PREFACE

This report was prepared in cooperation with the following agencies, whose assistance in collecting and compiling water-level and water-quality data during 1997 is gratefully acknowledged:

Georgia Department of Natural Resources
Environmental Protection Division
Georgia Geologic Survey
Albany Water, Gas, and Light Commission
City of Brunswick
Glynn County

The report is the culmination of a concerted effort by personnel of the U.S. Geological Survey who collected, compiled, analyzed, verified, and organized the data, and who edited and assembled the report. In addition to the author, who had primary responsibility for ensuring that the information contained herein is accurate and complete, the following individuals contributed substantially to the collection, processing, tabulation, and review of the data:

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Data used in this report may be obtained upon request from the U.S. Geological Survey, Peachtree Business Center, Suite 130, 3039 Amwiler Road, Atlanta, GA 30360-2824.

[*Cover*: Wilson Blue Spring, Dougherty County, Georgia, Upper Floridan aquifer. *Photograph by* Alan M. Cressler]

GROUND-WATER CONDITIONS IN GEORGIA, 1997

By Alan M. Cressler

U.S. GEOLOGICAL SURVEY

Open-File Report 98-172

Prepared in cooperation with the

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
GEORGIA GEOLOGIC SURVEY

ALBANY WATER, GAS, AND LIGHT COMMISSION

CITY OF BRUNSWICK

GLYNN COUNTY

Atlanta, Georgia

1998

U.S. DEPARTMENT OF THE INTERIOR

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CONVERSION FACTORS

Multiply	*by*	*to obtain*
	Length	
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer
	Volume	
gallon per minute (gal/min)	0.06309	liter per second
million gallons per day (Mgal/d)	0.04381	cubic meter per second
	43.81	liter per second

VERTICAL DATUM

Sea Level—In this report, "sea level" refers to the National Geodetic Vertical Datum of 1929—a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Sea Level Datum of 1929."

GROUND-WATER CONDITIONS IN GEORGIA, 1997

By

Alan M. Cressler

ABSTRACT

Ground-water conditions in Georgia during 1997 and for the period of record were evaluated using data from ground-water-level and ground-water-quality monitoring networks. Data for 1997 included in this report are from continuous water-level records from 71 wells and chloride analyses from 14 wells.

In 1997, annual mean ground-water levels in Georgia ranged from 6.2 feet (ft) lower to 5.6 ft higher compared to 1996. Of the 71 wells summarized in this report, 23 wells had annual mean water levels that were higher; 35 wells had annual mean water levels that were lower; and 11 wells had annual mean water levels that were about the same in 1997 as compared to 1996. Data for two wells are incomplete because data collection was discontinued at one well, and the equipment was vandalized at one well.

Record-low daily mean water levels were recorded in six wells tapping the Upper Floridan aquifer, one well tapping the Claiborne aquifer, two wells tapping the Clayton aquifer, and three wells tapping Cretaceous aquifers. These record lows were from 0.2 to 5.6 ft lower than previous record lows.

Chloride concentration in water from the Upper Floridan aquifer in most of coastal Georgia was within drinking-water standards established by the Georgia Department of Natural Resources and the U.S. Environmental Protection Agency. In the Savannah area, chloride concentration has not changed appreciably with time. However, chloride concentration in water from some wells that tap the Floridan aquifer system in the Brunswick area exceeds the drinking-water standard.

INTRODUCTION

Ground-water-level and ground-water-quality data are essential for water assessment and management. Ground-water-level fluctuations and trends can be used to estimate changes in aquifer storage resulting from the effects of ground-water withdrawal and recharge from precipitation. These data can be used to address water-management needs and to evaluate the effects of management and conservation programs.

As part of the ground-water investigations conducted by the U.S. Geological Survey (USGS), in cooperation with the State of Georgia and city and county governments, a Statewide water-level-measurement program was started in 1938. Initially, this program consisted of an observation-well network in the coastal area of Georgia to monitor variations in ground-water storage and quality. Additional wells were later included in areas where data could be used to predict potential water-resource problems.

During 1997, periodic water-level measurements were made in 67 wells, and continuous water-level measurements were obtained from 151 wells. Continuous water-level records were obtained using analog (pen and chart) recorders, digital recorders that record the water level at 30-minute or 60-minute intervals, and electronic data recorders that record the water level at 60-minute intervals. For wells having incomplete water-level record, water levels during periods of missing record may have been higher or lower than recorded water levels. Water samples collected from 23 wells during April and November 1997 were analyzed to determine chloride concentration in the Savannah and Brunswick areas.

Purpose and Scope

This report presents selected ground-water-level and ground-water-quality data for Georgia for calendar year 1997 and for the period of record. Graphs showing ground-water levels in 71 wells are presented. Graphs show chloride concentrations in water collected from 14 wells tapping the Floridan aquifer system in the Savannah and Brunswick areas. The text includes a brief discussion of the aquifers and aquifer systems, ground-water levels, and chloride concentration in water. An extensive list of references of water-resources investigations are presented in "Selected References;" previously published reports on Georgia ground-water conditions are listed in table 1.

Georgia Well-Identification Numbering System

Wells described in this report are given an identification number according to a system based on the USGS index of topographic maps of Georgia. Each 7.5-minute topographic quadrangle in the State has been assigned a three to four-digit number and letter designation (example, 07H, 11AA) beginning at the southwestern corner of the State. Numbers increase sequentially eastward and letters advance alphabetically northward. Quadrangles in the northern part of the State are designated by double letters; AA follows Z, and so forth. The letters "I", "O", "II", and "OO" are not used. Wells inventoried in each quadrangle are numbered consecutively, beginning with 01. Thus, the fourth well inventoried in the 11AA quadrangle is designated 11AA04.

Hydrologic Unit Codes

The hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Datum

Altitude of land-surface datum is reported in feet above sea level. "Sea level" refers to the National Geodetic Vertical Datum of 1929; a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called "Sea Level Datum of 1929."

Table 1. Previous reports on ground-water conditions in Georgia
[USGS, U.S. Geological Survey]

Year of data collection	USGS Open-File Report number	Author(s)	Year of publication
1977	79-213	None listed	1978
1978	79-1290	Clarke, J.S., Hester, W.G., and O'Byrne, M.P.	1979
1979	80-501	Mathews, S.E., Hester, W.G., and O'Byrne, M.P.	1980
1980	81-1068	Mathews, S.E., Hester, W.G., and O'Byrne, M.P.	1981
1981	82-904	Mathews, S.E., Hester, W.G., and McFadden, K.W.	1982
1982	83-678	Stiles, H.R., and Mathews, S.E.	1983
1983	84-605	Clarke, J.S., Peck, M.F., Longsworth, S.A., and McFadden, K.W.	1984
1984	85-331	Clarke, J.S., Longsworth, S.A., McFadden, K.W., and Peck, M.F.	1985
1985	86-304	Clarke, J.S., Joiner, C.N., Longsworth, S.A., McFadden, K.W.,and Peck, M.F.	1986
1986	87-376	Clarke, J.S., Longsworth, S.A., Joiner, C.N., Peck, M.F., McFadden, K.W., and Milby, B.J.	1987
1987	88-323	Joiner, C.N., Reynolds, M.S., Stayton, W.L., and Boucher, F.G.	1988
1988	89-408	Joiner, C.N., Peck, M.F., Reynolds, M.S., and Stayton, W.L.	1989
1989	90-706	Peck, M.F., Joiner, C.N., Clarke, J.S., and Cressler, A.M.	1990
1990	91-486	Milby, B.J., Joiner, C.N., Cressler, A.M., and West, C.T.	1991
1991	92-470	Peck, M.F., Joiner, C.N., and Cressler, A.M.	1992
1992	93-358	Peck, M.F., and Cressler, A.M.	1993
1993	94-118	Joiner, C.N., and Cressler, A.M.	1994
1994	95-302	Cressler, A.M., Jones, L.E., and Joiner, C.N.	1995
1995	96-200	Cressler, A.M.	1996
1996	97-192	Cressler, A.M.	1997

GROUND-WATER RESOURCES

Contrasting geologic features and landforms of the physiographic provinces of Georgia (table 2, fig. 1) result in substantial differences in ground-water conditions from one part of the State to another. These features that make up the framework of the aquifers affect the quantity and quality of the ground water throughout the State.

Surficial aquifers are present in each of the physiographic provinces. In the Piedmont, Blue Ridge, and Valley and Ridge Provinces (fig. 1), the surficial aquifers consist of soil, saprolite, stream alluvium, colluvium, and other surficial deposits. In the Coastal Plain Province, the surficial aquifers consist of intermixed layers of sand, clay, and limestone. The surficial aquifers usually are under water-table (unconfined) conditions and are used for domestic and livestock supplies. These aquifers are semiconfined locally in the coastal area.

In the Piedmont and Blue Ridge Provinces, rocks are complex and consist of structurally deformed metamorphic and igneous rocks. Ground water is transmitted through secondary openings along fractures, foliation, joints, contacts, or other features in the crystalline bedrock.

In the Valley and Ridge Province, ground water is transmitted through both primary and secondary openings in folded and faulted sedimentary and metasedimentary rocks of Paleozoic age.

The most productive aquifers in Georgia are in the Coastal Plain Province in the southern part of the State. The Coastal Plain is underlain by alternating layers of sand, clay, dolomite, and limestone that dip and thicken to the southeast. Coastal Plain aquifers are generally confined except near their northern limits, where they crop out or are near land surface. Aquifers in the Coastal Plain include the upper and lower Brunswick aquifer, the Floridan aquifer system, the Claiborne aquifer, the Clayton aquifer, and the Cretaceous aquifers and aquifer systems.

Table 2. Aquifer and well characteristics in Georgia

[modified from Clarke and Pierce (1984) and Peck and others (1992); ft, feet; gal/min, gallons per minute]

Aquifer name and description	Well characteristics			Remarks
	Depth (ft)	Yield (gal/min)		
	Common range	Common range	May exceed	
Surficial aquifer: Unconsolidated sediments; residuum, generally unconfined	11-72	2-25	25	Primary source of water for domestic and livestock supply in rural areas. Supplemental source of water in coastal Georgia
Upper and lower Brunswick aquifers: Phosphatic and dolomitic quartz sand, generally confined	85-390	10-30	180	Not a major source of water in coastal Georgia, but considered a supplemental water supply to the Upper Floridan aquifer. Most wells are multi-aquifer, tapping the upper and lower Brunswick aquifers and the Upper Floridan aquifer. The lower Brunswick aquifer currently is not monitored (Clarke and others, 1990, p. 26-28).
Floridan aquifer system: Limestone, dolomite, and calcareous sand, generally confined	40-900	1,000-5,000	11,000	Supplies 50 percent of ground water in Georgia. The aquifer system is divided into the Upper and Lower Floridan aquifers. In the Brunswick area, the Upper Floridan aquifer includes two freshwater-bearing zones, the upper water-bearing zone and the lower water-bearing zone. The Lower Floridan aquifer is not considered a major aquifer. In the Brunswick area and in southeastern Georgia, the Lower Floridan aquifer includes the brackish-water zone, the deep freshwater zone, and the Fernandina permeable zone (Krause and Randolph, 1989). The Lower Floridan aquifer extends to more than 2,700 ft and yields high-chloride water below 2,300 ft (Jones and Maslia, 1994).
Claiborne aquifer: Sand and sandy limestone, generally confined	20-450	150-600	1,500	Major source of water for irrigation, industrial, and public-supply use in southwestern Georgia.
Clayton aquifer: Limestone and sand, generally confined	40-800	250-600	2,150	Major source of water for irrigation, industrial, and public-supply use in southwestern Georgia.
Cretaceous aquifers and aquifer systems: Sand and gravel, generally confined	30-750	50-1,200	3,300	Major source of water in east-central Georgia. Supplies water for kaolin mining and processing. Includes the Providence aquifer in southwestern Georgia, and the Dublin, Midville, and Dublin-Midville aquifer systems in east-central Georgia.
Paleozoic-rock aquifers: Sandstone, limestone, and dolostone	15-2,100	1-50	3,500	Not laterally extensive. Limestone and dolostone aquifers are most productive. Storage is in regolith, primary openings, and secondary fractures and solution openings in rock. Springs in limestone and dolostone aquifers discharge at rates of as much as 5,000 gal/min. Sinkholes may form in areas of intensive pumping.
Crystalline-rock aquifers: Granite, gneiss, schist, and quartzite	40-600	1-25	500	Not laterally extensive. Storage is in regolith and fractures in rock. Hydrogeology of crystalline-rock aquifers is not well understood.

