

BALD HEAD ISLAND SETTLEMENT MONITORING SURVEYS
CYCLE 2, REPORT 6
June 2008

Introduction

The 6th set of monitoring surveys of the 2nd cycle for the Settlement Agreement between the Village of Bald Head Island and the United States Army Corps of Engineers was taken in June 2008. 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). This report is the sixth in this series.

Data

The 5th set of monitoring surveys taken in April 2008 is displayed in Figure 1 and is labeled April 2008 Surveys. Figure 2 is a plot of surveys taken in June 2008 and Figure 3 is a difference plot between the April 2008 and June 2008 surveys. Figure 4 is a difference plot between the June 2007 and June 2008 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. Plot of the minimum channel cross sections at station 20+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 24+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, and 49+00 are shown in Figures 14 and 15.

Conclusion

The minimum navigable width at a depth of -42 feet mllw is more than 500 feet at all stations in Baldhead Shoal Channel Reach 1 and 2 and Smith Island.

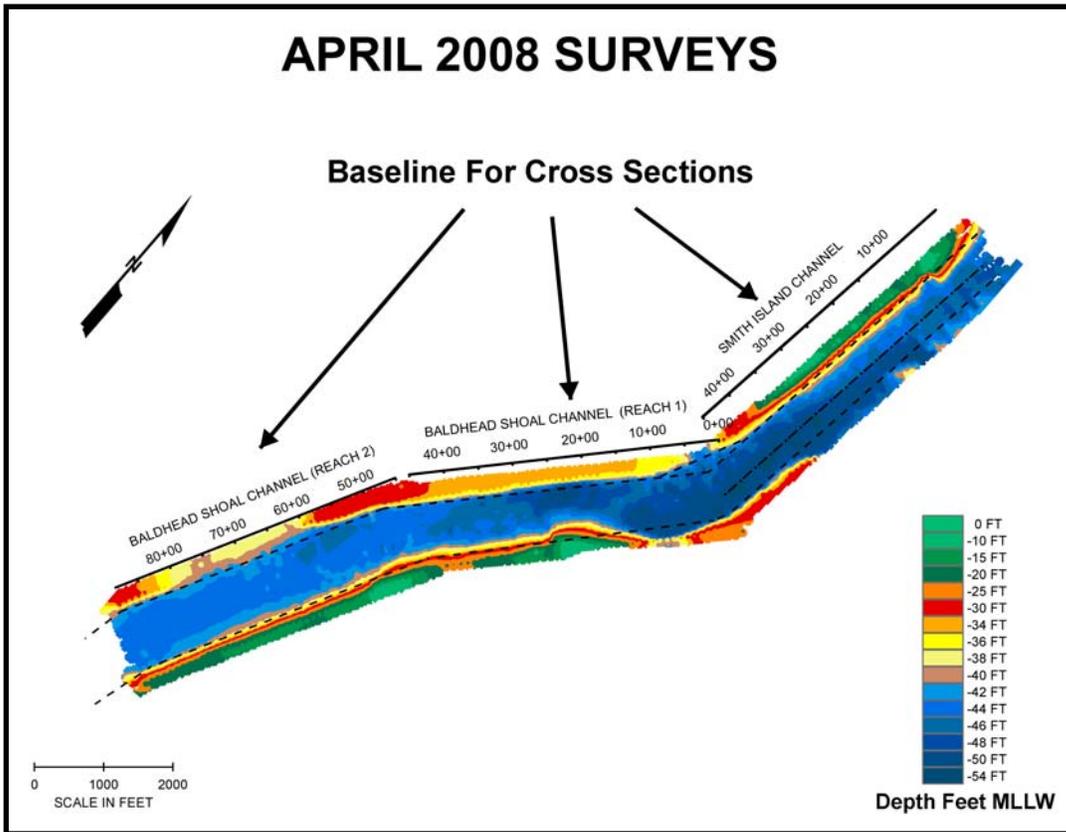


Figure 1 April 2008 Surveys

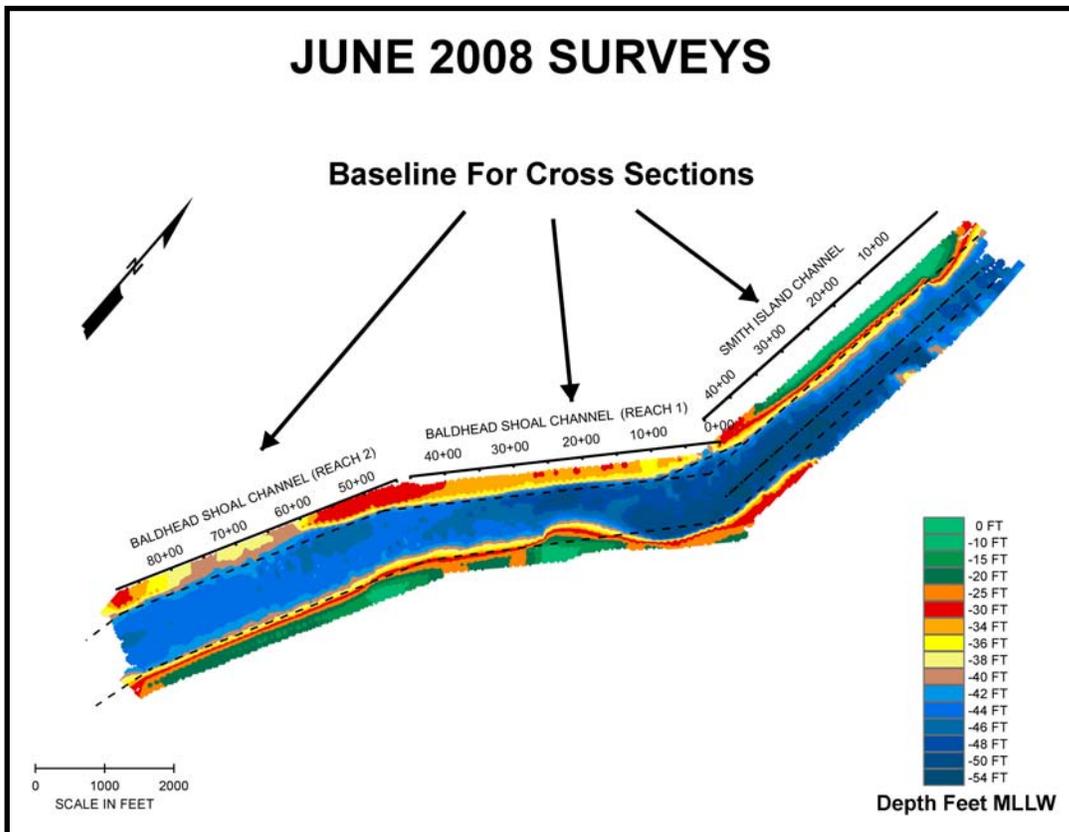


Figure 2 June 2008 Surveys

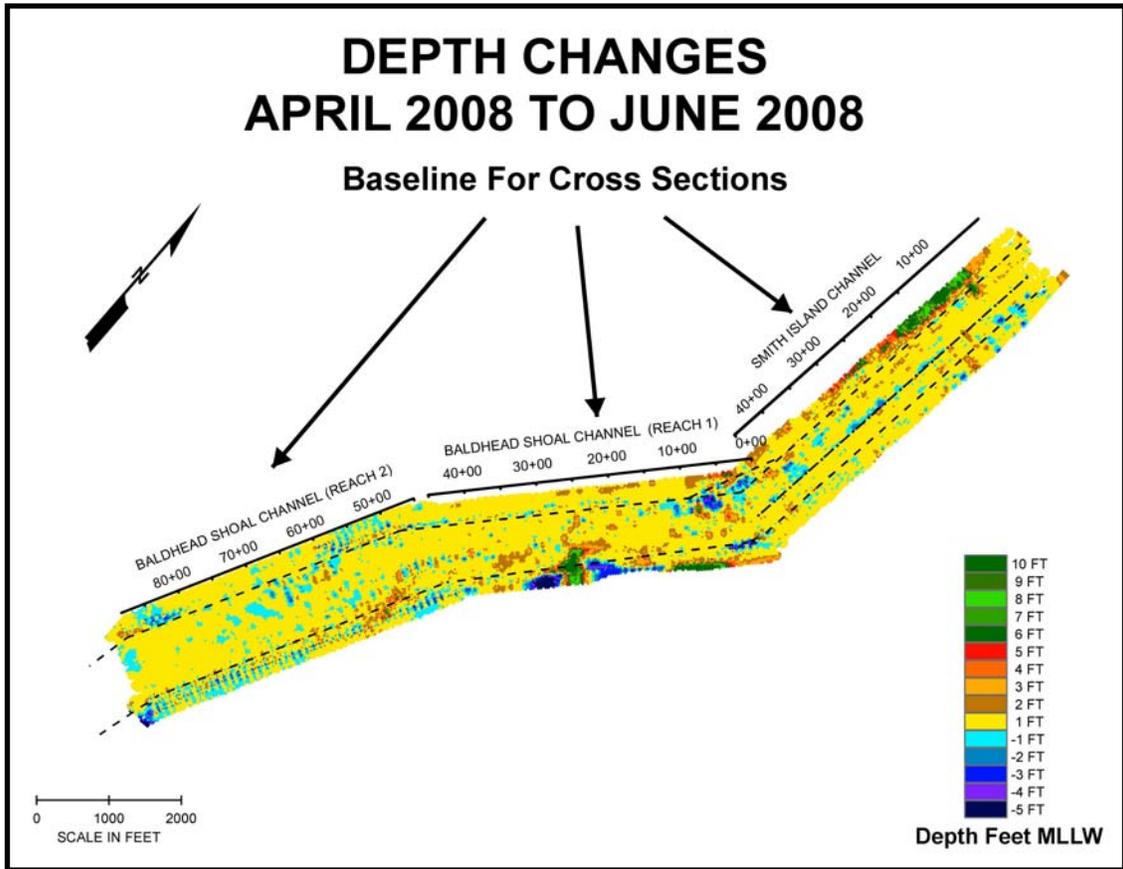


Figure 3 April 2008 to June 2008 Depth Changes

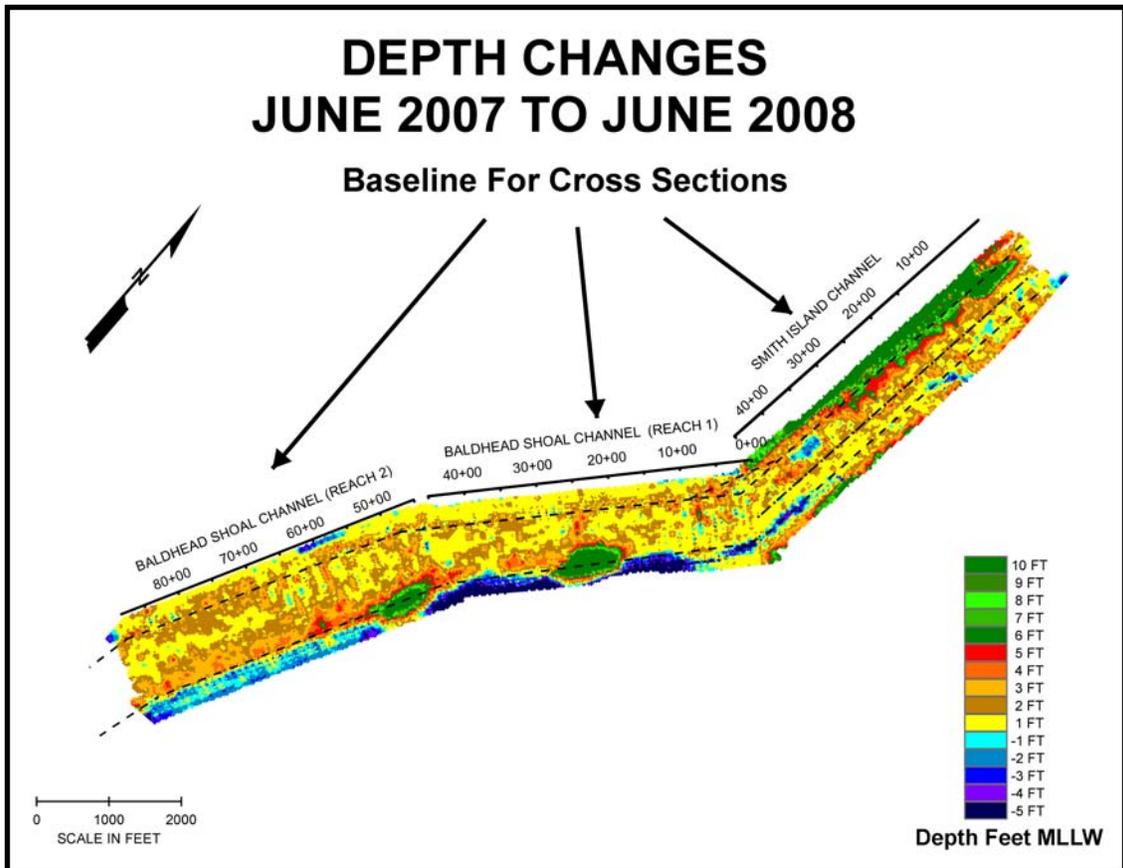


Figure 4 June 07 to June 2008 Depth Changes

