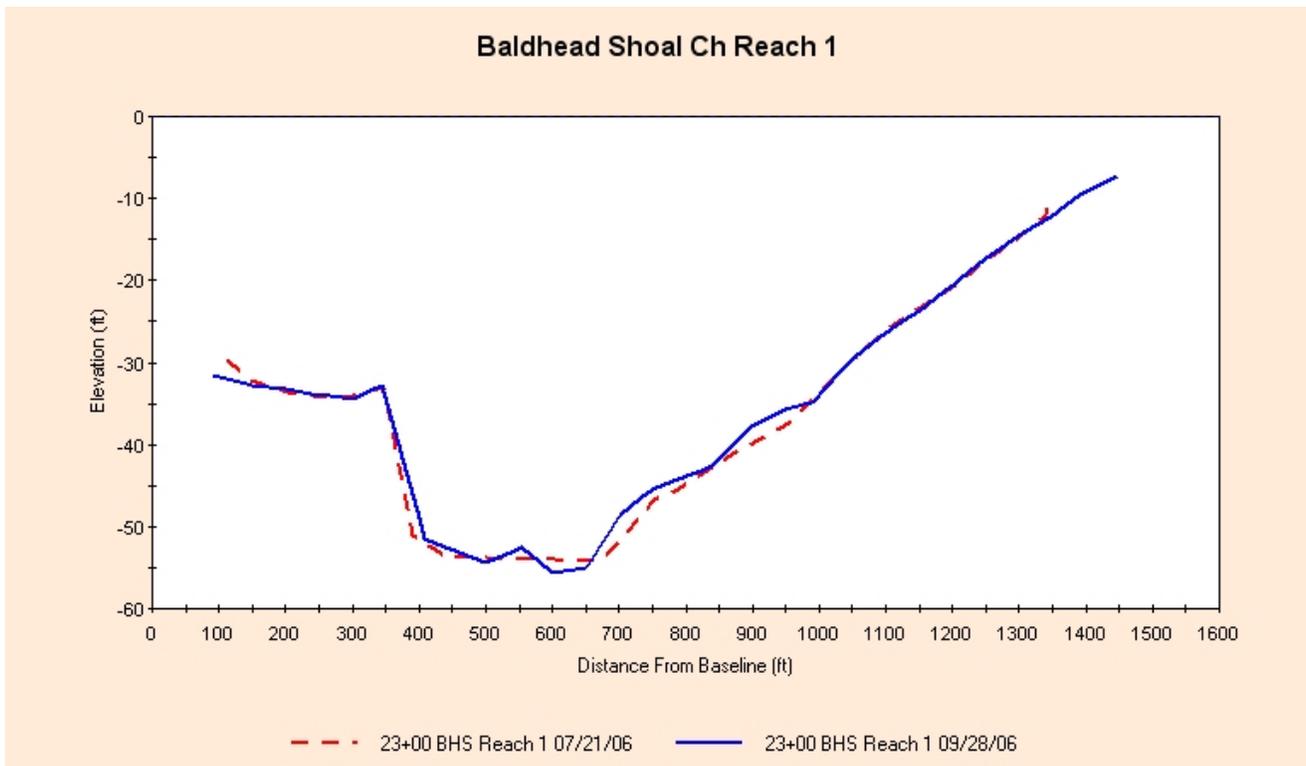


Figure 9 Baldhead Shoal Channel Reach 1 Navigable Widths – Stations 24+00 – 45+00

