

In reference to report:

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Appendix 1. Climate

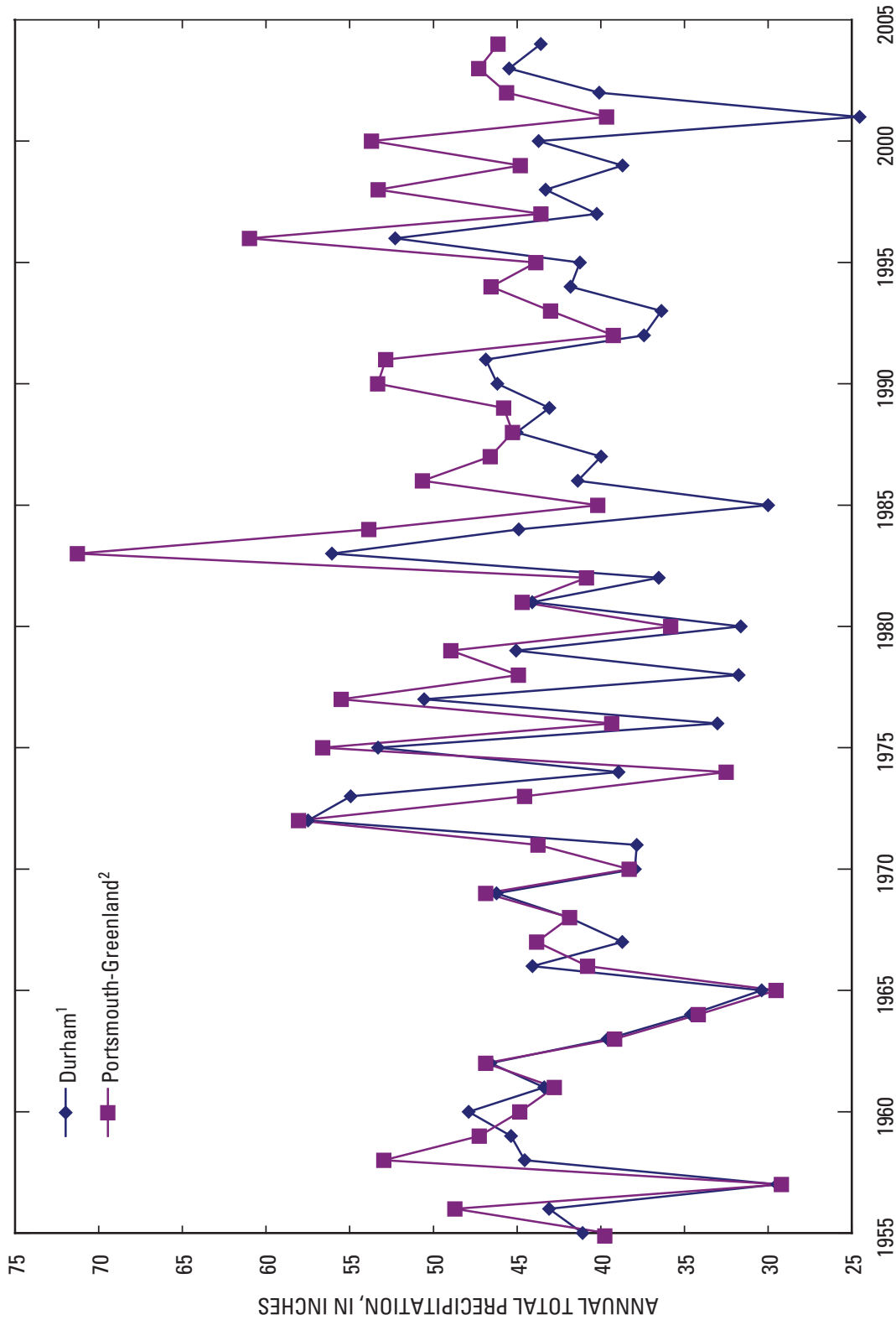
Figures

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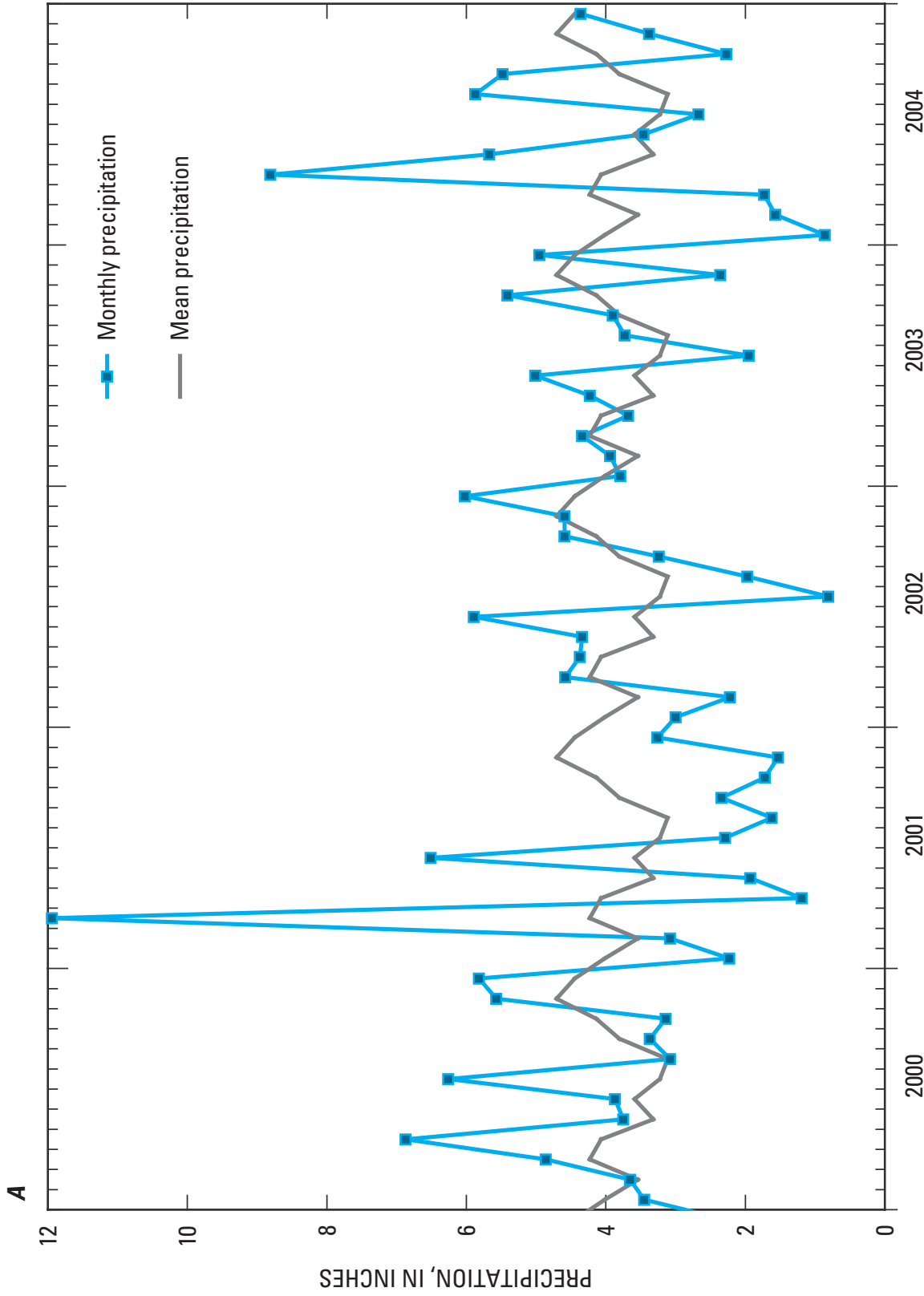
The study area is within the Seaboard Lowland physiographic province and the climate is humid and temperate. Long-term precipitation collected between 1896 and 2004 (David Brown, New Hampshire State Climatologist, written commun., 2005) at Durham, 5 mi west of the study area, averaged about 41 in/yr with a standard deviation of 7.4 in. During the 50-year period shown in figure 1–1, precipitation was low during intervals of a range of magnitudes and durations. The second lowest annual total precipitation during 1896–2004 was 24.6 in. measured in 2001. The lowest annual total precipitation occurred in 1941 (23.9 in.). The effects of low precipitation in 1910 (25.6 in.) were more severe because this year was preceded and followed by years of below-normal precipitation. The drought of 1965 (30.4 in.) also was severe because it was preceded by 2 years of below-normal precipitation. In recent years, total annual precipitation in most of the 1990s and the 2000s was above average. Precipitation totals at Durham in 2002, 2003, and 2004 were 98, 111, and 107 percent of the long-term average respectively. Precipitation data were collected in the model area at the Pease International Tradeport (former Pease Air Force Base) in Portsmouth from 1954 to 1973 and in Greenland, 3.7 mi to the south, from 1973 to the present (fig. 1–1). Annual total precipitation at the Portsmouth and Greenland stations for the period 1955 through 2004 average about 3 in. more (7 percent), with about the same standard deviation, than precipitation at Durham for the same period. Most of this difference is accounted for by slightly greater average monthly precipitation during the winter months (October through March) at Portsmouth and Greenland.

