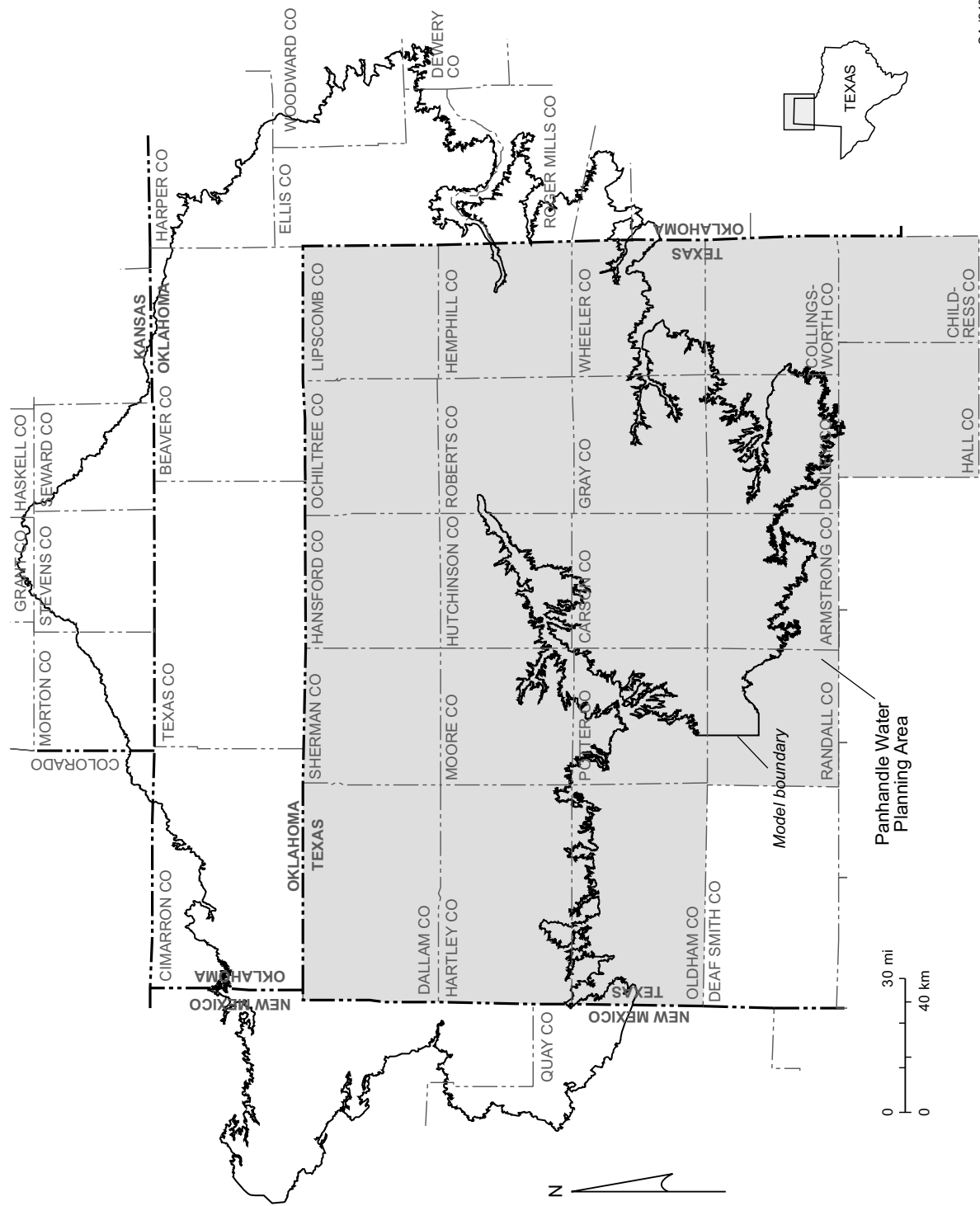


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Figure 1. Location of the study area in the northern Texas Panhandle and parts of northwestern New Mexico, western Oklahoma, and southwestern Kansas. The study area was extended beyond Texas to provide natural hydrologic boundaries for a numerical model away from the area of interest. Modified from U.S. Geological Survey (1998). This study lies adjacent to and fits with the Groundwater Availability Model (GAM) study for the Southern High Plains. Modified from U.S. Geological Survey (1998).