SMITH ISLAND CHANNEL NAVIGABLE WIDTHS



Navigable widths are measured at -42 ft mllw

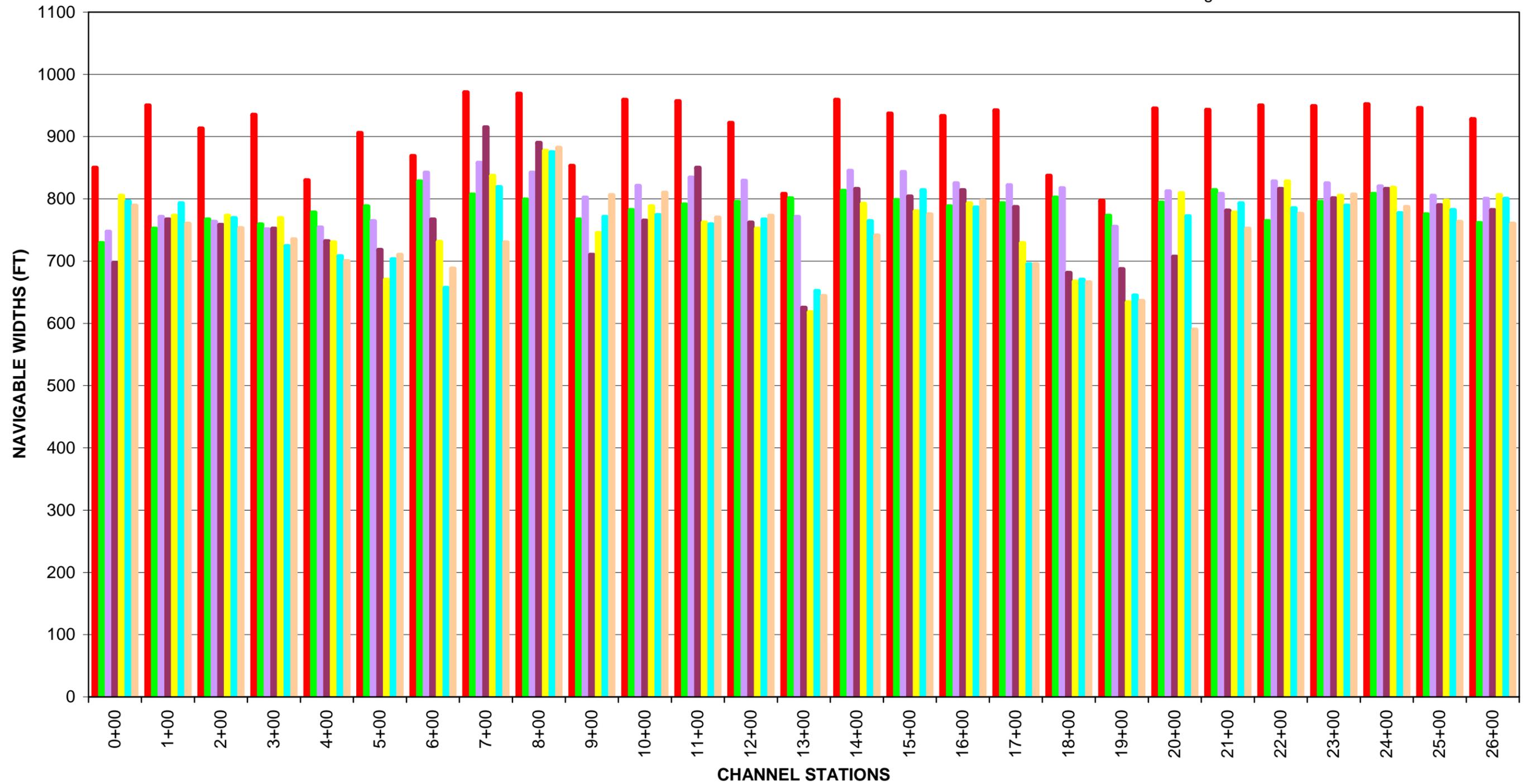


Figure 5 Smith Island Channel Navigable Widths – Stations 0+00 – 26+00

SMITH ISLAND CHANNEL NAVIGABLE WIDTHS

■ Mar-07 ■ Jun-07 ■ Sep-07 ■ Nov-07
■ Feb-08 ■ Apr-08 ■ Jun-08

Navigable widths are measured at -42 ft mllw

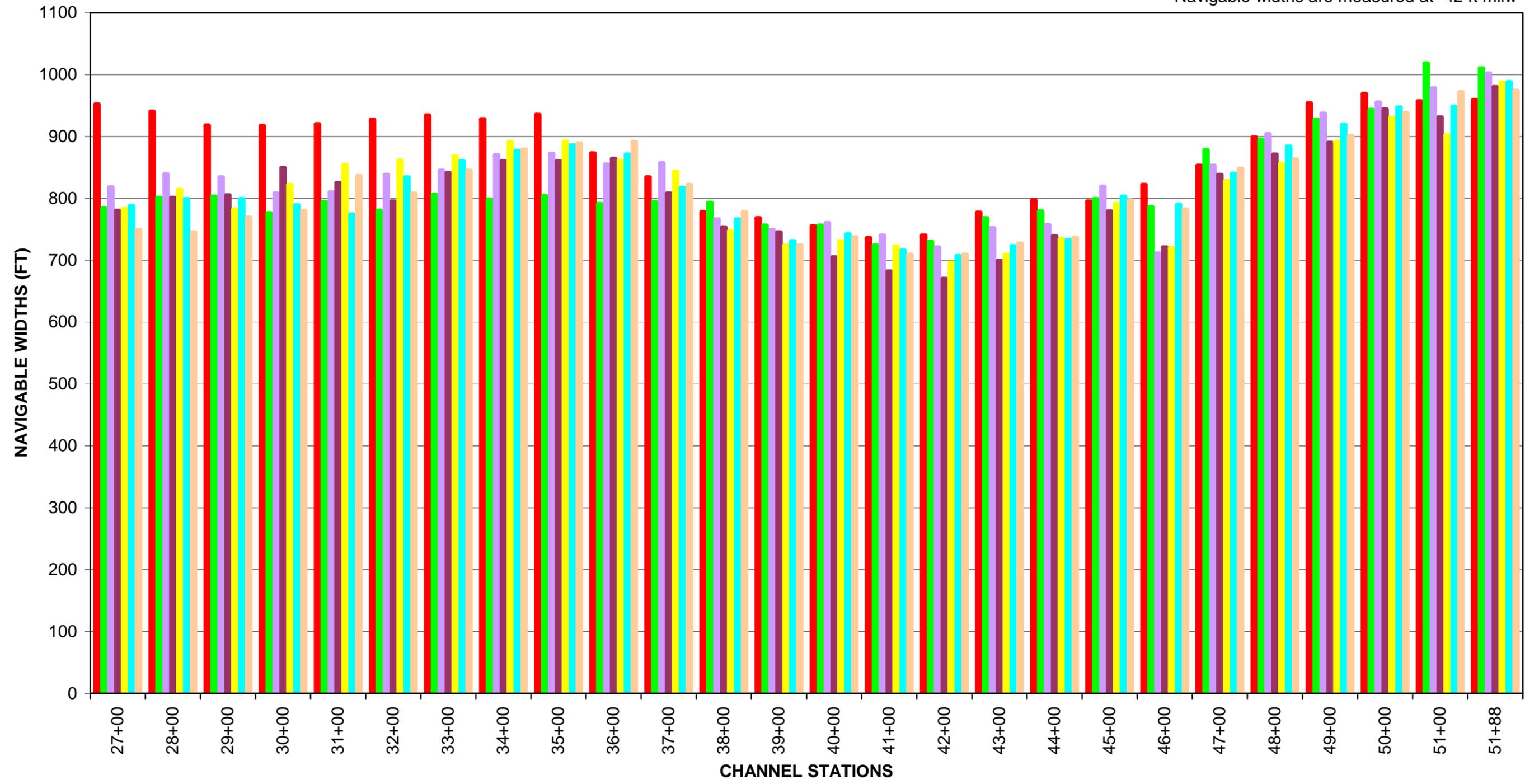


Figure 6 Smith Island Channel Navigable Widths – Stations 27+00 – 52+00

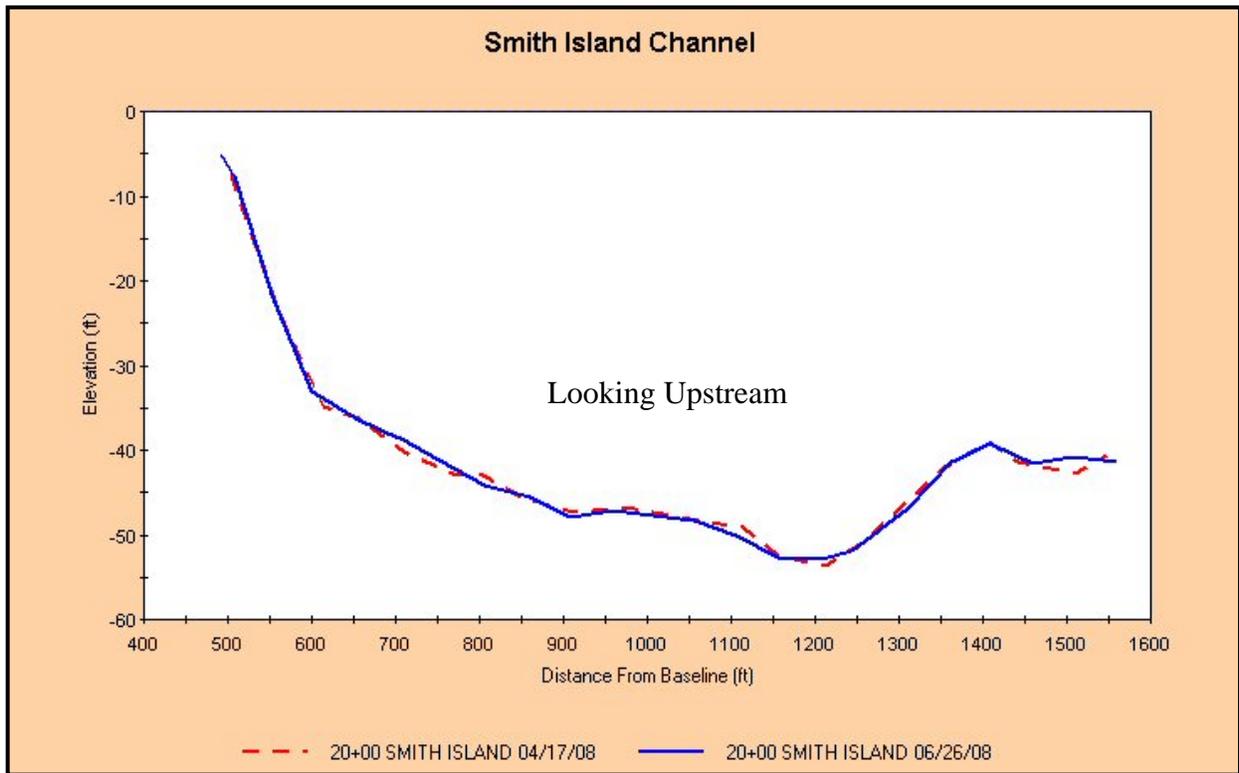