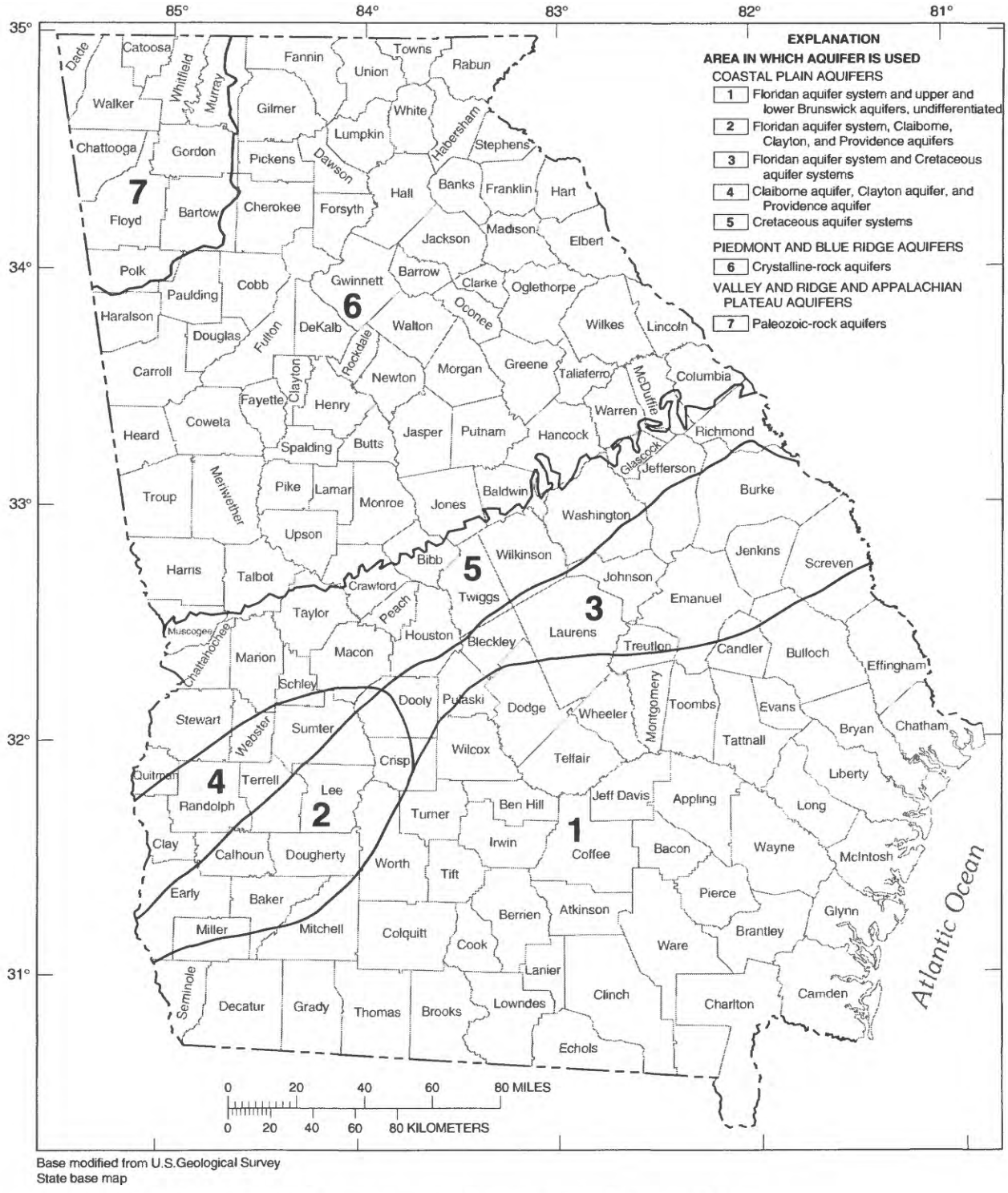


Figure 1. Major aquifers in Georgia (modified from Peck and others, 1992).

GROUND-WATER LEVELS

Short-term fluctuation and long-term trends in ground-water levels result from variations in recharge and discharge. Recharge varies in response to precipitation and surface-water infiltration into an aquifer. Discharge occurs as natural flow from an aquifer to streams and springs, as evapotranspiration, and as withdrawal from wells.

Discussions of the ground-water levels in Georgia are grouped by aquifer and subdivided into areas and subareas in which wells had similar water-level fluctuations and trends. For each section, 1997 annual mean water levels are compared to 1996 annual mean water levels (Cressler, 1997). Also given are all occurrences of record-low or record-high water levels in 1997. In these discussions, water-level differences are reported to the nearest 0.1 ft and the phrase "about the same" is used for differences less than or equal to 0.1 ft.

Water-level fluctuations in 1997 are shown for 71 continuously monitored wells (table 3, fig. 2), which are considered to be representative of ground-water levels throughout the State. For each well, well-site information is listed, monthly mean water levels are shown in hydrographs for the period of record, daily mean water levels are shown in hydrographs for 1997, and monthly and annual water-level statistics (minimum, mean, and maximum daily mean water levels) are tabulated for 1997. Monthly statistics are not computed for months having less than 25 days of record. Extreme water levels for the period of record listed in the well site information and tabulated water-level statistics are reported to the nearest 0.01 ft, reflecting the accuracy of the recorders used. Land-surface data generally are determined from the best available topographic map, and are accurate to about one-half the contour interval. Some land-surface data were determined by surveying methods or GPS and are more accurate. In this report, an extreme water level refers to the lowest or highest daily mean water level for the period of record of a particular well. Thus, any instantaneous water-level measurement on a given day may be lower or higher than the extreme water level reported in the text, the daily mean water level shown on the hydrograph, or the minimum or maximum values tabulated.

Continuous records from the 71 wells indicate that annual mean ground-water levels were from 6.2 ft lower to 5.6 ft higher in 1997 compared to 1996. The annual mean water level was higher in 23 wells, lower in 35 wells, and about the same in 11 wells. Record-high daily mean water levels that were 0.2 ft higher than the previous record highs were measured in 2 wells; one in the northern area surficial aquifer and one on the southwestern area surficial aquifer. Record-low daily mean water levels that were from 0.2 to 5.6 ft lower than the previous record lows were measured in 12 wells; six wells tapping the Upper Floridan aquifer, one well tapping the Claiborne aquifer, two wells tapping the Clayton aquifer, and three wells tapping Cretaceous aquifers.

Table 3. Observation wells for which hydrographs are included in this report

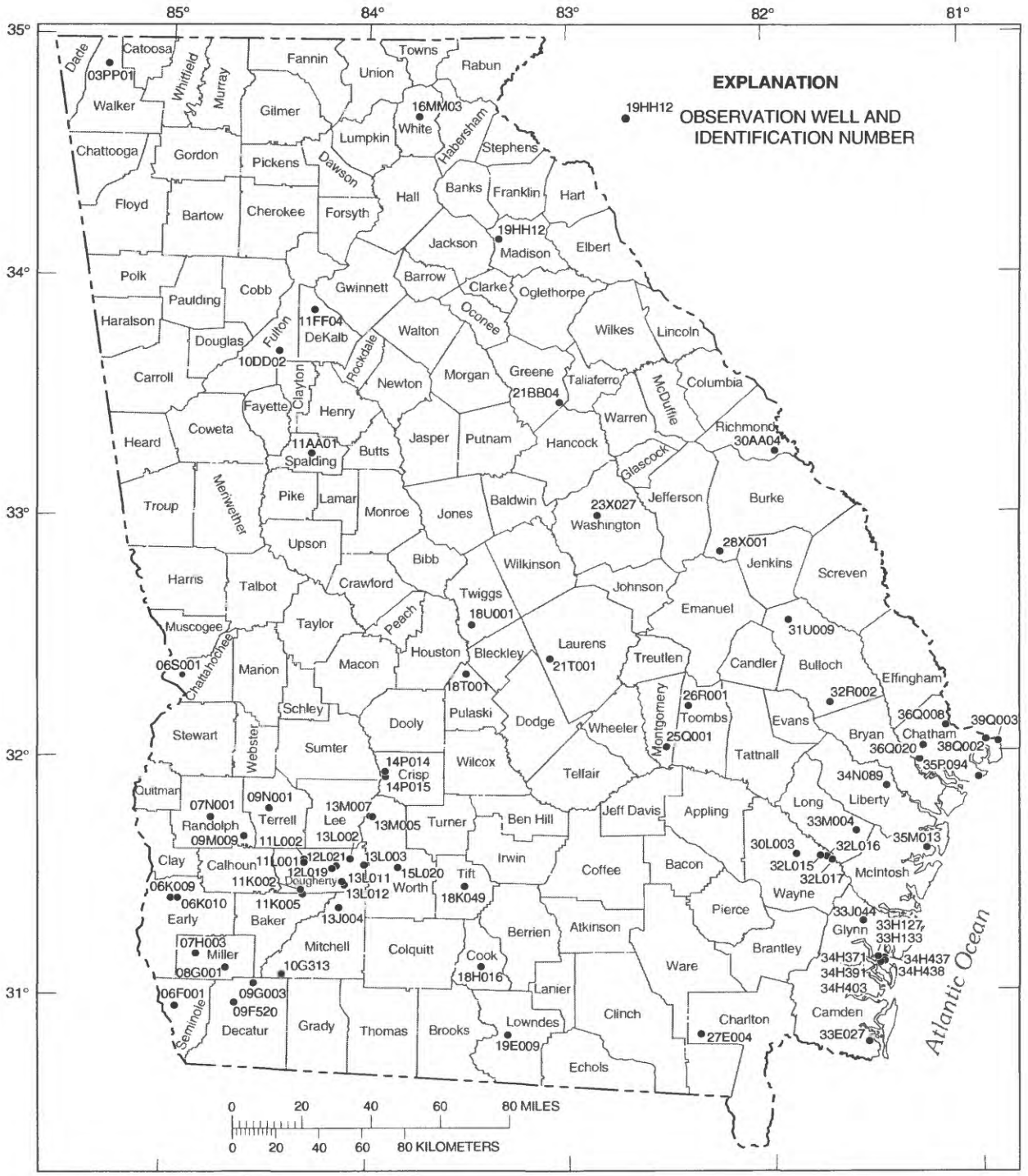
[GGS, Georgia Geologic Survey; USGS, U.S. Geological Survey; UGA, University of Georgia.]

County	Aquifer	Well Identification number	Site name	Page
Bulloch	Upper Floridan	32R002	GGS, Bulloch South, test well 1	45
Bulloch	upper Brunswick	31U009	GGS, Hopeulikit, test well 2	21
Burke	Midville aquifer system	28X001	USGS, Midville, test well 1	83
Camden	Upper Floridan	33E027	U.S. Navy, Kings Bay, test well 1	55
Charlton	Upper Floridan	27E004	USGS, test well OK-9	56
Chatham	surficial	35P094	UGA, Bamboo Farm	16
Chatham	Upper Floridan	36Q008	Layne-Atlantic Co.	41
Chatham	Upper Floridan	36Q020	H.J. Morrison	42
Chatham	surficial	37P116	GGS, Skidaway Institute, test well 4	17
Chatham	Upper Floridan	38Q002	National Park Service, test well 6	43
Chatham	Upper Floridan	39Q003	USGS, test well 7	44
Chattahoochee	Cretaceous formations	06S001	U.S. Army, Fort Benning	79
Cook	Upper Floridan	18H016	USGS, Adel test well	36
Crisp	Clayton	14P014	GGS, Veterans Memorial State Park, test well 1	76
Crisp	Claiborne	14P015	GGS, Veterans Memorial State Park, test well 2	68
Decatur	Upper Floridan	09F520	Graham Bolton	27
Decatur	surficial	09G003	USGS, test well DP-6	15
DeKalb	crystalline rock	11FF04	USGS, test well 5	91

Table 3. Observation wells for which hydrographs are included in this report—Continued

[GGS, Georgia Geologic Survey; USGS, U.S. Geological Survey; UGA, University of Georgia.]