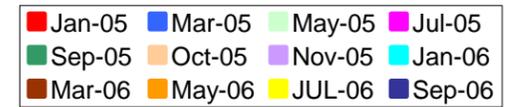


**Figure 10 Baldhead Shoal Station 22+00**



**Figure 11 Baldhead Shoal Station 23+00**

## BALDHEAD SHOAL CHANNEL (REACH 2) NAVIGABLE WIDTHS



Navigable widths are measured at -42 ft mllw

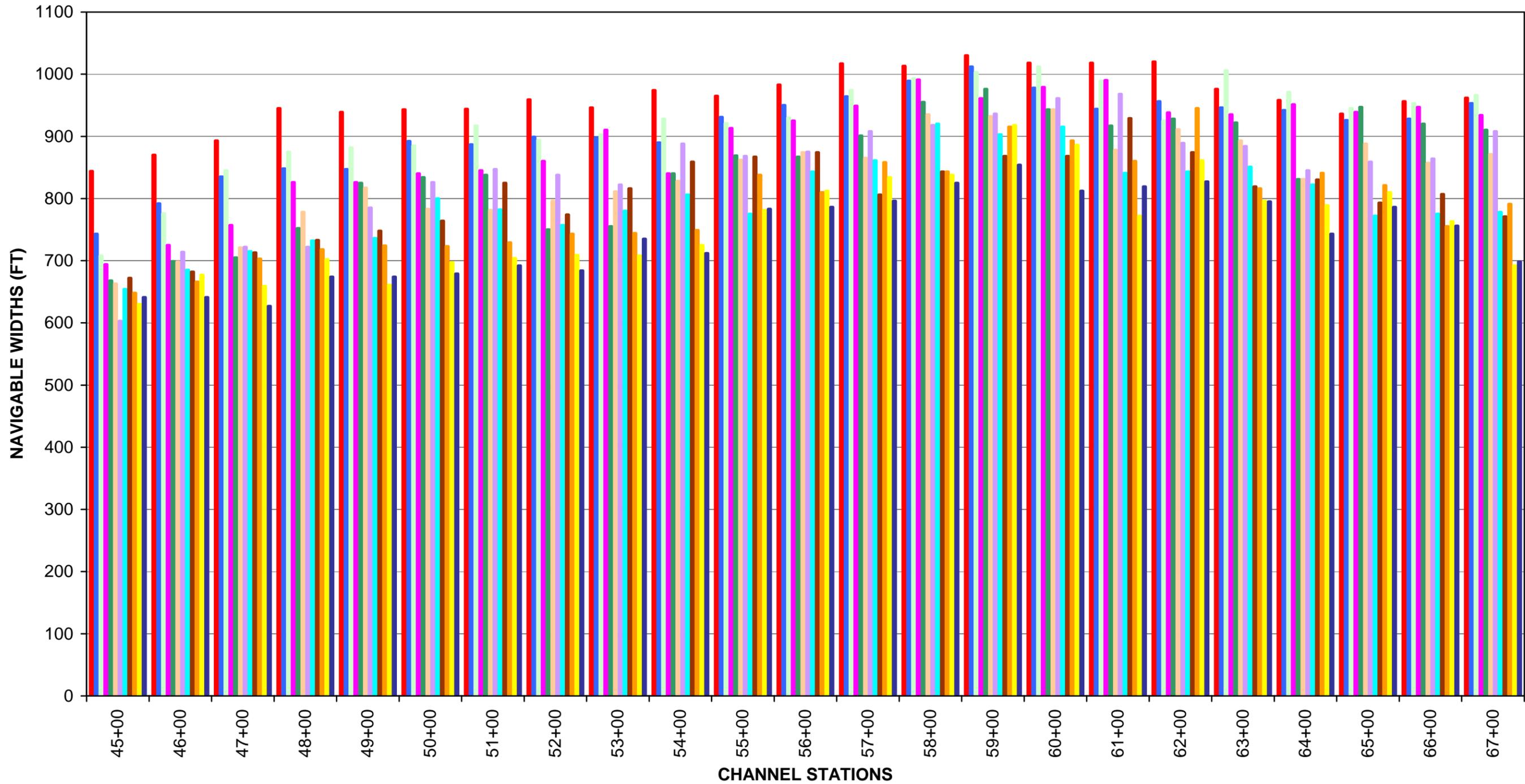


Figure 12 Baldhead Shoal Channel Reach 2 Navigable Widths – Stations 45+00 – 67+00