Figure 7 Smith Island Station 20+00

BALDHEAD SHOAL CHANNEL (REACH 1) NAVIGABLE WIDTHS



Navigable widths are measured at -42 ft mllw

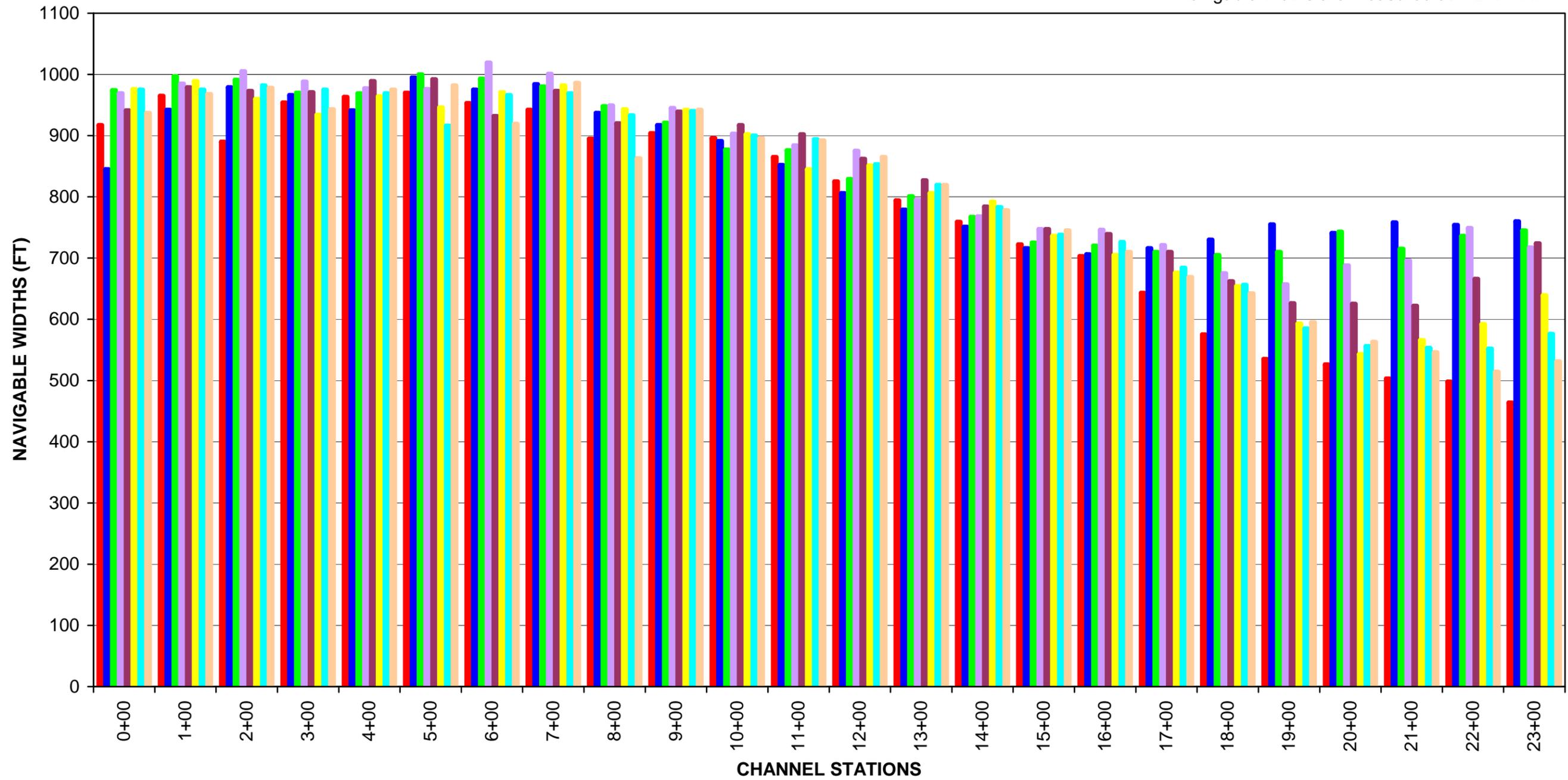


Figure 8 Baldhead Shoal Channel Reach 1 Navigable Widths – Stations 0+00 – 23+00

BALDHEAD SHOAL CHANNEL (REACH 1) NAVIGABLE WIDTHS



Navigable widths are measured at -42 ft mllw

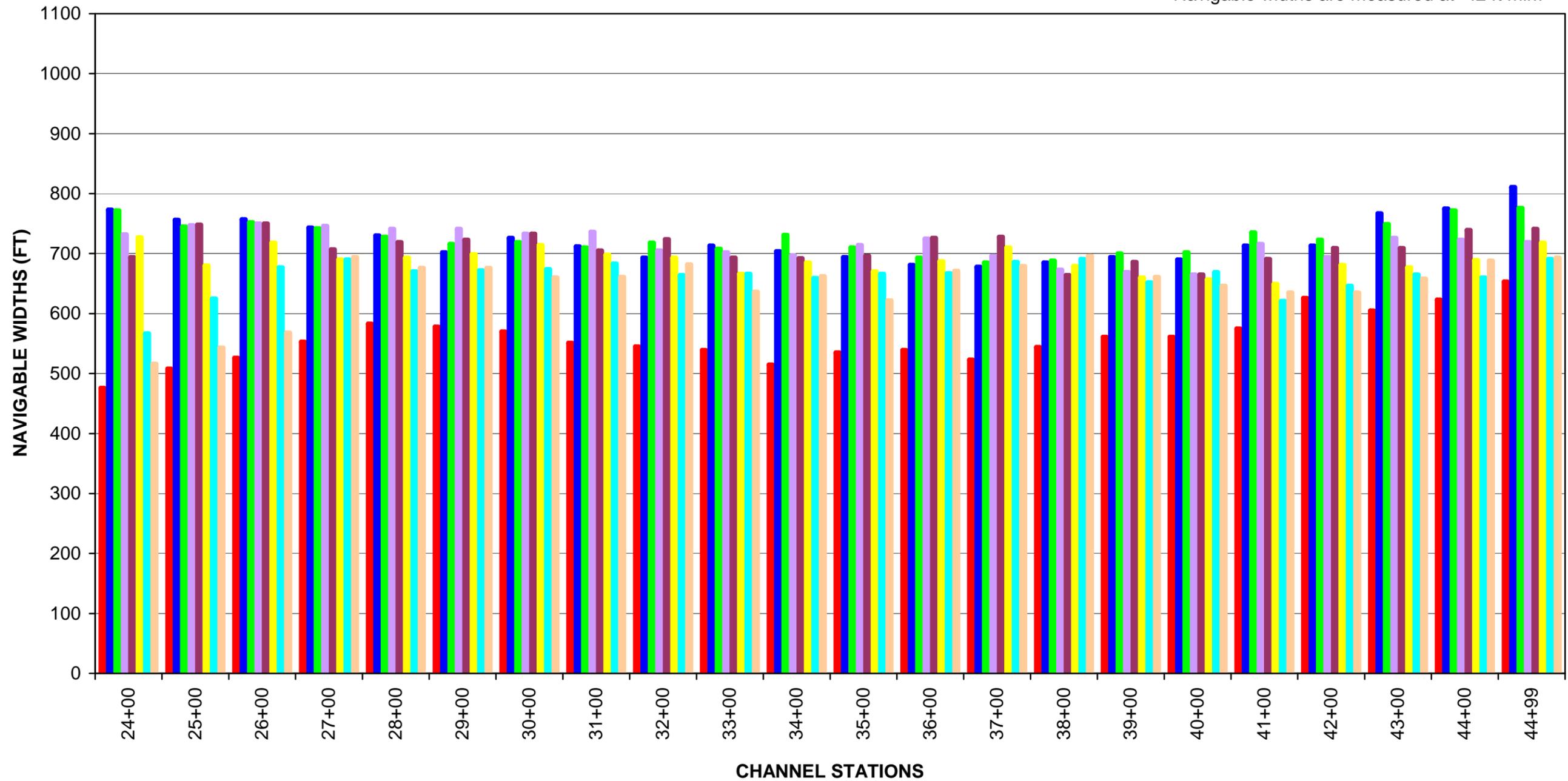


Figure 9 Baldhead Shoal Channel Reach 1 Navigable Widths – Stations 24+00 – 44+99