County	Aquifer	Well Identification number	Site name	Page
Dougherty	Claiborne	11K002	USGS, test well 11	63
Dougherty	Clayton	11K005	USGS, test well 12	75
Dougherty	Claiborne	11L001	USGS, test well 4	64
Dougherty	Clayton	11L002	GGS, Albany Nursery	73
Dougherty	Claiborne	12L019	USGS, test well 5	65
Dougherty	Providence	12L021	USGS, test well 10	80
Dougherty	Clayton	13L002	Albany Water, Gas, and Light, Turner City 2	74
Dougherty	Upper Floridan	13L003	City of Albany and Dougherty County	32
Dougherty	Claiborne	13L011	USGS, test well 2	66
Dougherty	Upper Floridan	13L012	USGS, test well 3	30
Early	Clayton	06K009	GGS, Kolomoki Mounds State Park, test well 1	70
Early	Claiborne	06K010	GGS, Kolomoki Mounds State Park, test well 2	61
Fulton	crystalline rock	10DD02	U.S. Army, Fort McPherson	89
Glynn	Upper Floridan	33H127	USGS, test well 3	51
Glynn	Upper Floridan	33H133	USGS, test well 6	53
Glynn	Lower Floridan	33J044	Georgia Pacific Company, USGS, test well 27	59
Glynn	Upper Floridan	34H371	USGS, test well 11	54
Glynn	Lower Floridan	34H391	USGS, test well 16	58
Glynn	Upper Floridan	34H403	USGS, test well 24	52
Glynn	upper Brunswick	34H437	GGS, Coffin Park, test well 2	23
Glynn	surficial	34H438	GGS, Coffin Park, test well 3	18
Greene	crystalline rock	21BB04	Charles Veazey	92
Laurens	Upper Floridan	21T001	Danny Hogan	38
Liberty	Upper Floridan	34N089	USGS, test well 1	46
Long	Upper Floridan	33M004	USGS, test well 3	50
Lowndes	Upper Floridan	19E009	City of Valdosta	37
Madison	crystalline rock	19HH12	Meadowlake Estates	90
McIntosh	Upper Floridan	35M013	U.S. Fish and Wildlife Service	47
Miller	surficial	07H003	USGS, test well DP-3	14
Miller	Upper Floridan	08G001	Viercocken	28
Mitchell	Upper Floridan	10G313	Harvey Meinders	31
Mitchell	Upper Floridan	13J004	Aurora Dairy	33
Montgomery	Upper Floridan	25Q001	Montgomery County Board of Education	39
Pulaski	Midville aquifer system	18T001	USGS, Arrowhead, test well 1	82
Randolph	Clayton	07N001	City of Cuthbert	71
Randolph	Claiborne	09M009	C.T. Martin, test well 1	62
Richmond	Dublin-Midville aquifer system	30AA04	Richmond County water system, USGS, McBean 2	84
Seminole	Upper Floridan	06F001	Roddenbery Company Farms, test well 1	29
Spalding	surficial	11AA01	UGA, Experiment Station	12
Terrell	Clayton	09N001	Bill Newman	72
Tift	Upper Floridan	18K049	USGS, test well 1	35
Toombs	Upper Floridan	26R001	City of Vidalia, well 2	40
Twiggs	Dublin aquifer system	18U001	Georgia Kraft, USGS, test well 3	81
Walker	Paleozoic rock	03PP01	National Park Service, Chickamauga Battlefield Park	87
Washington	Dublin-Midville aquifer system	23X027	City of Sandersville, well 8	85
Wayne	Upper Floridan	30L003	City of Jesup Housing Authority	48
Wayne	Upper Floridan	32L015	GGS, Gardi, test well 1	49
Wayne	upper Brunswick	32L016	GGS, Gardi, test well 2	22
Wayne	surficial	32L017	GGS, Gardi, test well 3	19
White	crystalline rock	16MM03	Unicoi State Park, well 4	93
Worth	Claiborne	13M005	USGS, test well DP-7	67
Worth	surficial	13M007	USGS, test well DP-9	13
Worth	Upper Floridan	15L020	City of Sylvester	34



Base modified from U.S.Geological Survey
State base map

Figure 2. Locations of observation wells for which hydrographs are included in this report.

Table 4. Observation wells for which hydrographs are included in this report, by well identification number
[USGS, U.S. Geological Survey]

Well identification number	USGS Site identification number	Page number	Well identification number	USGS Site identification number	Page number	Well identification number	USGS Site identification number	Page number
03PP01	345403085160001	87	13L003	313748084002901	32	31U009	323123081511602	21
06F001	305356084534601	29	13L011	313105084064301	66	32L015	313253081433502	49
06K009	312827084551501	70	13L012	313105084064302	30	32L016	313253081433503	22
06K010	312827084551503	61	13M005	314330084005401	67	32L017	313253081433504	19
06S001	322036084590301	79	13M007	314330084005403	13	32R002	321240081411501	45
07H003	311009084495503	14	14P014	315731083542301	76	33E027	304756081311101	55
07N001	314602084473701	71	14P015	315731083542302	68	33H127	311007081301701	51
08G001	310651084404501	28	15L020	313146083491601	34	33H133	311007081301702	53
09F520	305736084355801	27	16MM03	344314083433201	93	33J044	311633081324001	59
09G003	310428084310503	15	18H016	310813083260301	36	33M004	313845081361701	50
09M009	313953084361201	62	18K049	312712082593301	35	34H371	310818081293701	54
09N001	314611084310301	72	18T001	322245083290101	82	34H391	310818081294201	58
10DD02	334207084254801	89	18U001	323302083263401	81	34H403	310822081294201	52
10G313	310507084262201	31	19E009	304949083165301	37	34H437	310901081284402	23
11AA01	331507084171801	12	19HH12	341020083201701	90	34H438	310901081284403	18
11FF04	335517084164001	91	21BB04	332808083010201	92	34N089	315214081235301	46
11K002	312654084210102	63	21T001	322652083033001	38	35M013	313823081154201	47
11K005	312654084210103	75	23X027	325848082480901	85	35P094	315950081161201	16
11L001	313530084203202	64	25Q001	320226082301101	39	36Q008	320530081085001	41
11L002	313532084203501	73	26R001	321302082243601	40	36Q020	320021081124801	42
12L019	313534084103001	65	27E004	304942082213801	56	37P116	315906081011204	17
12L021	313534084103003	80	28X001	325232082131501	83	38Q002	320202080541201	43
13J004	312127084065801	33	30AA04	331711081573701	84	39Q003	320122080510204	44
13L002	313554084062501	74	30L003	313701081543501	48			

Surficial Aquifers

Water-level fluctuations in surficial aquifers were monitored in 19 wells in 1997 and data from 8 of these wells (fig. 3) are summarized in this report. Water-level fluctuations in surficial aquifers are mainly caused by variations in precipitation, evapotranspiration, and natural drainage. In addition, the water level in the surficial aquifer in the Brunswick area is influenced by nearby pumping, precipitation, and tidal fluctuations (Clarke and others, 1990, p. 24). Water levels in surficial aquifers generally rise rapidly during wet periods and decline slowly during dry periods. Prolonged droughts may cause water levels to decline below pump intakes in shallow wells, particularly those located on hilltops and steep slopes, resulting in temporary well failures. Usually, well yields are restored by precipitation.

Northern area

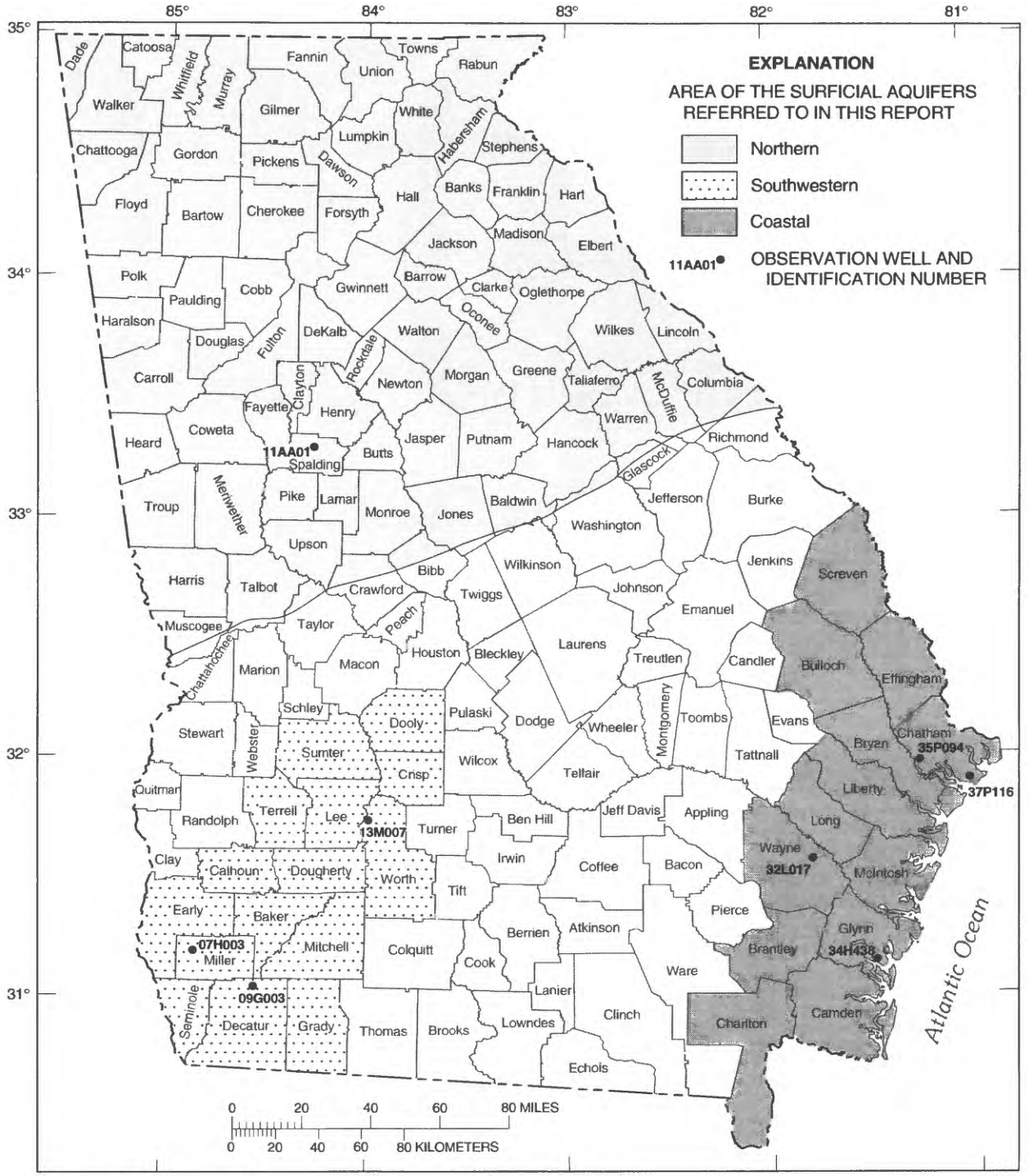
Water levels in the surficial aquifers in the northern part of Georgia were monitored in four wells in 1997. Data for one of these wells 11AA01 at Griffin, Spalding County is shown in figure 4. The annual mean water level in the reported well was 1.6 ft higher in 1997 than in 1996. A new record-high daily mean water level was recorded in well 11AA01 (fig. 4) that was 0.2 ft higher than the previous record high.