## BALDHEAD SHOAL CHANNEL (REACH 2) NAVIGABLE WIDTHS



Navigable widths are measured at -42 ft mllw

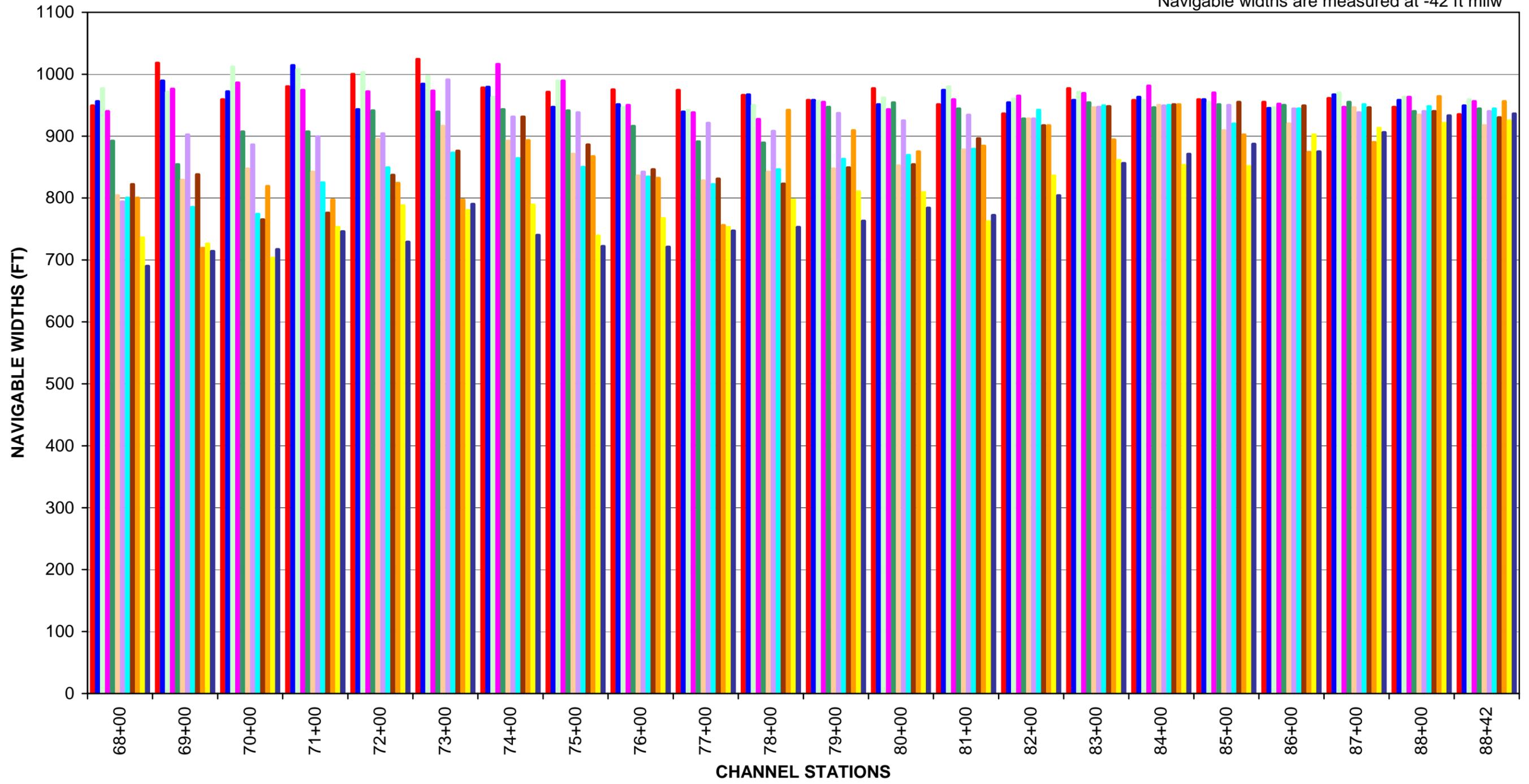
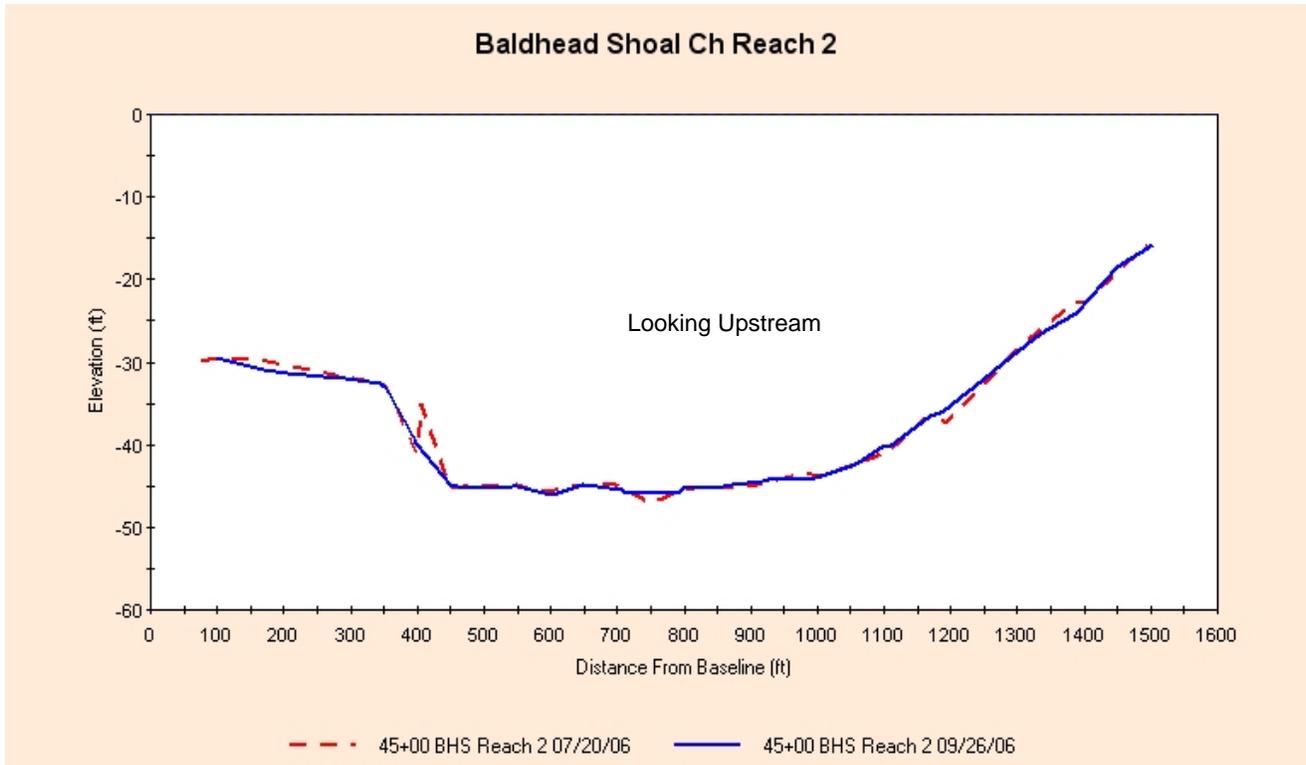
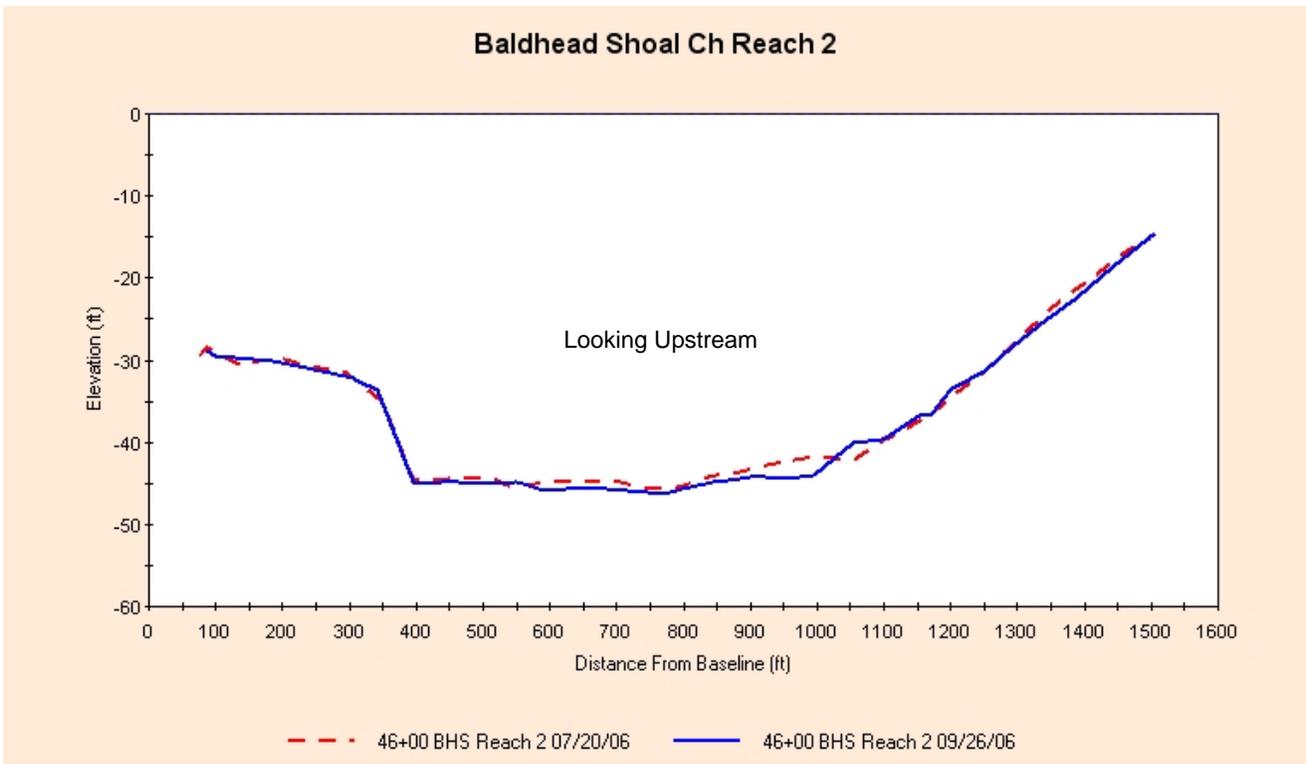


