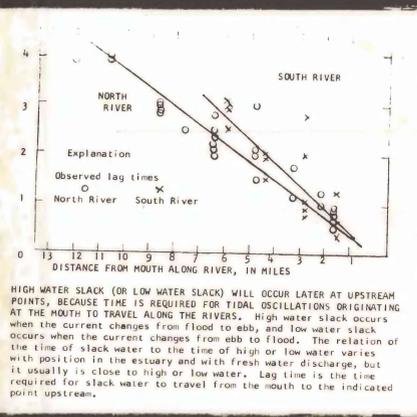
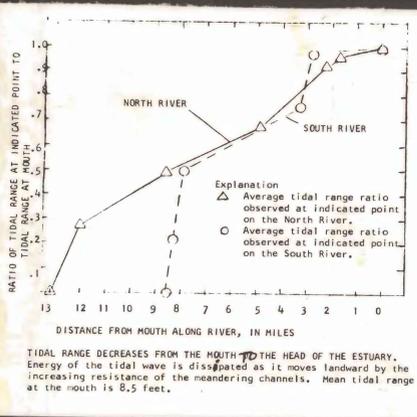
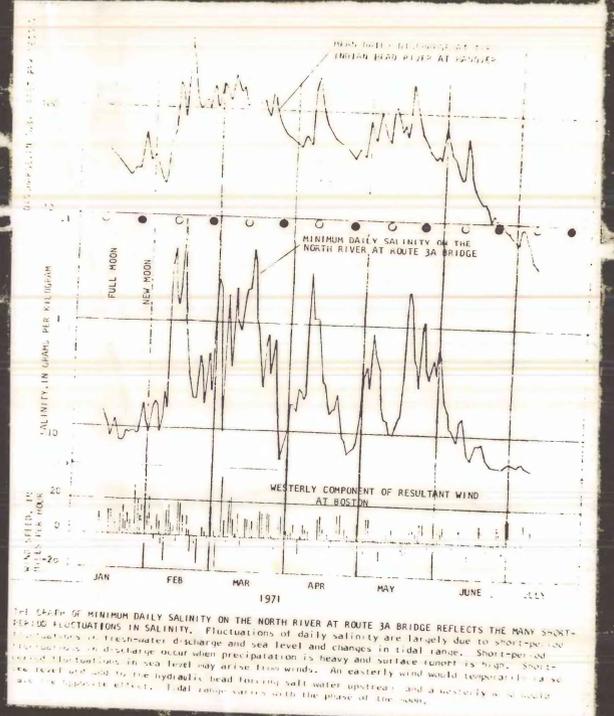
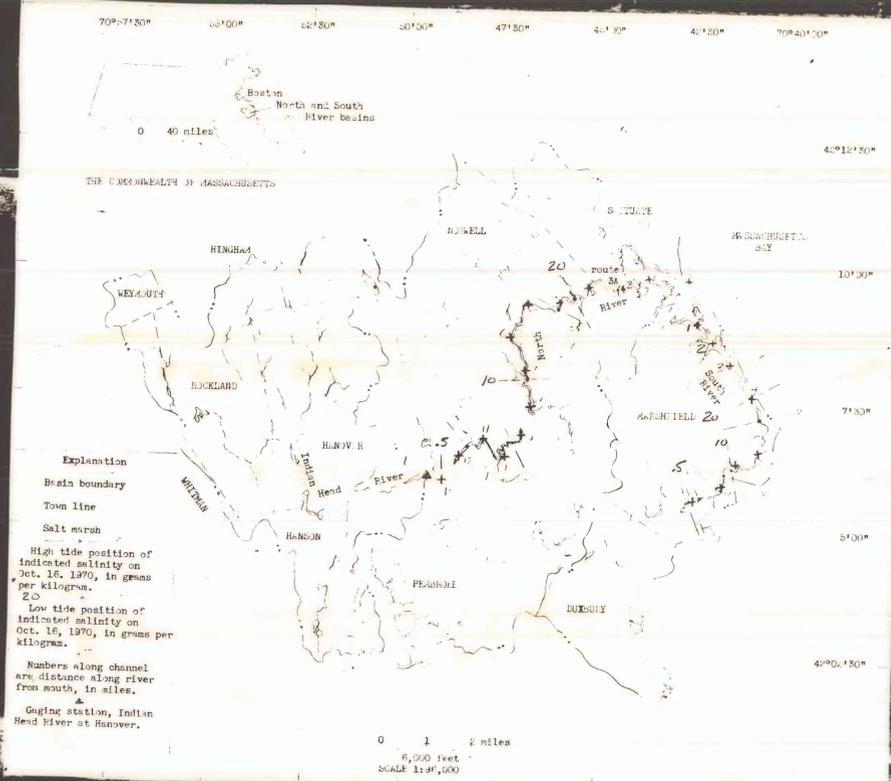
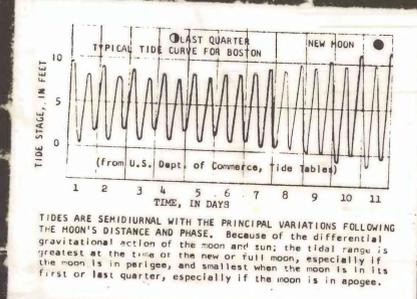
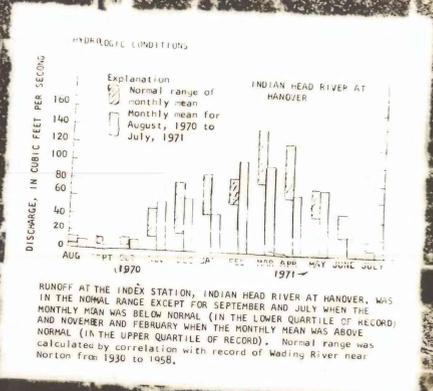
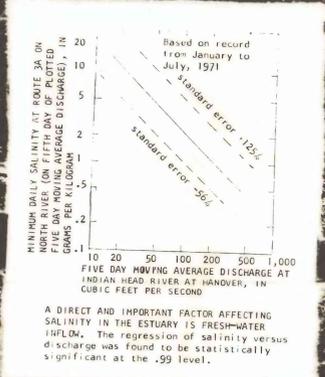
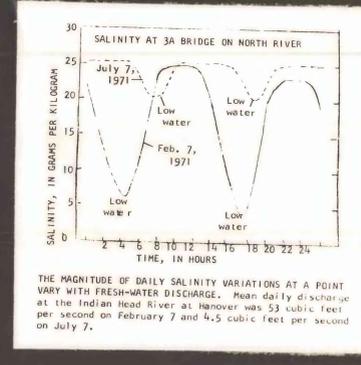
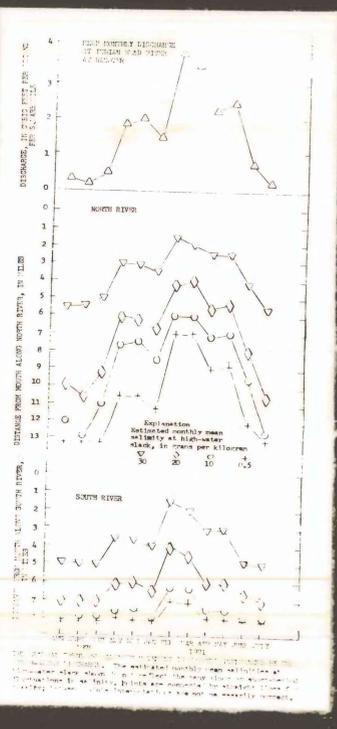
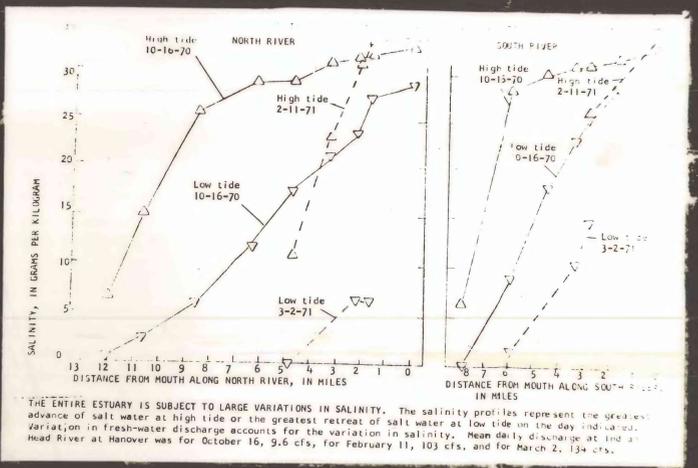
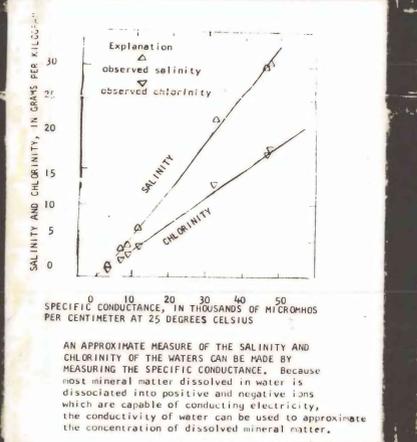


The study area is the North and South Rivers, which empty into the Indian Head River at Hanover, Massachusetts. The North River has a drainage area of 83.1 square miles and the South River has a drainage area of 21.7 square miles. The Indian Head River at Hanover is a tidal estuary. The study area is the North and South Rivers, which empty into the Indian Head River at Hanover, Massachusetts. The North River has a drainage area of 83.1 square miles and the South River has a drainage area of 21.7 square miles. The Indian Head River at Hanover is a tidal estuary.