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Figure 2. Location of the study area in the Panhandle Water Planning Area, one of 16 Texas regional water planning areas.

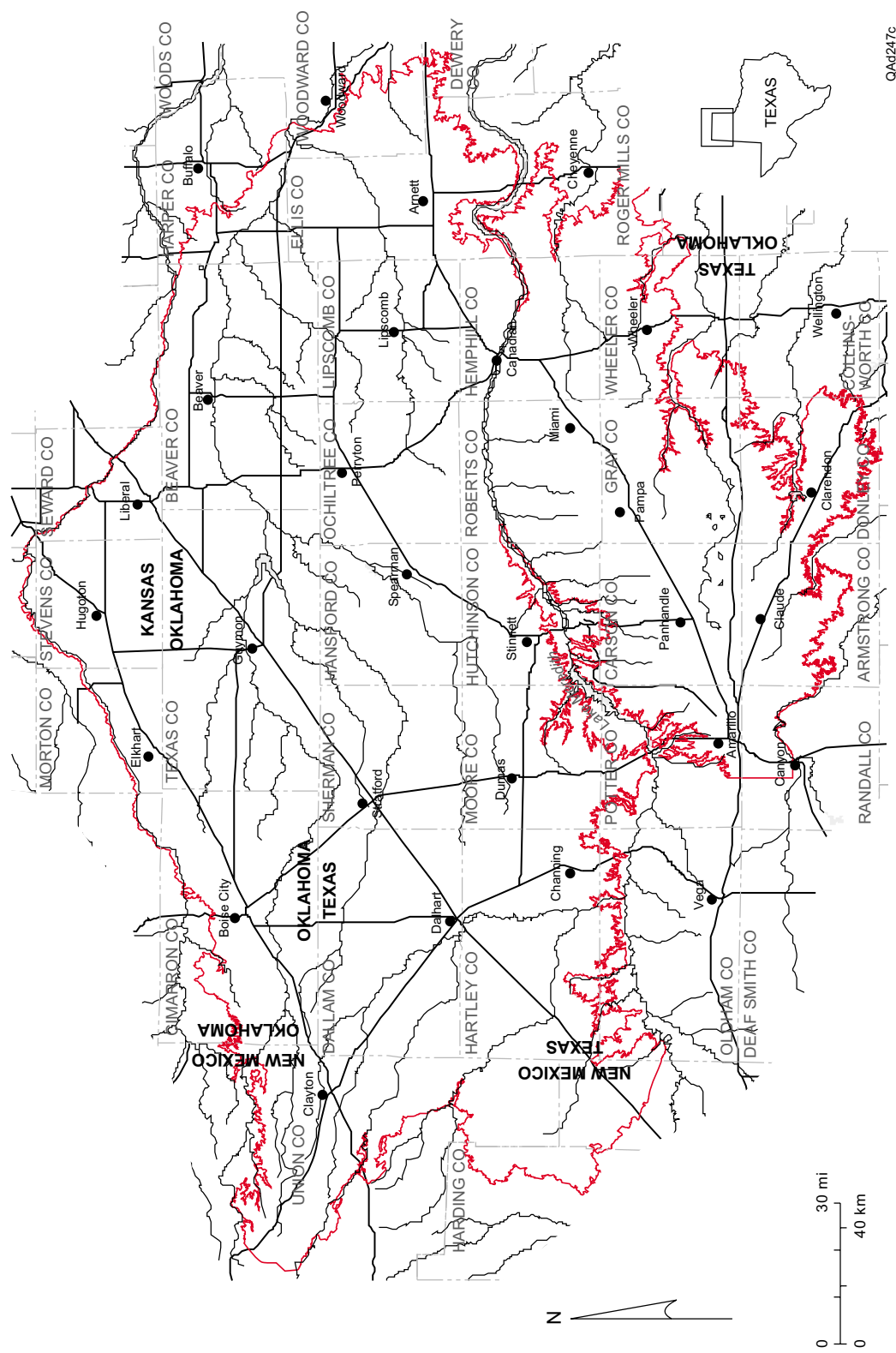


Figure 3. Location of major towns, rivers, lakes, and roads in the study area.