Southwestern area

Water levels were monitored in four wells that tap the surficial aquifer in the southwestern area in 1997. Data for three of the wells are shown in figures 5-7. Annual mean water levels ranged from 1.6 to 2.8 ft higher in the reported wells in 1997 than in 1996. A new record-high daily mean water level was recorded in well 13M007 (fig. 5) that was 0.2 ft higher than the previous record high.

Coastal area

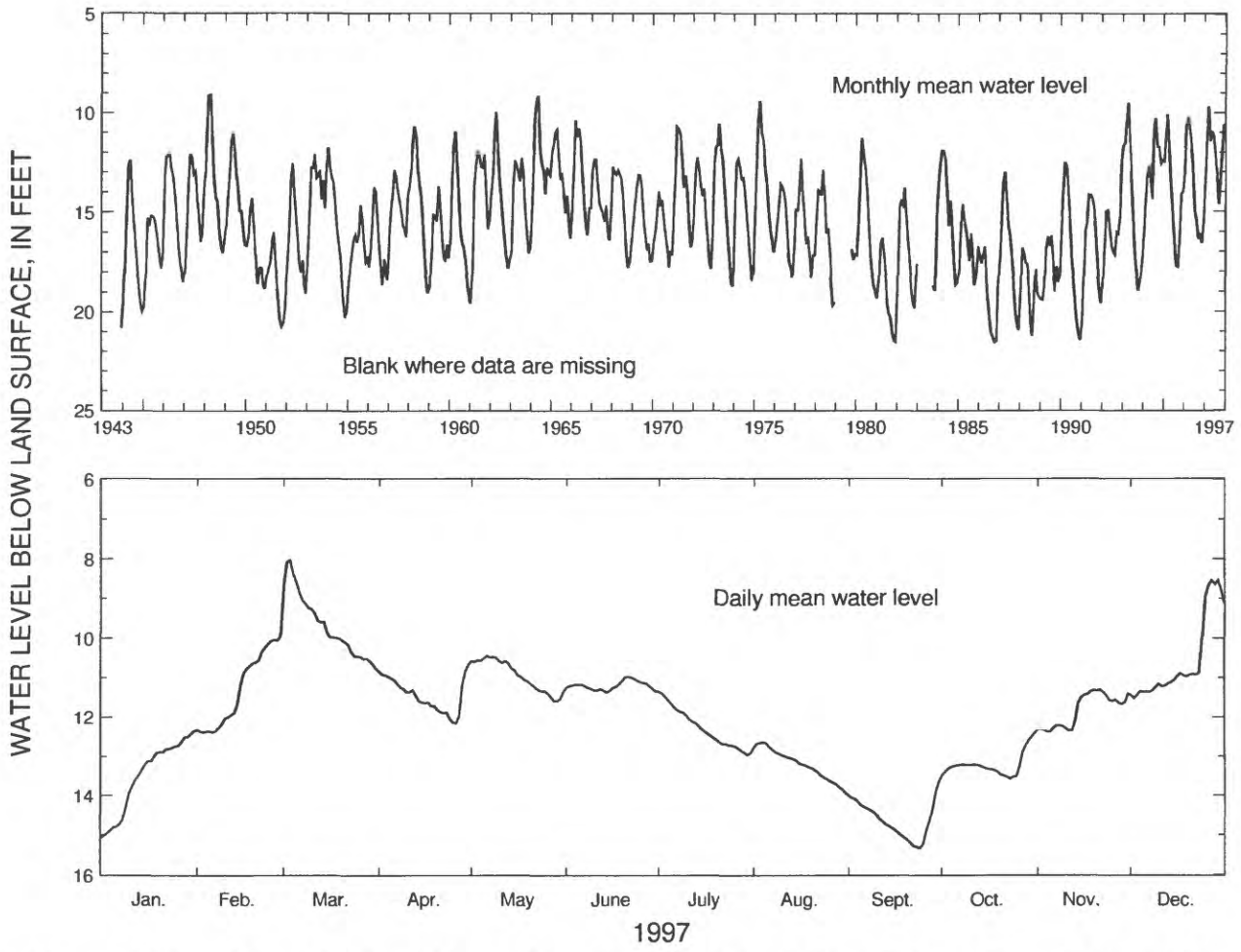
Water levels in surficial aquifers in the coastal area were monitored in eleven wells in 1997 and data for four of the wells are shown in figures 8-11. Annual mean water levels ranged from 0.6 ft lower to 0.2 ft higher in the reported wells in 1997 than in 1996.



Base modified from U.S.Geological Survey
State base map

Figure 3. Locations of observation wells completed in surficial aquifers.

IDENTIFICATION NUMBER.—11AA01.
LOCATION.—Lat 33°15′54″, long 84°16′56″, Hydrologic Unit 03070103.
SITE NAME.—University of Georgia, Experiment Station.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Surficial (residuum).
WELL CHARACTERISTICS.—Dug unused supply well, size 4 x 4 ft, depth 30 ft, cased to 30 ft, open end.
DATUM.—Altitude of land-surface datum is 950 ft.
REMARKS.—None.
PERIOD OF RECORD.—October 1943 to current year. Continuous record since October 1943.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 8.04 ft below land-surface datum, March 3, 1997; lowest, 21.82 ft below land-surface datum, November 18-19, 1986.

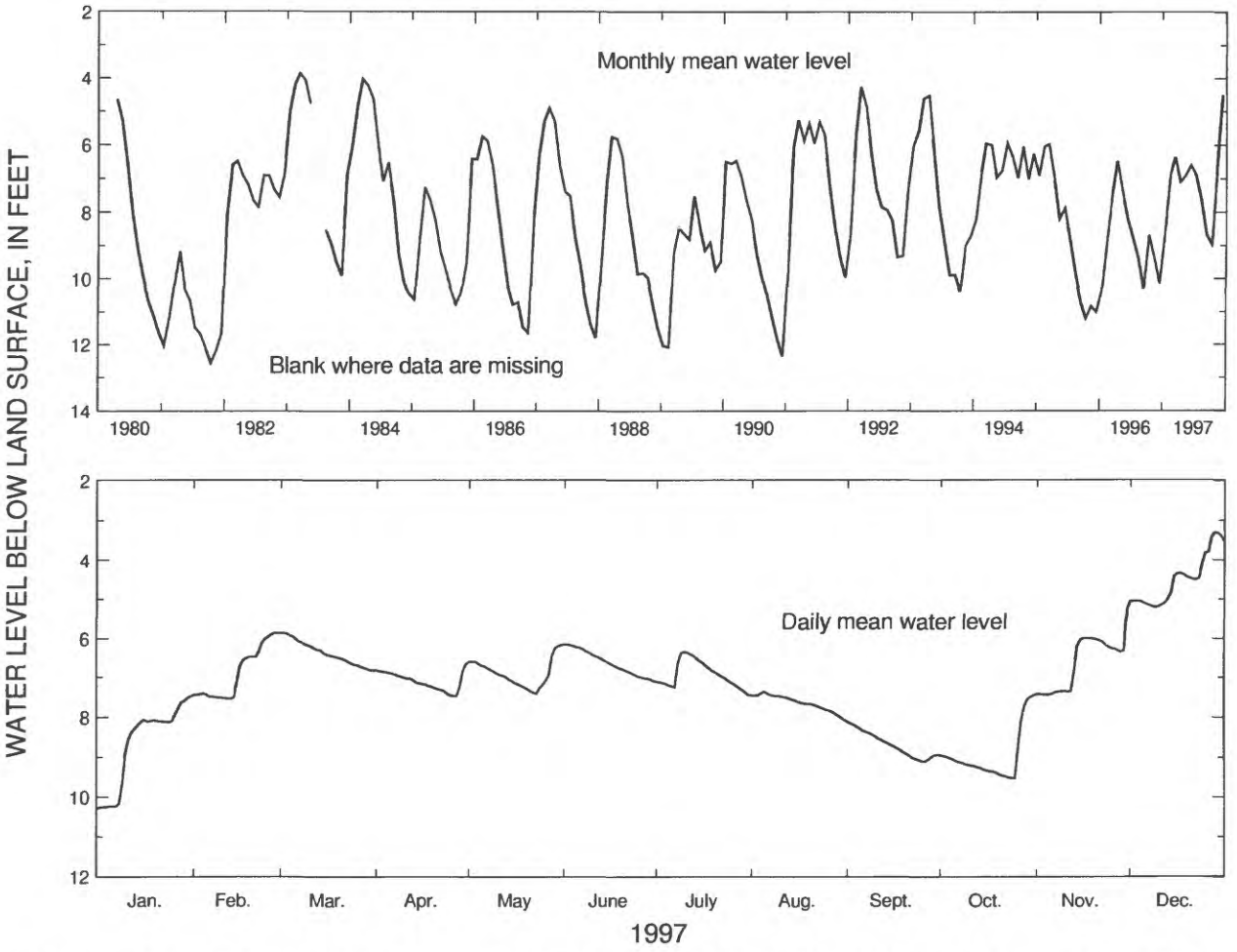


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	12.35	9.96	8.04	10.67	10.44	10.97	11.35	12.63	13.65	12.40	11.30	8.54
MEAN	13.51	11.31	9.69	11.44	10.94	11.19	12.27	13.20	14.63	13.23	11.83	10.58
LOW	15.07	12.38	10.77	12.15	11.59	11.37	12.96	13.94	15.33	13.58	12.37	11.52

SUMMARY FOR 1997 HIGH 8.04 (Mar. 3, 1997) MEAN 11.99 LOW 15.33 (Sept. 24, 1997)

Figure 4. Water level in observation well 11AA01, Spalding County.

IDENTIFICATION NUMBER.—13M007.
LOCATION.—Lat 31°43′30″, long 84°00′54″, Hydrologic Unit 03130006.
SITE NAME.—U.S. Geological Survey, test well DP-9.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Surficial (residuum).
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 25 ft, cased to 10 ft, open hole.
DATUM.—Altitude of land-surface datum is 230 ft.
REMARKS.—None.
PERIOD OF RECORD.—April 1980 to current year. Continuous record since April 1980.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 3.31 ft below land-surface datum, December 28, 1997; lowest, 13.03 ft below land-surface datum, October 22, 1981.