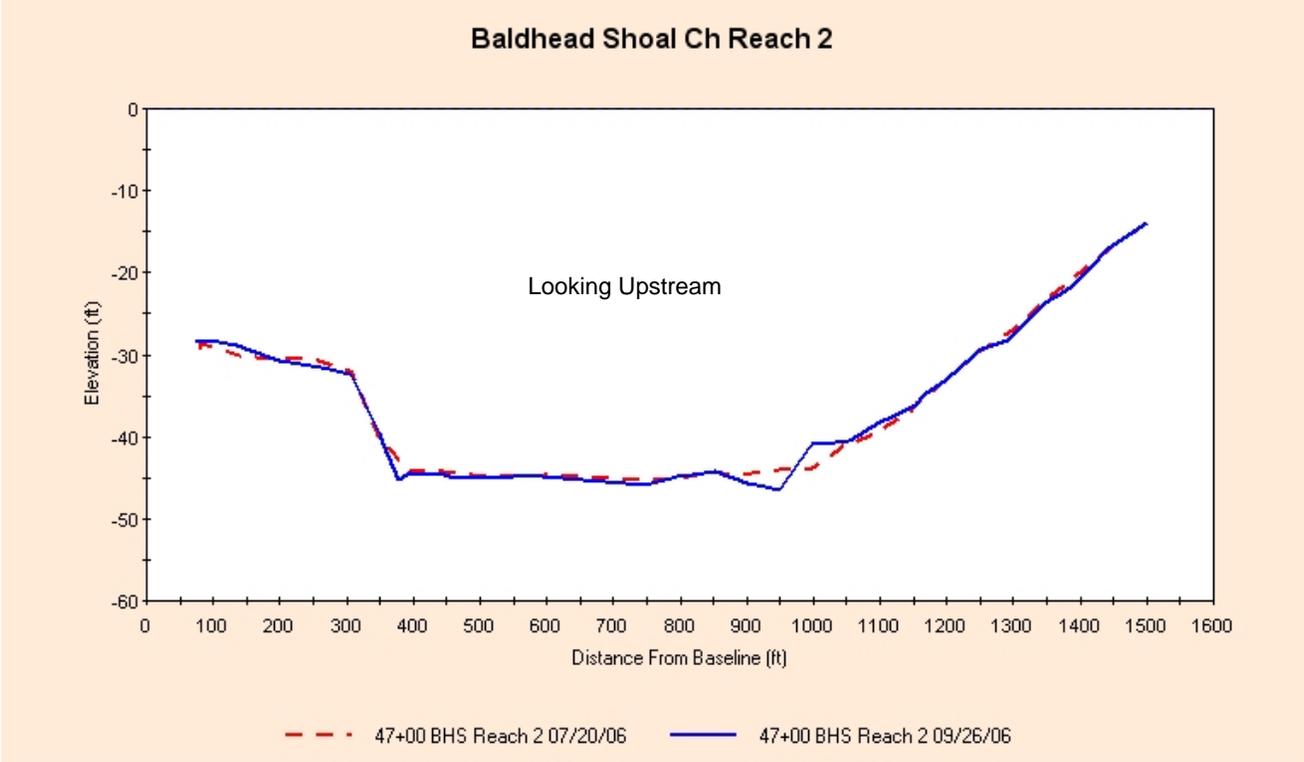
Figure 13 Baldhead Shoal Channel Reach 2 Navigable Widths – Stations 68+00 – 89+00



**Figure 14 Baldhead Shoal Station 45+00**



**Figure 15 Baldhead Shoal Station 46+00**



**Figure 16 Baldhead Shoal Station 47+00**