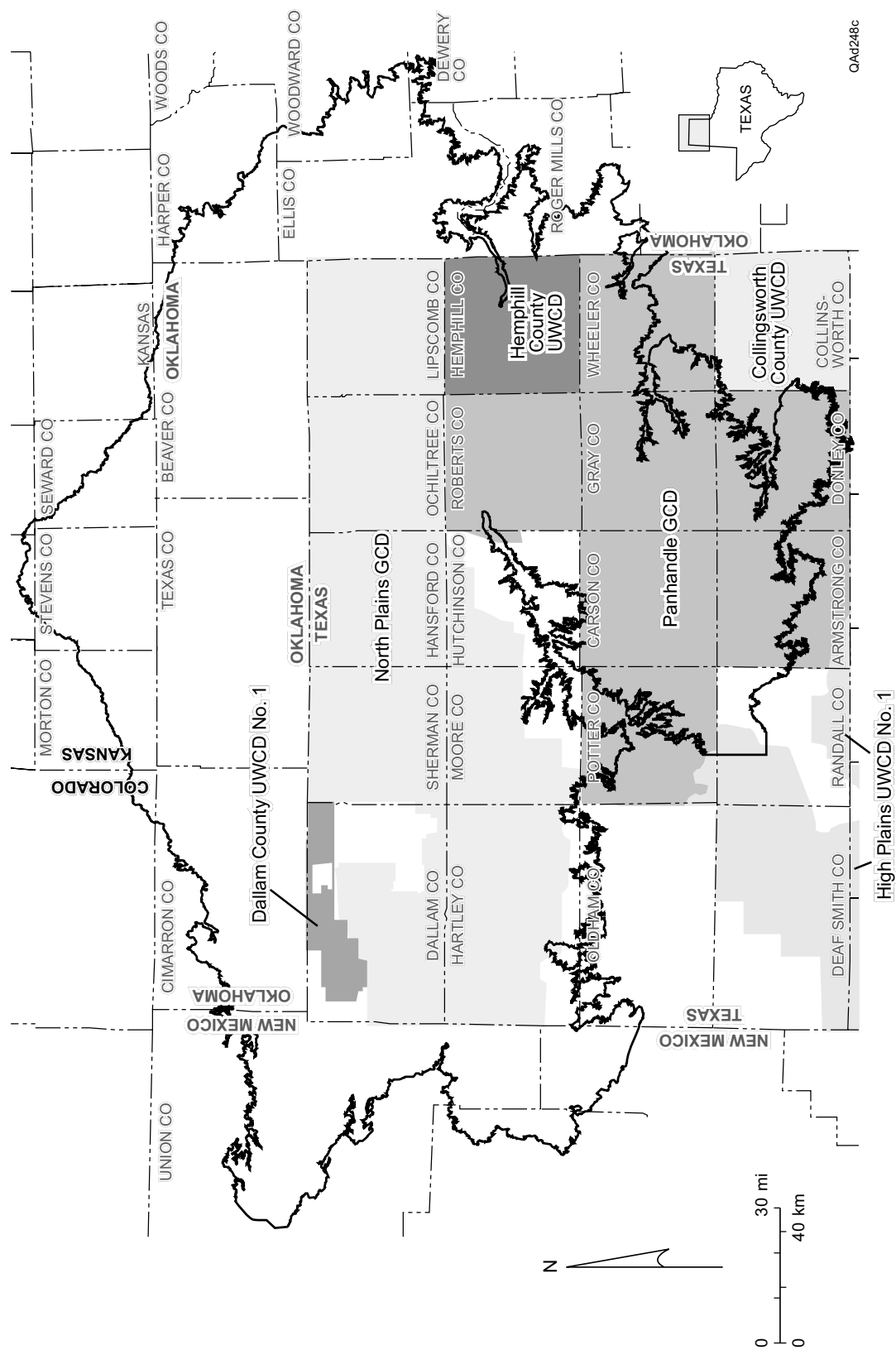


Figure 4. Location of Texas groundwater conservation districts in the vicinity of the study area.