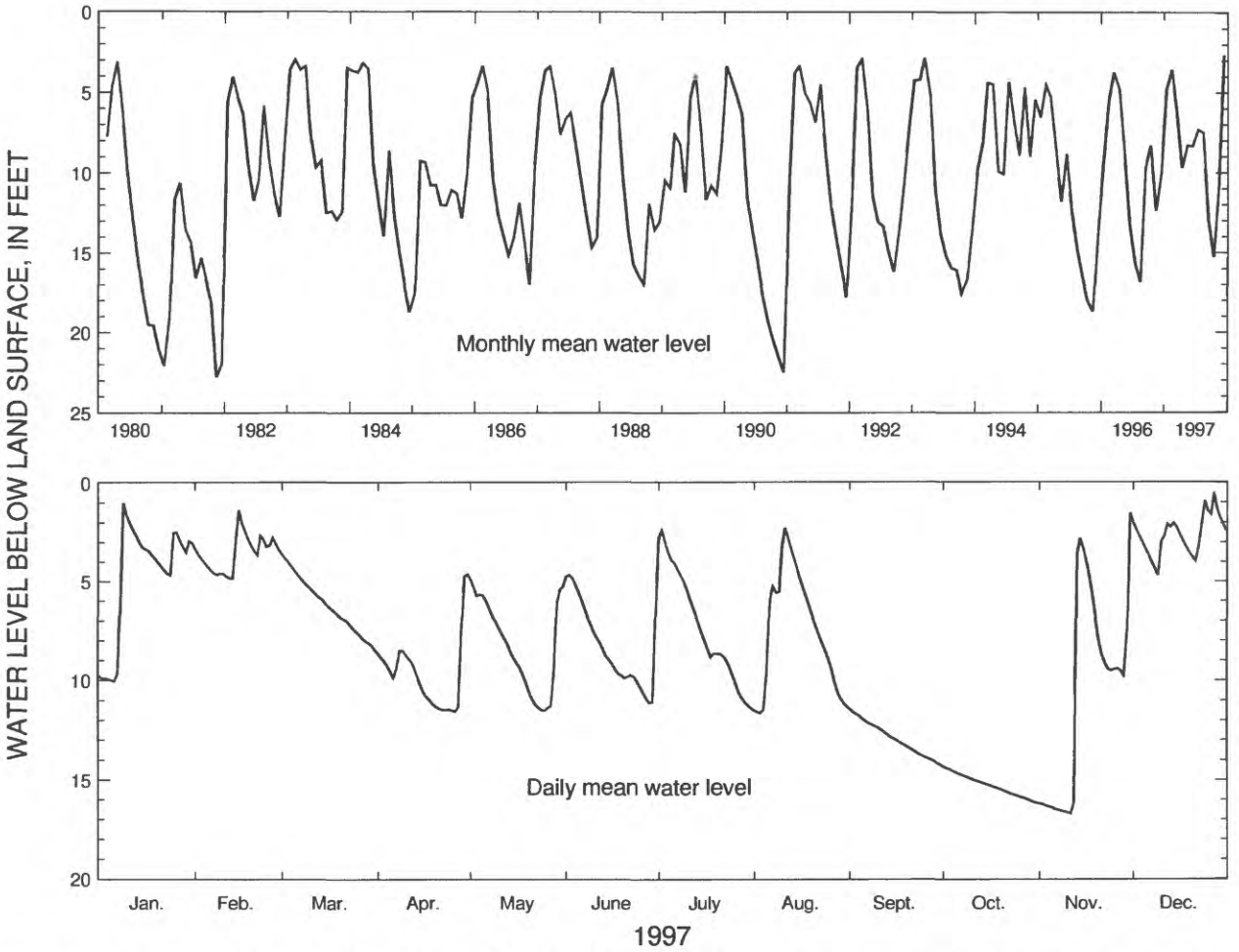


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	7.47	5.86	5.86	6.65	6.16	6.14	6.33	7.36	8.11	7.45	5.26	3.31
MEAN	8.67	6.89	6.36	7.09	6.90	6.60	6.91	7.63	8.68	8.98	6.63	4.50
LOW	10.28	7.53	6.81	7.46	7.40	7.08	7.44	8.06	9.11	9.53	7.43	5.20

SUMMARY FOR 1997 HIGH 3.31 (Dec. 28, 1997) MEAN 7.16 LOW 10.28 (Jan. 1, 1997)

Figure 5. Water level in observation well 13M007, Worth County.

IDENTIFICATION NUMBER.—07H003.
LOCATION.—Lat 31°10′08″, long 84°49′54″, Hydrologic Unit 03130010.
SITE NAME.—U.S. Geological Survey, test well DP-3.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Surficial (residuum).
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 40 ft, perforated casing 30 to 40 ft.
DATUM.—Altitude of land-surface datum is 180 ft.
REMARKS.—None.
PERIOD OF RECORD.—February 1980 to current year. Continuous record since February 1980.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 0.25 ft below land-surface datum, January 30, 1991; lowest, 24.19 ft below land-surface datum, November 10, 1981.

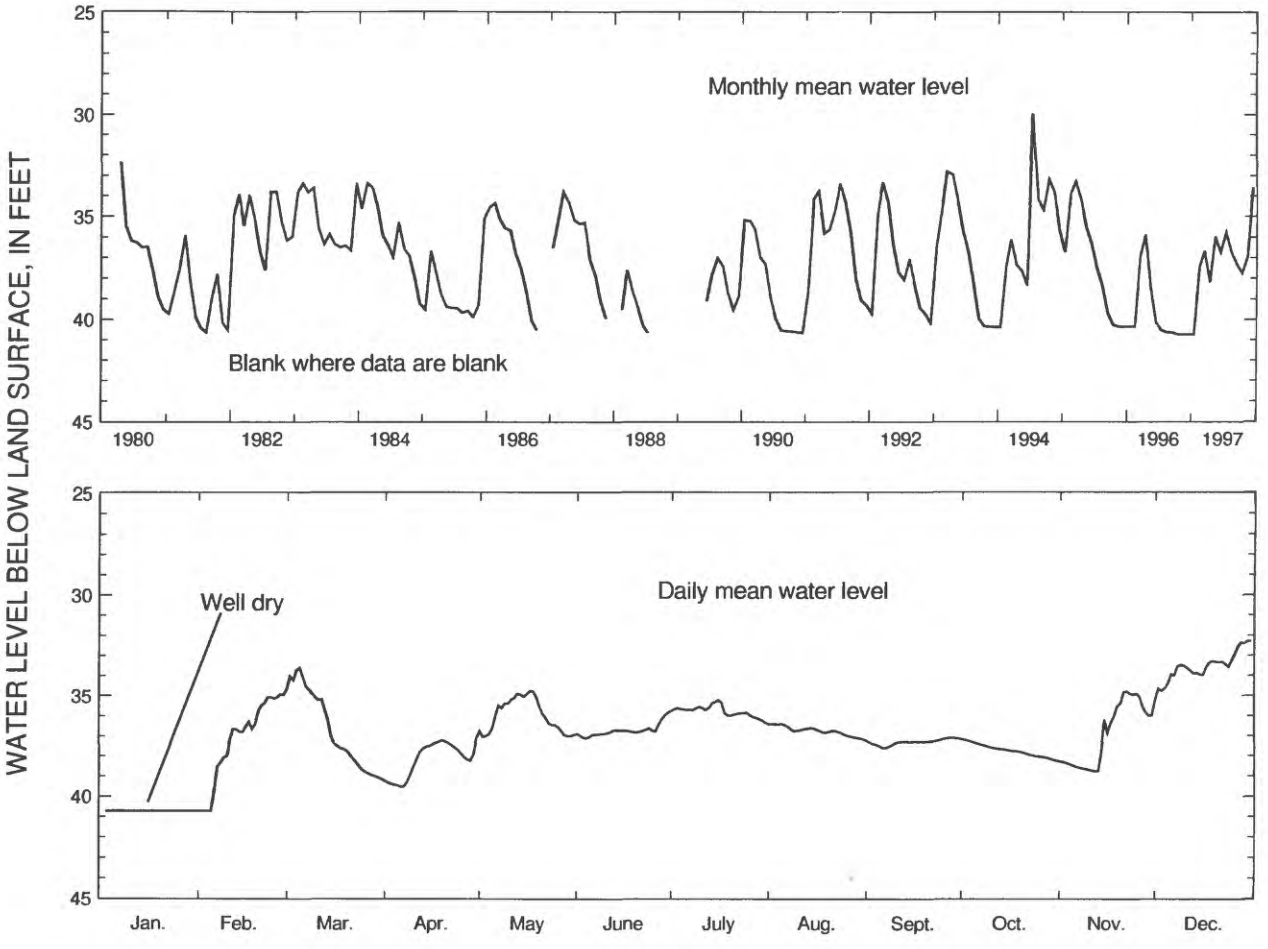


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	1.01	1.37	3.62	4.64	4.92	4.67	2.42	2.29	11.44	14.32	1.53	0.50
MEAN	4.78	3.56	6.19	9.67	8.27	8.30	7.29	7.48	12.92	15.27	10.67	2.64
LOW	10.05	4.86	8.46	11.57	11.52	11.12	11.40	11.65	14.23	16.16	16.70	4.70

SUMMARY FOR 1997 HIGH 0.50 (Dec. 27, 1997) MEAN 8.10 LOW 16.70 (Nov. 11, 1997)

Figure 6. Water level in observation well 07H003, Miller County.

IDENTIFICATION NUMBER.—09G003.
LOCATION.—Lat 31°04′28″, long 84°31′05″, Hydrologic Unit 03130008.
SITE NAME.—U.S. Geological Survey, test well DP-6.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Surficial (sediments of Eocene age).
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 41 ft, cased to 30 ft, open hole.
DATUM.—Altitude of land-surface datum is 145 ft.
REMARKS.—Well can go dry during periods of decreased rainfall. Well dry, January 1 to February 5, 1997.
PERIOD OF RECORD.—February 1980 to current year. Continuous record since February 1980.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 20.56 ft below land-surface datum, July 16, 1994; lowest, well goes dry.

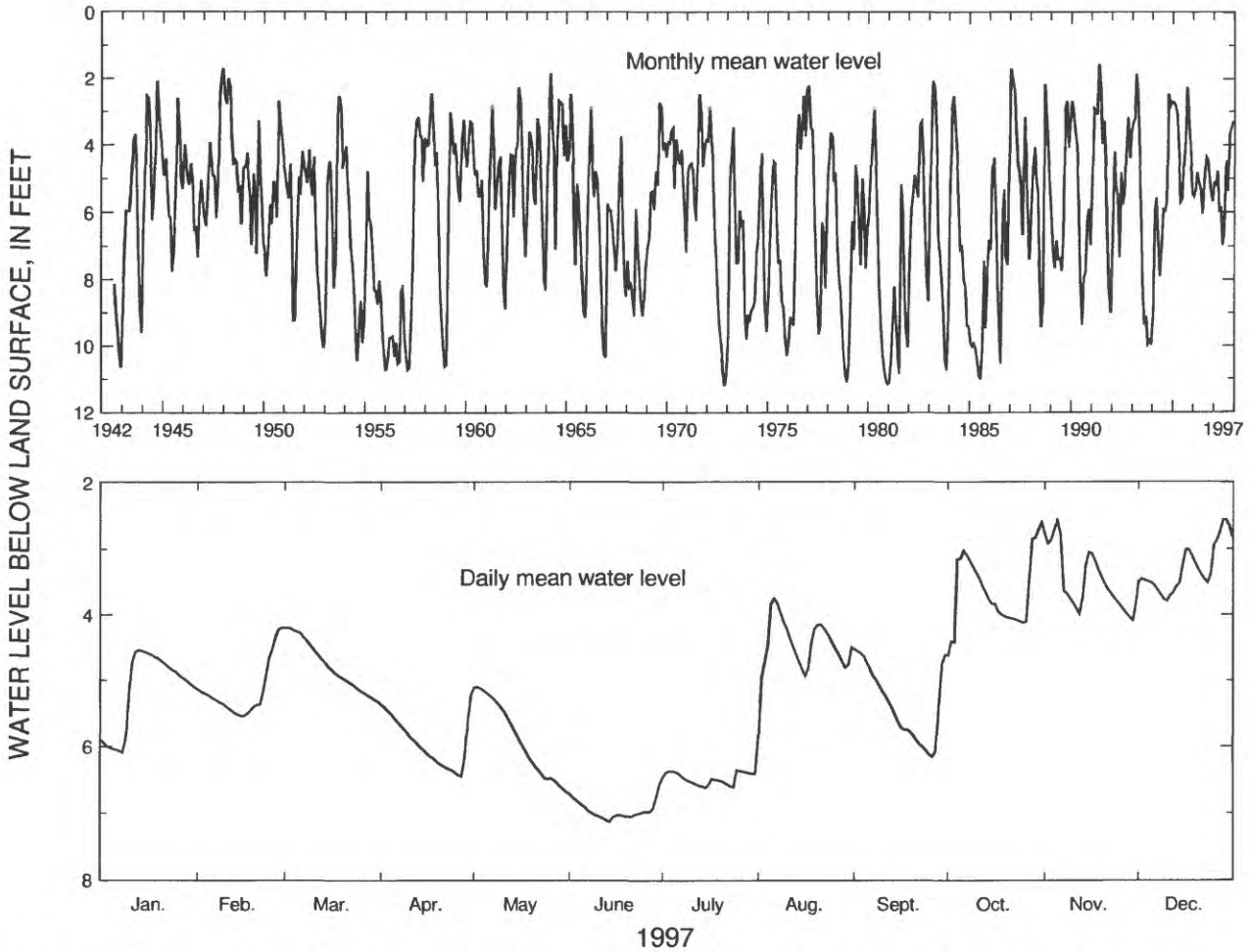


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	40.73	34.93	33.62	37.11	34.76	35.84	35.22	36.40	37.09	37.16	34.80	32.28
MEAN	40.73	37.26	36.66	38.18	35.96	36.74	35.77	36.74	37.31	37.73	36.94	33.57
LOW	40.73	40.73	39.16	39.53	37.04	37.11	36.34	37.16	37.60	38.25	38.77	35.22

SUMMARY FOR 1997 HIGH 32.28 (Dec. 31, 1997) MEAN 36.96 LOW 40.73 (Jan. 1-Feb. 5, 1997)

Figure 7. Water level in observation well 09G003, Decatur County.