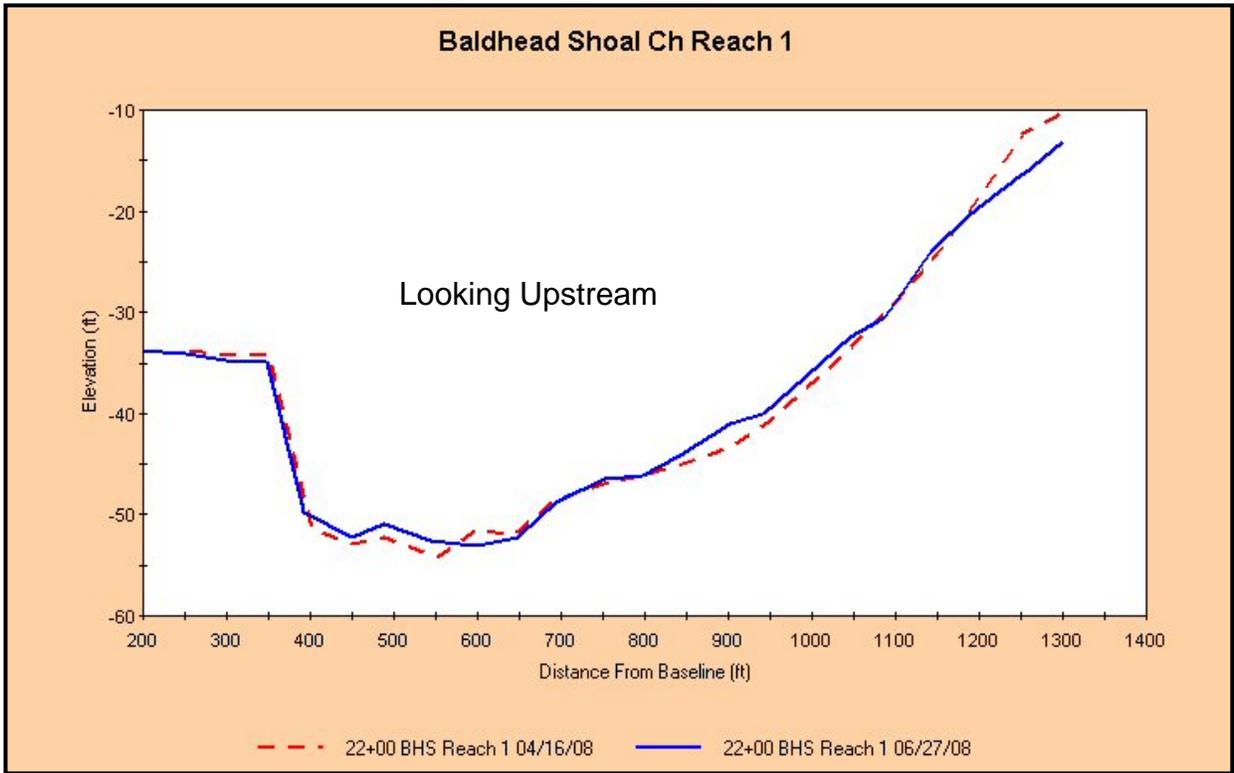


Figure 10 Baldhead Shoal Station 22+00

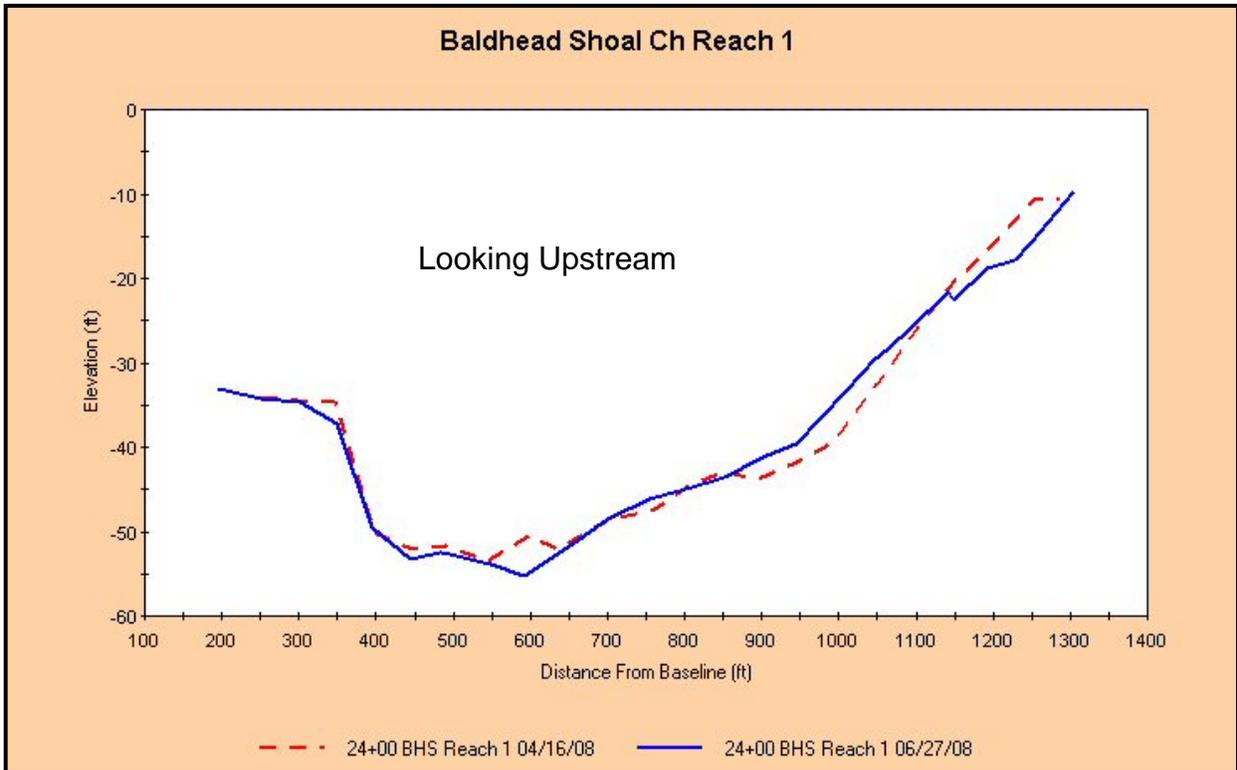


Figure 11 Baldhead Shoal Station 24+00

BALDHEAD SHOAL CHANNEL (REACH 2) NAVIGABLE WIDTHS

■ Mar-07 ■ May-07 ■ Jun-07 ■ Sep-07
■ Nov-07 ■ Feb-08 ■ Apr-08 ■ Jun-08