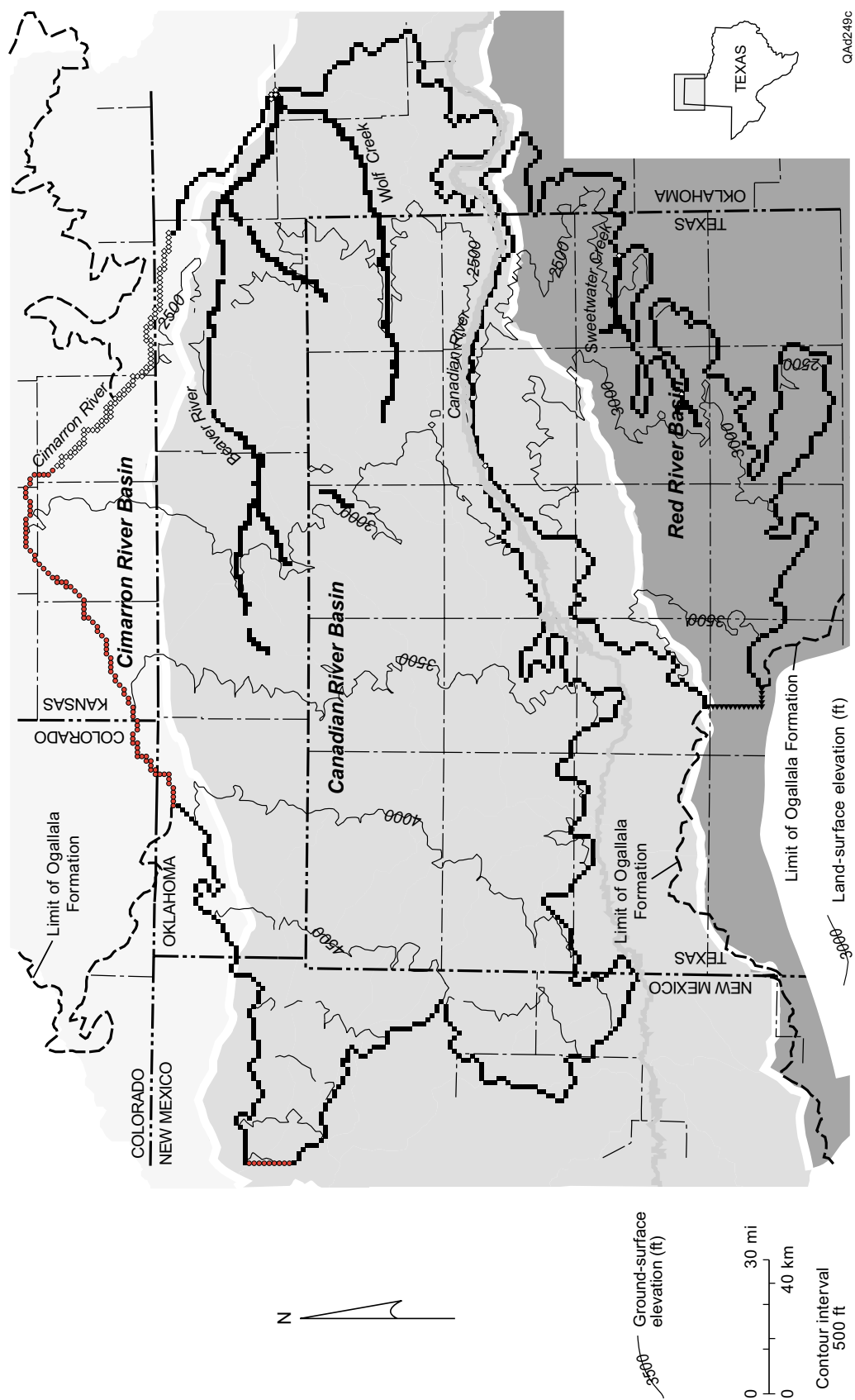


Figure 5. Ground-surface elevation and river basins across the study area.