IDENTIFICATION NUMBER.—35P094.
LOCATION.—Lat 31°59'50", long 81°16'12", Hydrologic Unit 03060204.
SITE NAME.—University of Georgia, Bamboo Farm.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Surficial (sand of Holocene and Pleistocene age).
WELL CHARACTERISTICS.—Bored observation well, diameter 30 in., depth 15 ft, cased to 15 ft, open end.
DATUM.—Altitude of land-surface datum is 18.67 ft.
REMARKS.—Responds quickly to precipitation.
PERIOD OF RECORD.—August 1942 to current year. Continuous record since August 1942.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 0.05 ft below land-surface datum, September 26, 1953; lowest, 12.28 ft below land-surface datum, November 30, 1972.

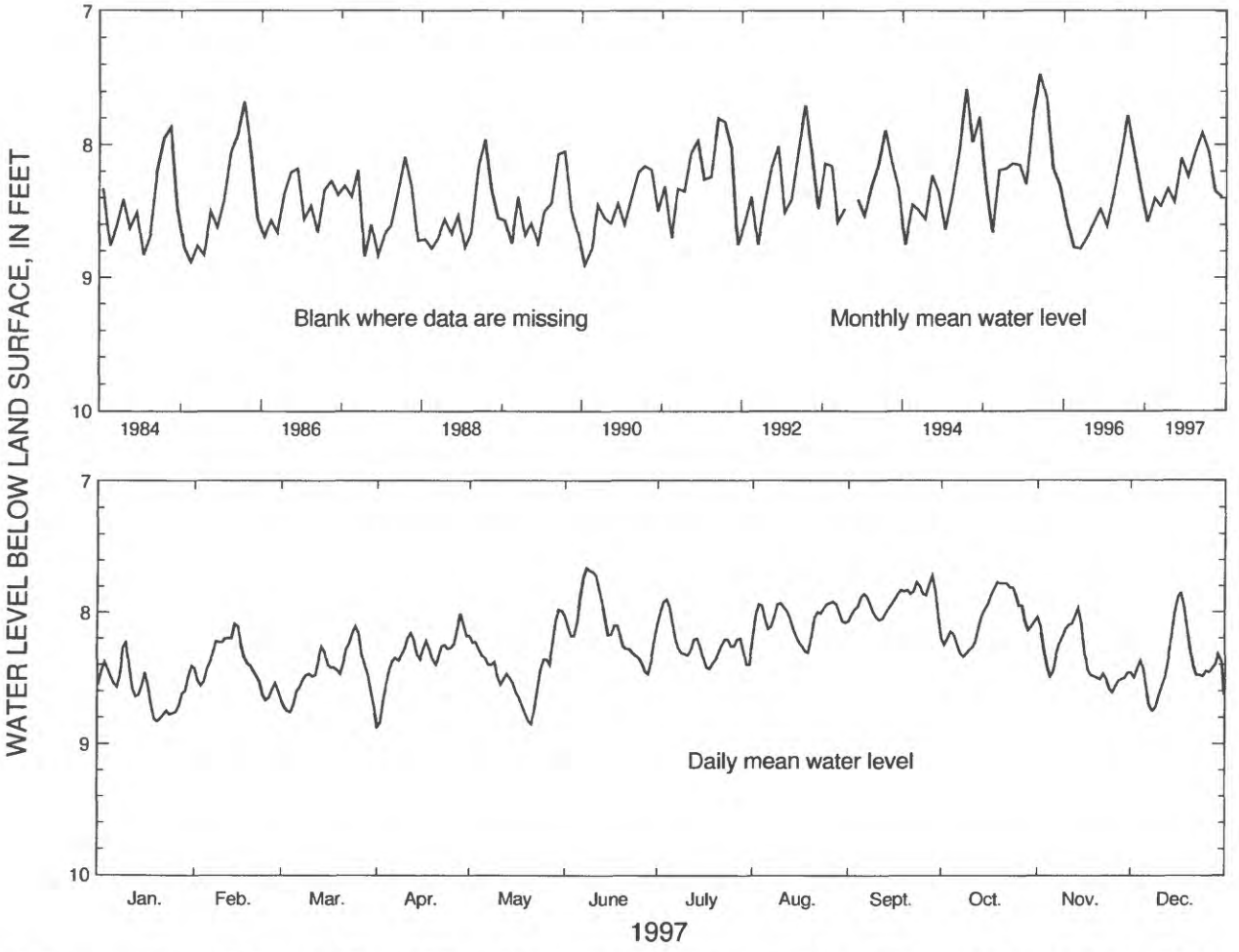


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	4.54	4.20	4.20	5.22	5.10	6.58	6.36	3.75	4.53	2.60	2.57	2.55
MEAN	5.14	5.17	4.77	5.94	5.89	6.96	6.48	4.47	5.37	3.64	3.48	3.29
LOW	6.09	5.55	5.33	6.45	6.68	7.13	6.62	5.82	6.16	4.63	4.09	3.79

SUMMARY FOR 1997 HIGH 2.55 (Dec. 28, 1997) MEAN 5.05 LOW 7.13 (June 14, 1997)

Figure 8. Water level in observation well 35P094, Chatham County.

IDENTIFICATION NUMBER.—37P116.
LOCATION.—Lat 31°59′06″, long 81°01′12″, Hydrologic Unit 03060204.
SITE NAME.—Georgia Geologic Survey, Skidaway Institute, test well 4.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Surficial (sand of Miocene and post-Miocene age).
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 85 ft, cased to 70 ft, screen to 85 ft.
DATUM.—Altitude of land-surface datum is 10 ft.
REMARKS.—None.
PERIOD OF RECORD.—January 1984 to current year. Continuous record since January 1984.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 6.93 ft below land-surface datum, October 13-14, 1994; lowest, 9.27 ft below land-surface datum, March 17, 1993.

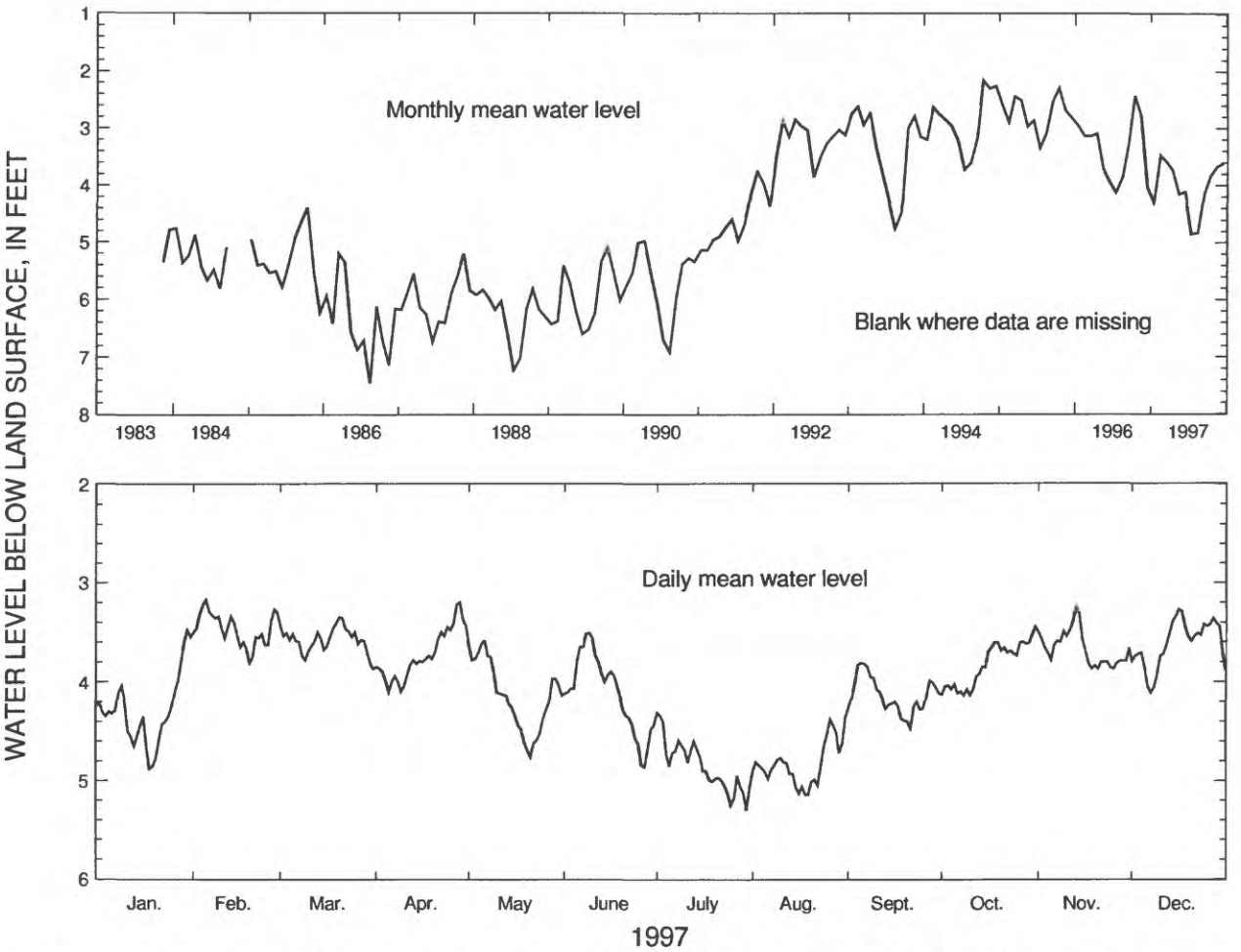


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	8.23	8.09	8.11	8.01	7.98	7.66	7.90	7.92	7.72	7.77	7.97	7.85
MEAN	8.58	8.40	8.46	8.33	8.43	8.10	8.24	8.06	7.91	8.05	8.35	8.39
LOW	8.83	8.67	8.76	8.87	8.85	8.47	8.43	8.31	8.07	8.34	8.61	8.75

SUMMARY FOR 1997 HIGH 7.66 (June 8, 1997) MEAN 8.28 LOW 8.87 (Apr. 1, 1997)

Figure 9. Water level in observation well 37P116, Chatham County.

IDENTIFICATION NUMBER.—34H438.
LOCATION.—Lat 31°09'01", long 81°28'44", Hydrologic Unit 03070203.
SITE NAME.—Georgia Geologic Survey, Coffin Park, test well 3.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Surficial (sand of Miocene and post-Miocene age).
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 202 ft, cased to 192 ft, screen to 202 ft.
DATUM.—Altitude of land-surface datum is 7 ft.
REMARKS.—None.
PERIOD OF RECORD.—November 1983 to current year. Continuous record November 1983 to September 1984, and since January 1985.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 1.54 ft below land-surface datum, October 16, 1994; lowest, 8.13 ft below land-surface datum, July 12, 1990.