Navigable widths are measured at -42 ft mllw

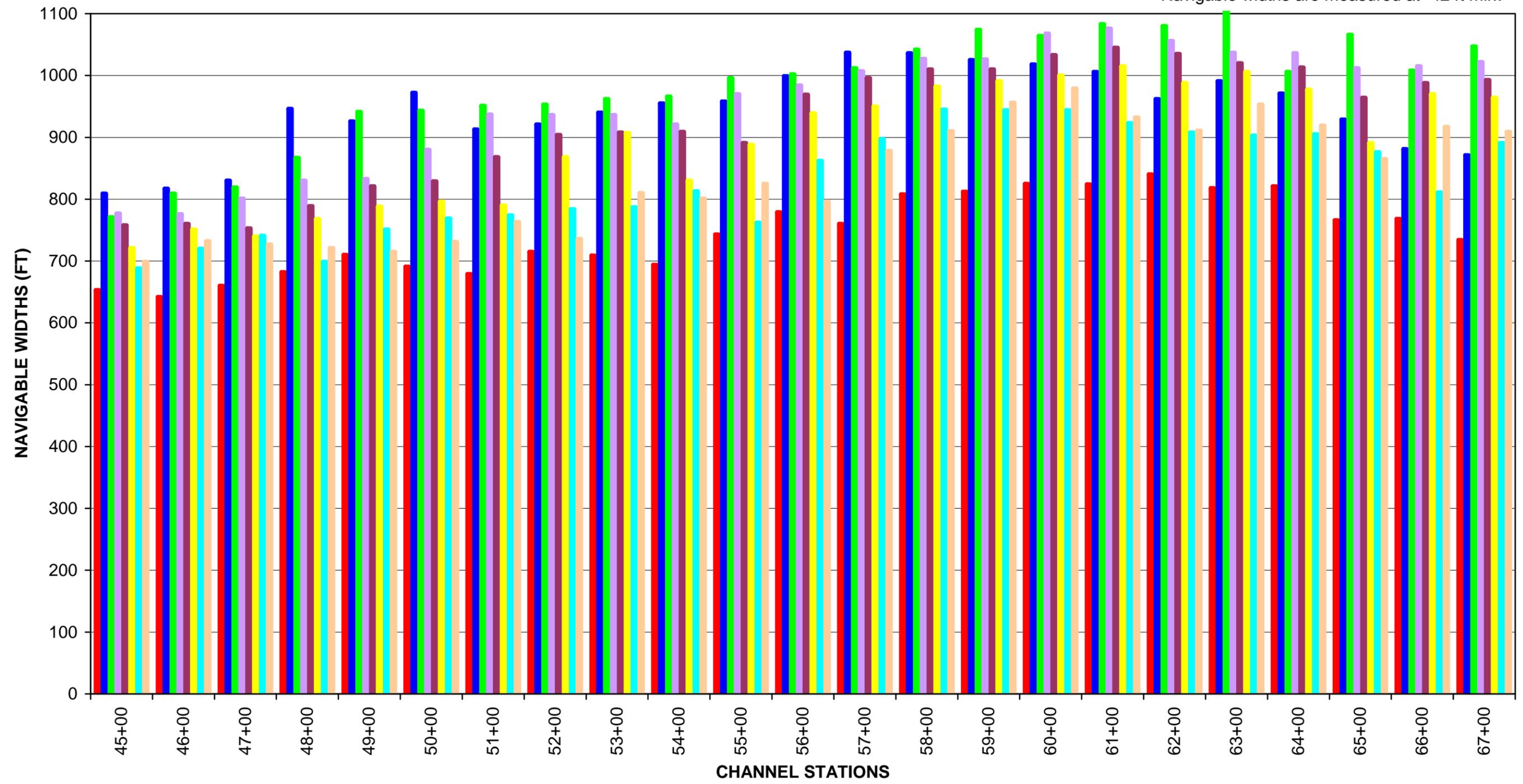


Figure 12 Baldhead Shoal Channel Reach 2 Navigable Widths – Stations 45+00 – 67+00

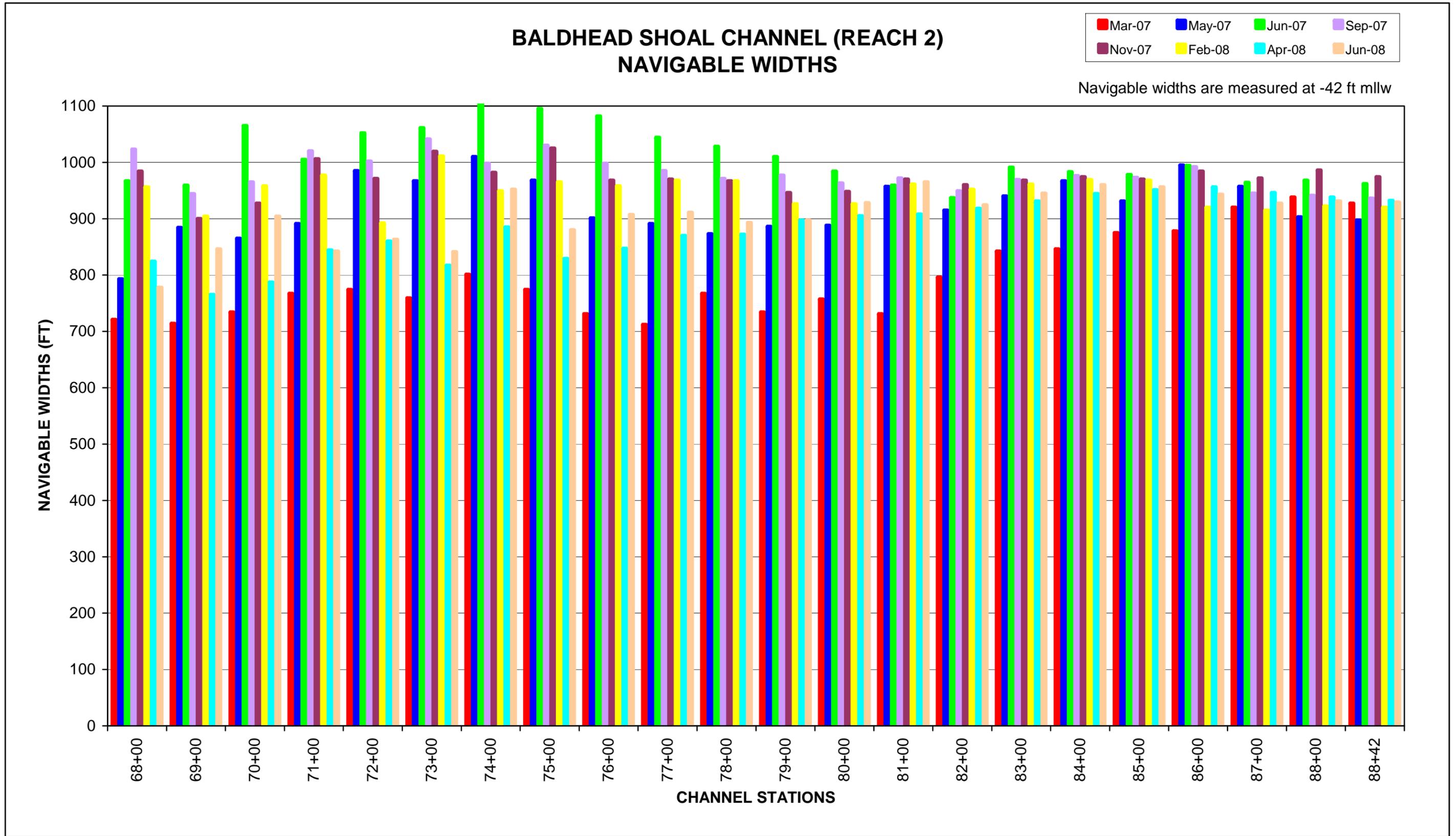


Figure 13 Baldhead Shoal Channel Reach 2 Navigable Widths – Stations 68+00 – 89+00