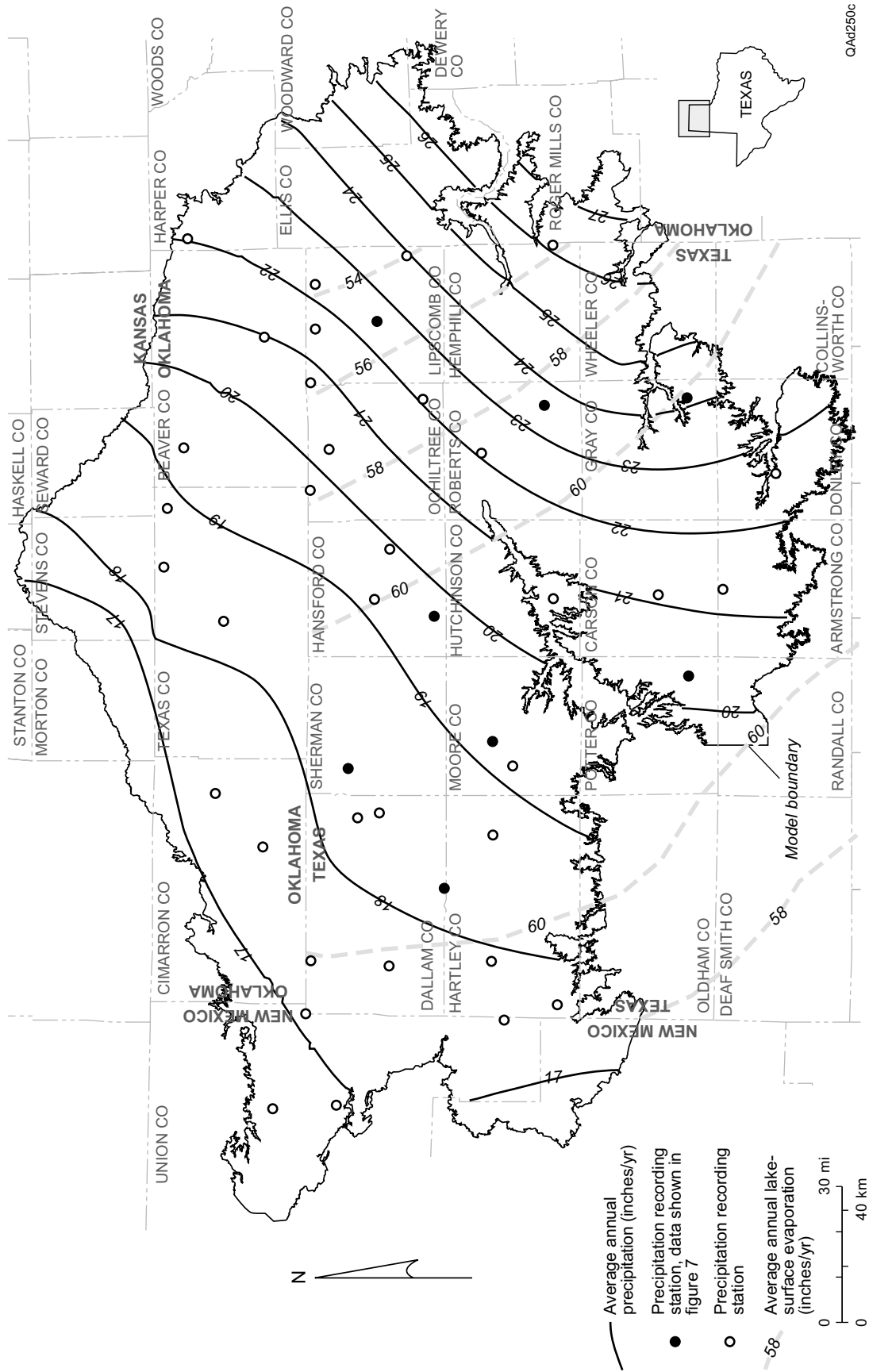
