



Figure 2.4: Topography of the Western Panhandle

runoff to streams averaged about 20 to 25 inches near the Florida–Alabama border to 40 inches in coastal Okaloosa and Santa Rosa Counties. Runoff is enhanced by the land’s sloping relief and elevations, along with a well-developed stream network. While runoff values for the basin are high compared with the rest of Florida, evapotranspiration values are considerably lower than in other parts of Florida. The general absence of large lakes and extensive wetland systems were suggested as a reason for the low evapotranspiration (Rumenik, 1988).

### Streams

The Blackwater, Yellow, and Escambia Rivers are the major sources of water inflow to the Pensacola Bay estuary. All three rivers originate in Alabama. The combination of surface topography, land elevation, low evaporation rates, and substantial surface runoff has created a well-defined and extensive dendritic pattern of surface drainage for these rivers. Many of the tributaries also have well-defined drainage basins and patterns. **Table 2.3** lists lengths, drainage area, and average flow for each river. The following descriptions of the basin’s rivers were summarized from the Pensacola Bay System Surface Water Improvement and Management (SWIM) Plan (Thorpe et al., 1997) and the *Florida Rivers Assessment* (DNR, 1989).

The Blackwater River originates near Bradley, Alabama, and drains 860 square miles, of which 700 square miles are in Florida. The river is about 62 miles long, 54.5 miles of which are in Florida. It discharges to Blackwater Bay in the Pensacola Bay estuary. A major source of flow for the Blackwater River is the sand and gravel aquifer. Surface runoff, to a lesser degree, also contributes to its flow. The lower temperature of ground water