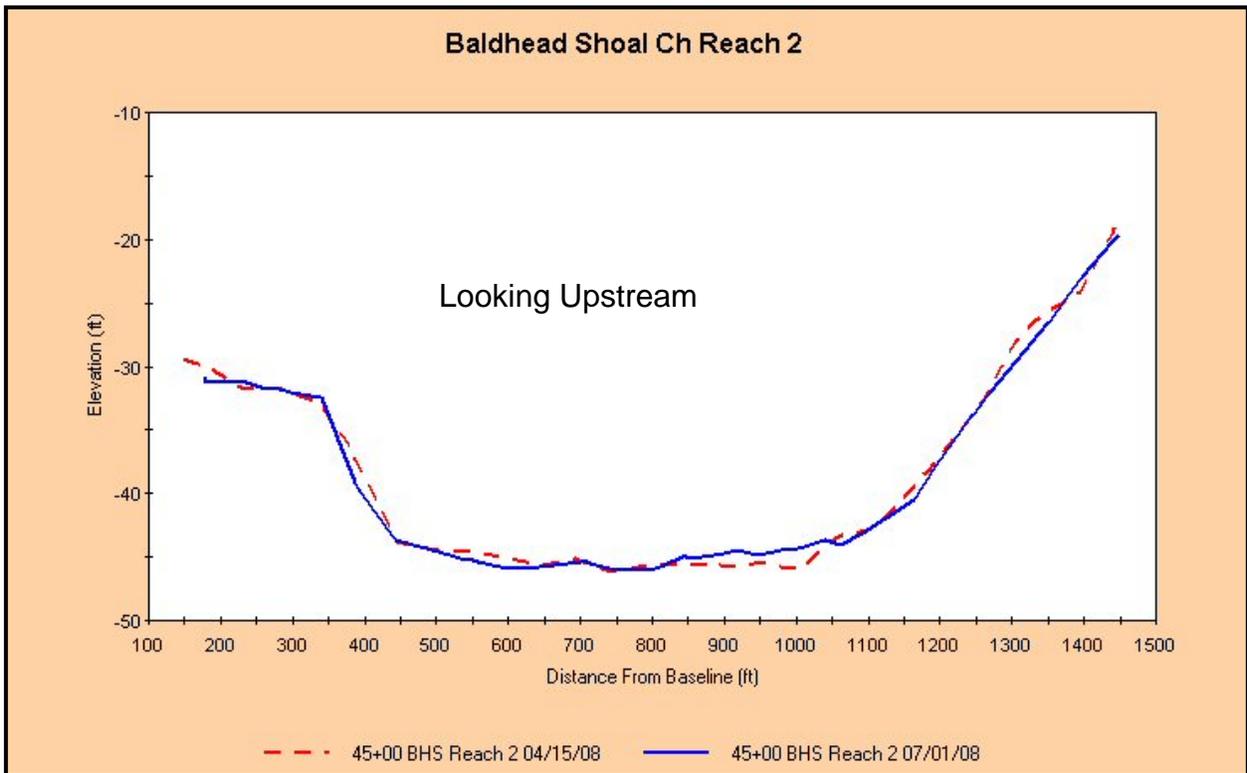


Figure 14 Baldhead Shoal Station 45+00

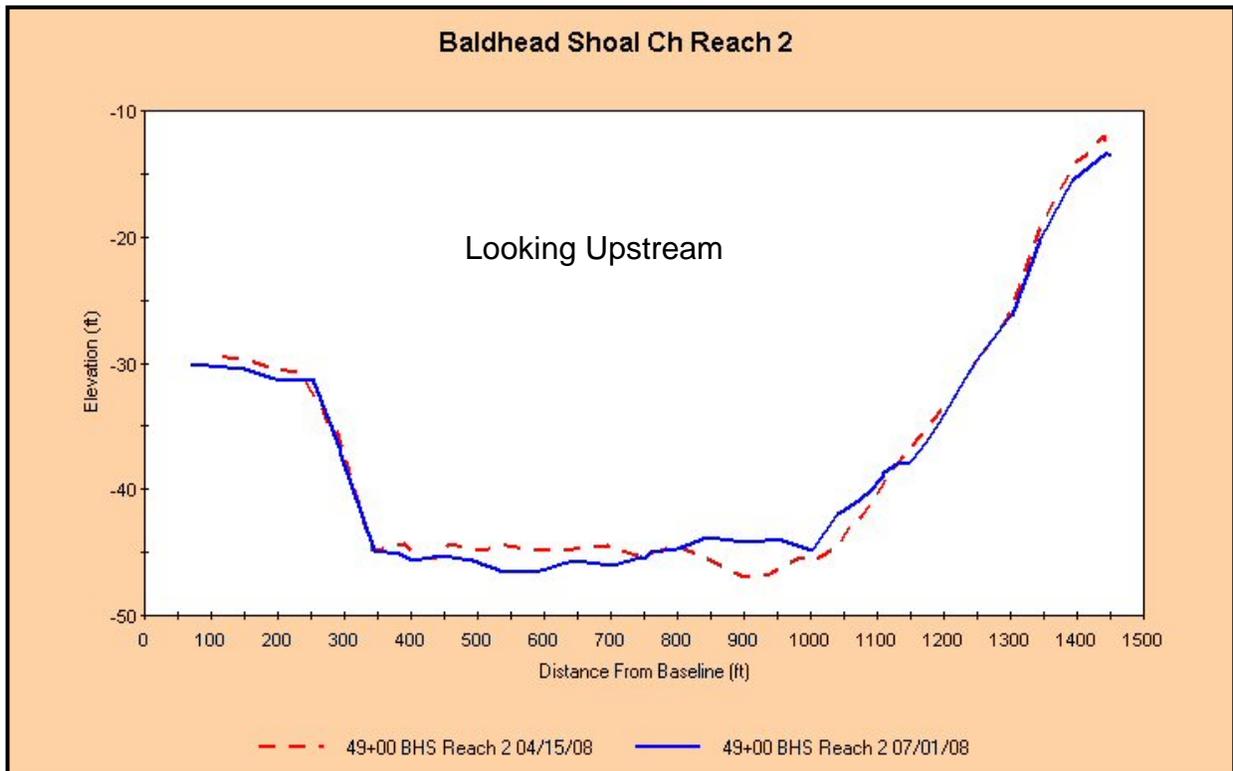


Figure 15 Baldhead Shoal Station 49+00