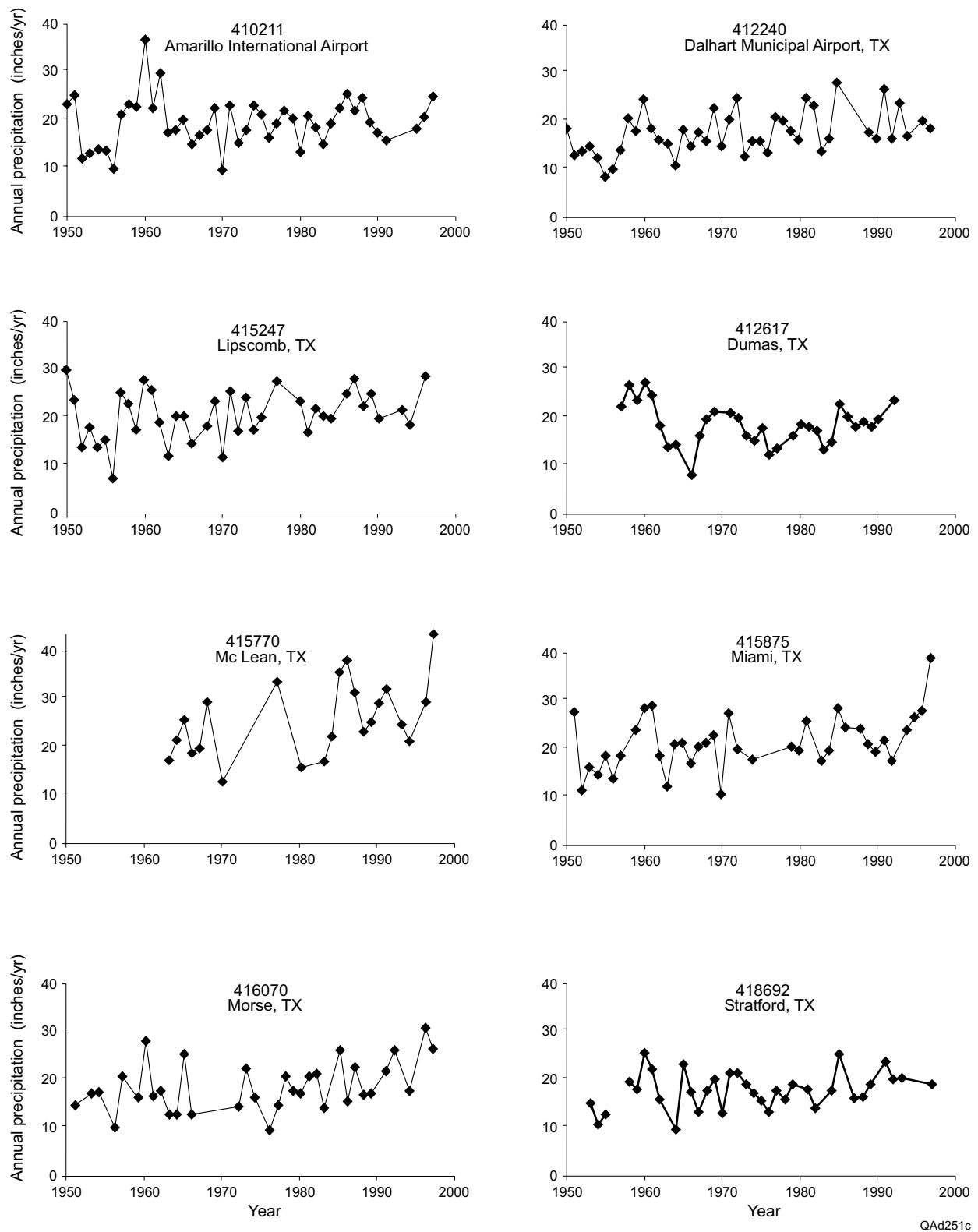