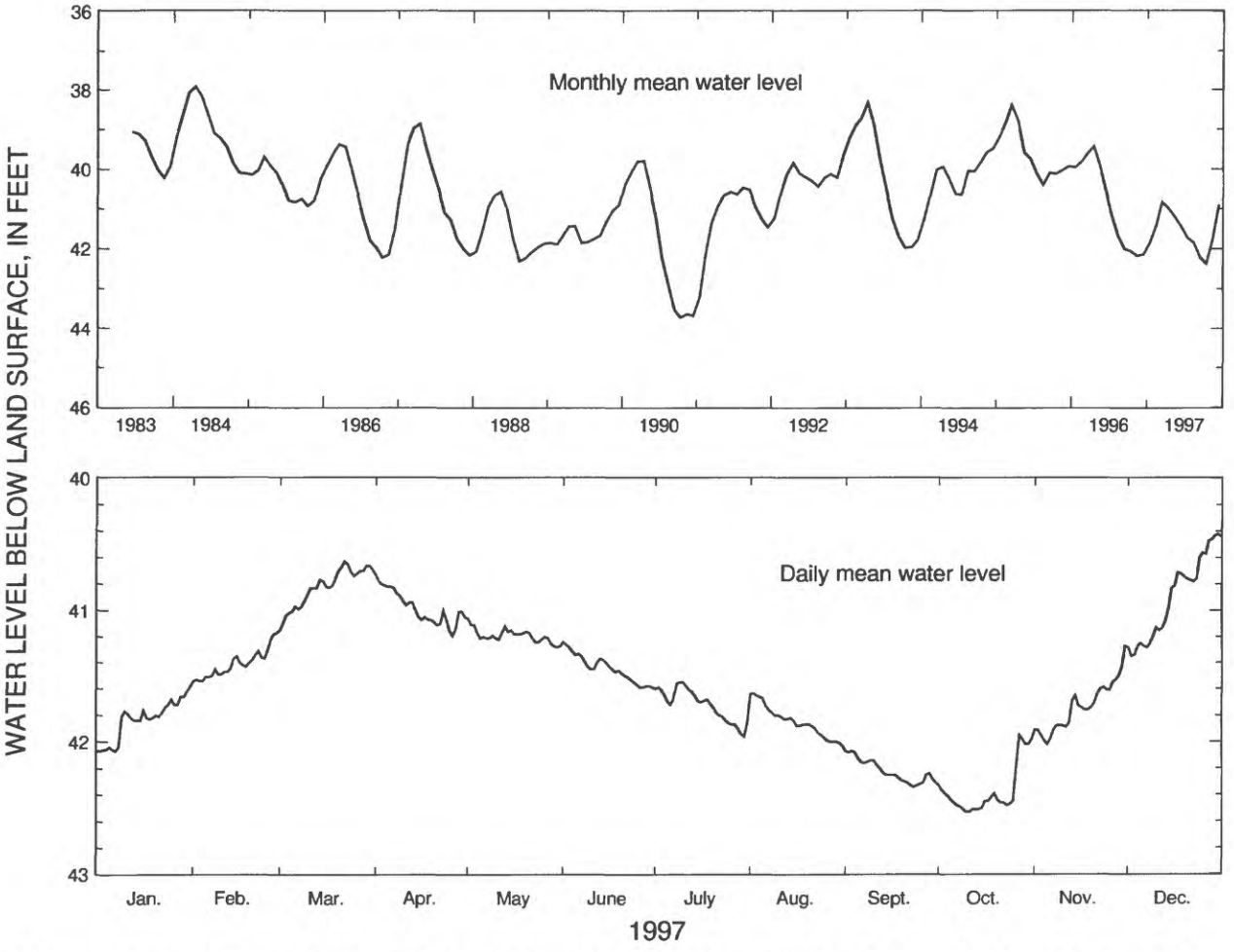


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	3.48	3.17	3.35	3.20	3.58	3.51	4.31	4.36	3.81	3.45	3.25	3.27
MEAN	4.29	3.47	3.58	3.73	4.15	4.11	4.85	4.83	4.14	3.83	3.67	3.62
LOW	4.88	3.81	3.87	4.10	4.76	4.86	5.30	5.14	4.47	4.14	3.87	4.11

SUMMARY FOR 1997 HIGH 3.17 (Feb. 5, 1997) MEAN 4.03 LOW 5.30 (July 30, 1997)

Figure 10. Water level in observation well 34H438, Glynn County.

IDENTIFICATION NUMBER.—32L017.
LOCATION.—Lat 31°32′52″, long 81°43′36″, Hydrologic Unit 03070106.
SITE NAME.—Georgia Geologic Survey, Gardi, test well 3.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Surficial (sand of Miocene and post-Miocene age).
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 215 ft, cased to 200 ft, screen to 215 ft.
DATUM.—Altitude of land-surface datum is 74 ft.
REMARKS.—None.
PERIOD OF RECORD.—June 1983 to current year. Continuous record since June 1983.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 37.85 ft below land-surface datum, April 16, 1984; lowest, 43.91 ft below land-surface datum, October 8, 1990.



1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	41.58	41.17	40.63	40.73	41.06	41.24	41.55	41.63	42.07	41.95	41.27	40.42
MEAN	41.84	41.41	40.82	40.98	41.19	41.44	41.72	41.85	42.22	42.37	41.74	40.90
LOW	42.07	41.54	41.15	41.19	41.28	41.59	41.96	42.03	42.34	42.53	42.02	41.35

SUMMARY FOR 1997 HIGH 40.42 (Dec. 30, 1997) MEAN 41.54 LOW 42.53 (Oct. 10-11, 1997)

Figure 11. Water level in observation well 32L017, Wayne County.

Upper Brunswick Aquifer

The water level in the upper Brunswick aquifer was monitored in three wells in 1997 and data for these wells (fig. 12) are summarized in this report (figs. 13-15). The upper Brunswick aquifer responds to pumping from the Upper Floridan aquifer as a result of the hydraulic connection between the aquifers (Clarke and others, 1990, p. 28). Elsewhere, the water level mainly responds to seasonal variations in recharge and discharge.

The upper Brunswick aquifer in Bulloch County is under unconfined to semiconfined conditions and is influenced by variations in recharge from precipitation and by pumping from the Upper Floridan aquifer (Clarke and others, 1990, p. 28). In the Wayne and Glynn County areas, the upper Brunswick aquifer is confined and responds to nearby pumping (Clarke and others, 1990, p. 28). The annual mean water level in the reported wells ranged from 1.2 ft lower to 1.1 ft higher in 1997 than in 1996.

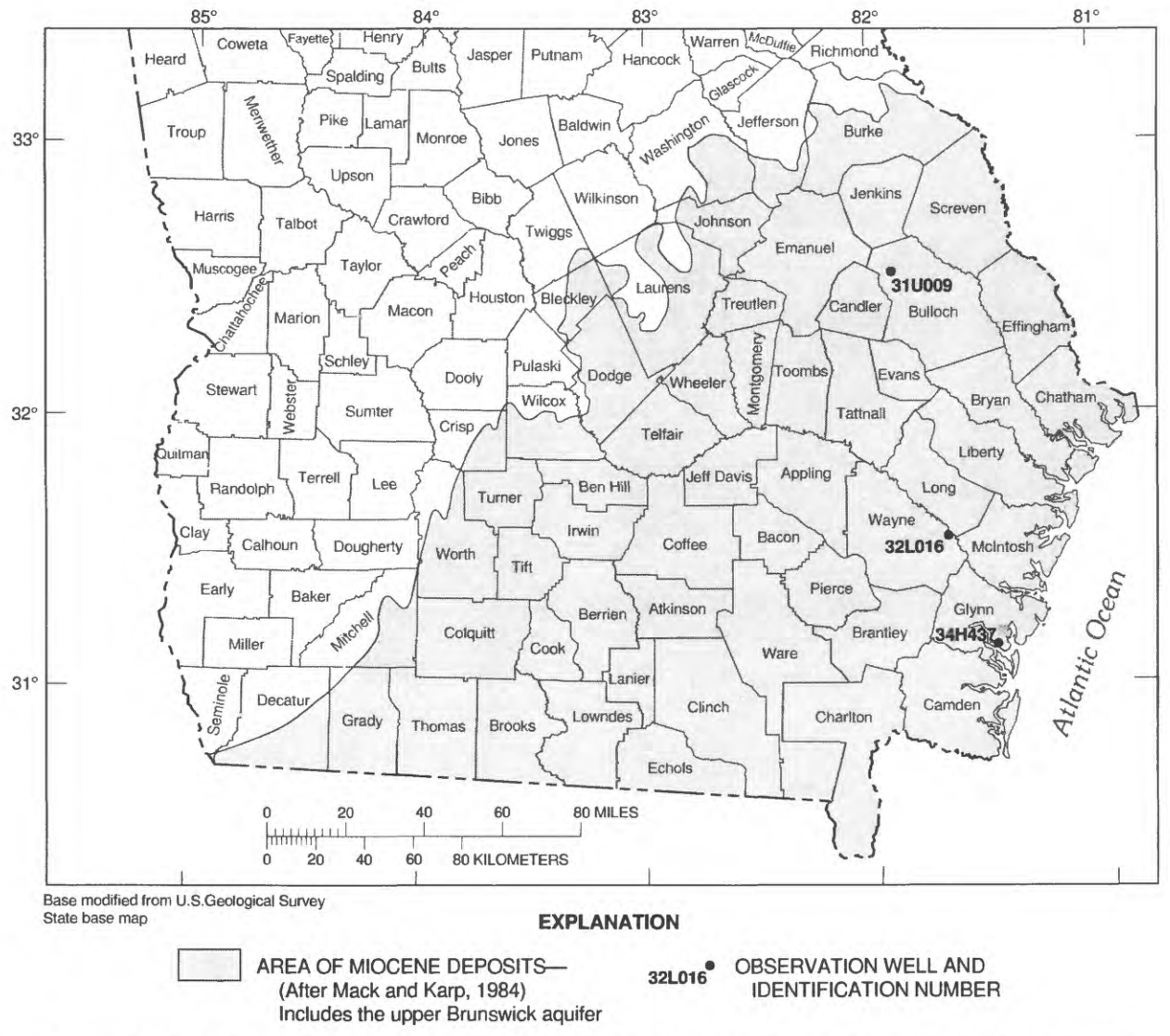
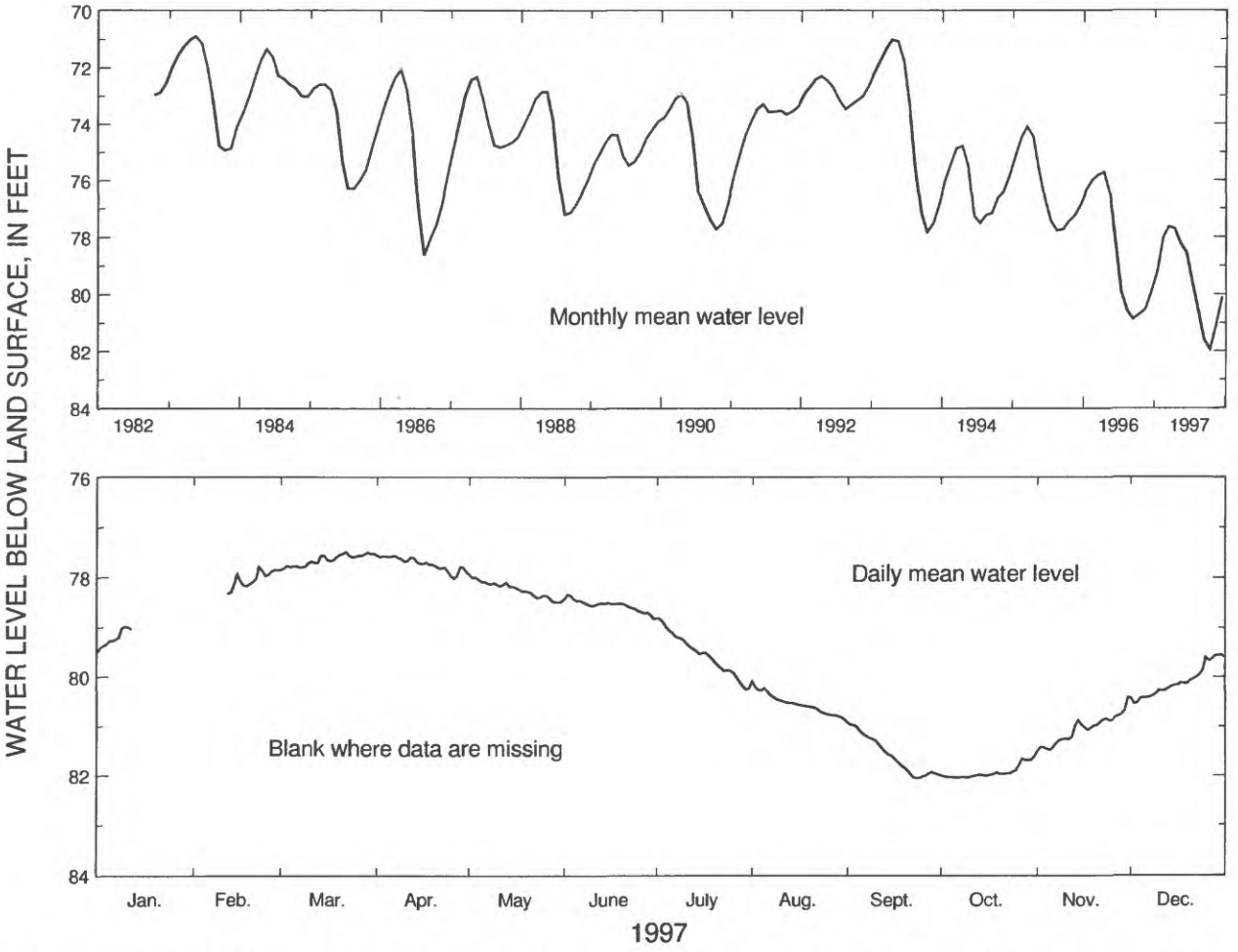