Monthly total precipitation is generally similar across the study area. Monthly totals during 2000–04 and station records (fig. 1–1) were comparable, particularly when precipitation totals were low, with the exception of the influence of coastal storms that increase total precipitation closer to the shore. For example, storms in March 2001 accounted for about 9 more inches of precipitation at Greenland than was observed in Durham. This anomalous month caused the total annual precipitation during the 2001 drought to be only slightly below average at Greenland (39.6 in.), whereas the total precipitation at Durham was the second lowest recorded (24.6 in.) (fig. 1–1). Precipitation across the study area was below average during several months of the summer of 2001 and the summer of 2002. During the period when temporary streamflow stations were operated in the study area, monthly total precipitation in the study area was generally near average with the exception of low monthly totals in July and August 2002 (0.81 and 1.97 in., respectively) and low monthly totals in January and February 2004 (0.86 and 1.57 in., respectively) (fig. 1–2A). The total annual precipitation in 2004 was near average at Portsmouth and Greenland, whereas October 2004 was below the monthly average (fig. 1–2B).



1. Source of data for Durham is State Climatologist.
 2. Source of data for Portsmouth and Greenland is the National Oceanic and Atmospheric Administration.

Figure 1-1. Long-term annual precipitation at Durham (inland) and Portsmouth and Greenland (on the coast), New Hampshire.



Sources of data: Durham, State Climatologist; and Portsmouth and Greenland, National Oceanic and Atmospheric Administration.

Figure 1-2. (A) Monthly and mean precipitation at Portsmouth and Greenland, New Hampshire, from January 2000 through December 2004.



Sources of data: Durham, State Climatologist; and Portsmouth and Greenland, National Oceanic and Atmospheric Administration.

Figure 1-2. (B) Monthly precipitation statistics at Portsmouth and Greenland, New Hampshire, from 1955 through 2005.—Continued

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