Figure 6. Average annual precipitation and lake-surface evaporation in the study area, showing locations of measurement stations. Long-term precipitation trends for selected Texas stations shown in figure 7.



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Figure 7. Long-term trends in annual precipitation measured at Texas weather stations (station numbers and locations given). Station locations shown in figure 6.

AGE	GEOLOGIC UNIT	
Quaternary	Blackwater Draw Formation	Tahoka Formation Double Lakes Formation Tule Formation
Tertiary	Blanco Formation	Cita Canyon lake beds
	Ogallala Formation	
Cretaceous	Edwards Group	
Triassic	Dockum Group	
Permian	Ochoan Series Guadalupian Series Leonardian Series	

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Figure 8. Stratigraphic nomenclature of Permian and younger strata, including the Ogallala Formation, in the study area.



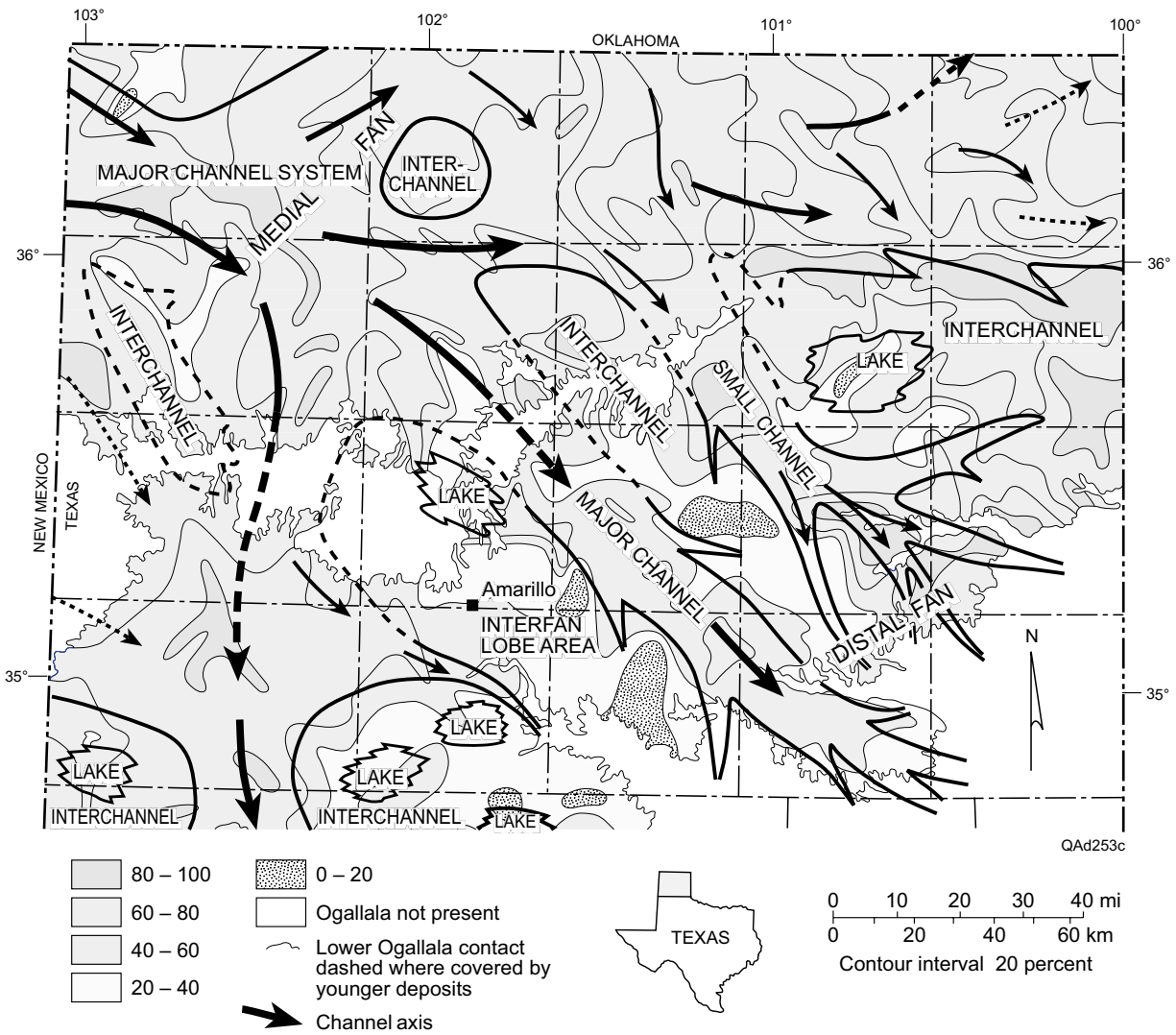
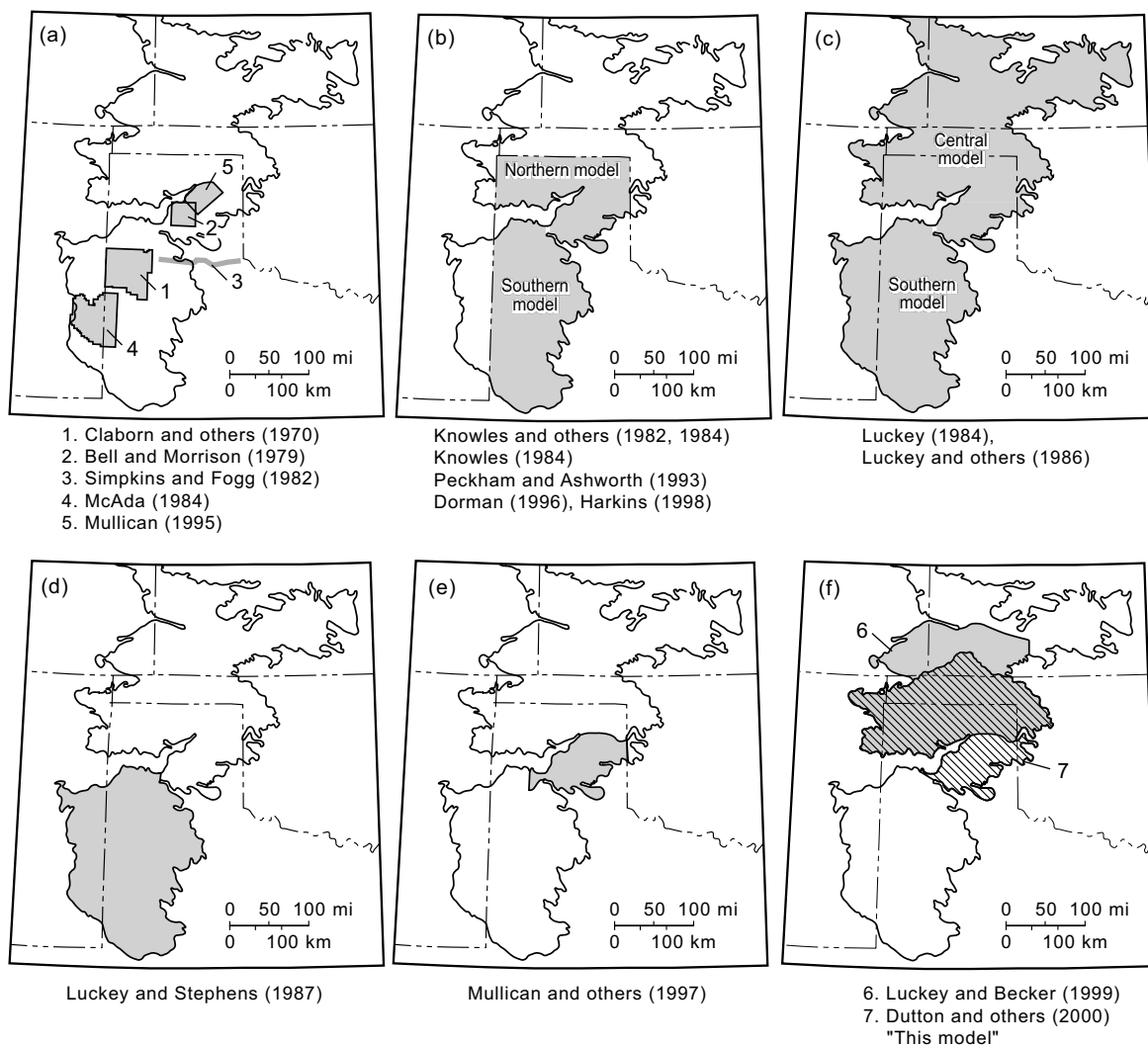


Figure 9. Map of percent sand and gravel in the Ogallala Formation. Modified from Seni (1980).



QA3838(a)c

Figure 10. Location and area of coverage of models of the Ogallala aquifer in Texas. Modified from Dutton and others (2001).