**Salinity** is the total amount of dissolved solids in water, contained in one kilogram of sea water.  
**Low water** is water with salinity less than 0.5 grams per kilogram.  
**Grams per kilogram** is a unit expressing the concentration of chemical constituents in solution. Grams per kilogram represents the weight of solute per unit weight of solution.  
**High water slack** occurs in tidal waters when the current changes from flood to ebb.  
**Low water slack** occurs in tidal waters when the current changes from ebb to flood.  
**Slack time** is the time required for slack water to travel from the mouth to a point upstream.  
**Low water slack** occurs in tidal waters when the current changes from ebb to flood.  
**Salinity** is a measure of the concentration of dissolved solids in water.  
**Sea water** is the high salinity (about 35 grams per kilogram) water in Massachusetts Bay, which, when mixed with fresh water in the estuary, produces the range in salinity found in the estuary.  
**Tidal range** is the difference in water surface elevations between consecutively occurring high and low tides.



THE NORTH AND SOUTH RIVERS ARE TIDAL FROM THE MOUTH TO POINTS ABOUT 13 MILES AND 8 MILES UPSTREAM, RESPECTIVELY. The North River's 83.1 square mile drainage area is the Indian Head River at Hanover (drainage area is 21.7 square miles) where continuous record of discharge has been used as an indication of freshwater discharge into the estuary. Isohalines for a day (October 16, 1970) when the freshwater inflow was low, 5.6 cfs, are shown on the map. The drainage area of the South River is 21.7 square miles. Distance along channel from the mouth has been marked in miles.



U.S. Department of Commerce, NOAA, Tide tables, East coast of North and South America, Washington, D.C., U.S. Govt. Printing Office, published annually.  
 U.S. Geological Survey, Water-resources data for Massachusetts, New Hampshire, Rhode Island, and Vermont, Boston, Mass., Water Resources Division, published annually.