Figure 12. Locations of observation wells completed in the upper Brunswick aquifer. (The extent of the upper Brunswick aquifer has not been mapped, but is within the area of Miocene deposits shown.)

IDENTIFICATION NUMBER.—31U009.
LOCATION.—Lat 32°31′23″, long 81°51′16″, Hydrologic Unit 03060202.
SITE NAME.—Georgia Geologic Survey, Hopeulikit, test well 2.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Brunswick.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 210 ft, cased to 160 ft, screen to 210 ft.
DATUM.—Altitude of land-surface datum is 205 ft.
REMARKS.—Water level data for period, January 13 to February 11, 1997, are missing.
PERIOD OF RECORD.—October 1982 to current year. Continuous record since October 1982.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 70.77 ft below land-surface datum, April 24, 1983; lowest, 82.05 ft below land-surface datum, September 23-24, 1997.

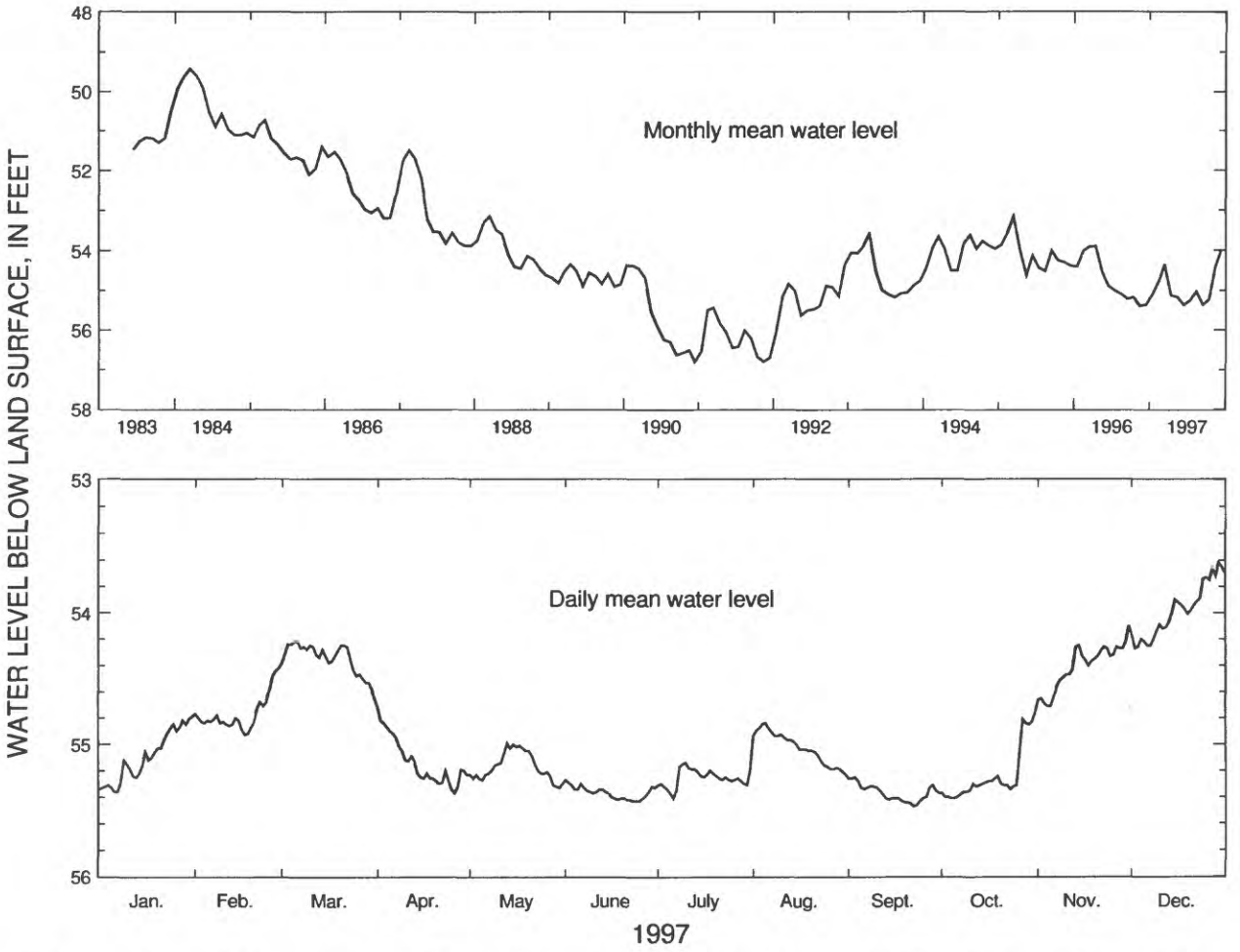


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	------	------	77.48	77.55	77.93	78.33	78.81	80.09	80.92	81.61	80.42	79.55
MEAN	------	------	77.64	77.71	78.22	78.54	79.53	80.54	81.58	81.94	81.07	80.09
LOW	------	------	77.84	78.01	78.49	78.82	80.25	80.86	82.05	82.04	81.50	80.54

SUMMARY FOR 1997 HIGH 77.48 (Mar. 22, 1997) MEAN 79.58 LOW 82.05 (Sept. 23, 1997)

Figure 13. Water level in observation well 31U009, Bulloch County.

IDENTIFICATION NUMBER.—32L016.
LOCATION.—Lat 31°32′52″, long 81°43′36″, Hydrologic Unit 03070106.
SITE NAME.—Georgia Geologic Survey, Gardi, test well 2.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Brunswick.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 340 ft, cased to 320 ft, screen to 340 ft.
DATUM.—Altitude of land-surface datum is 74 ft.
REMARKS.—None.
PERIOD OF RECORD.—June 1983 to current year. Continuous record since June 1983.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 49.26 ft below land-surface datum, March 20, 1984; lowest, 56.93 ft below land-surface datum, January 9, 1991.

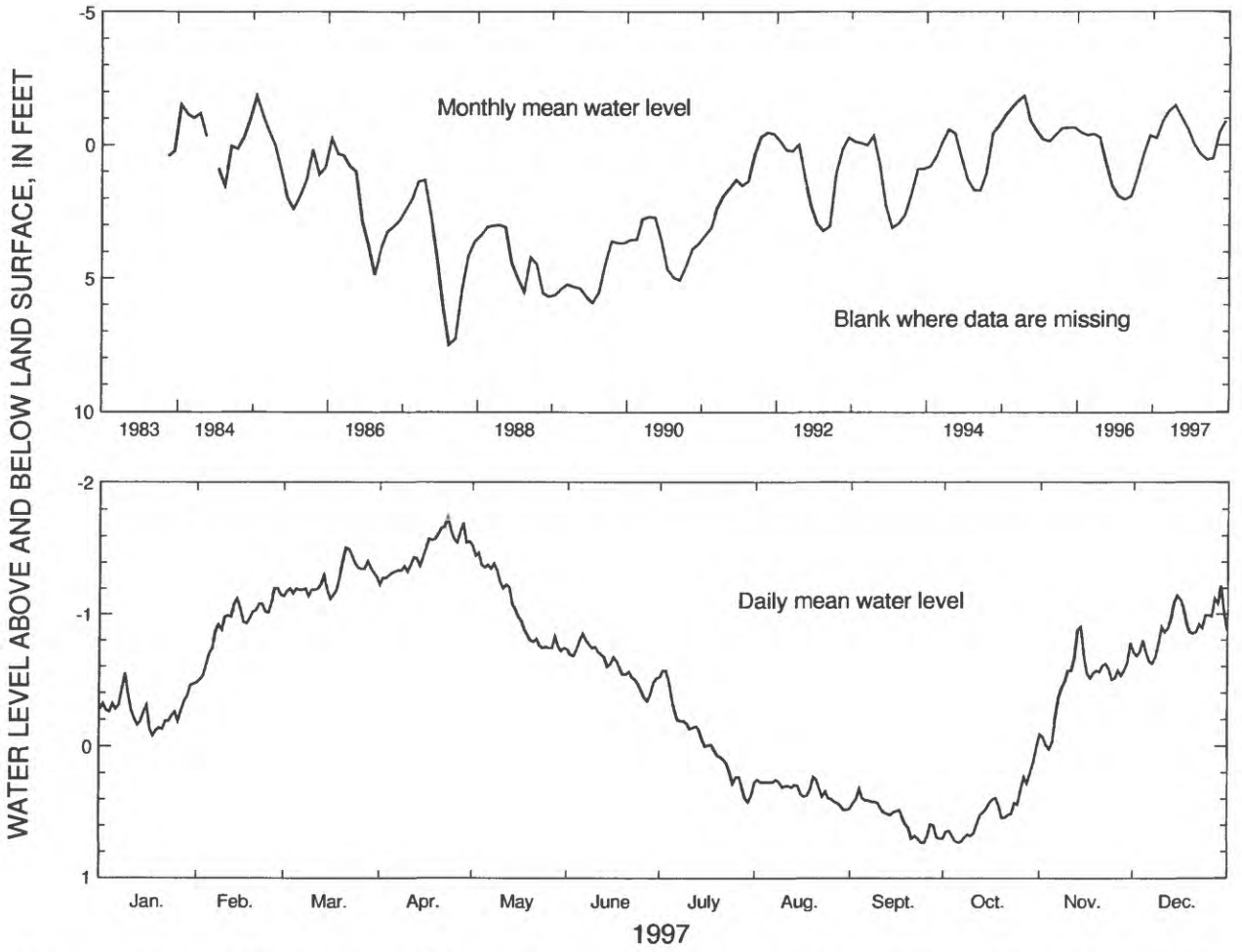


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	54.79	54.42	54.22	54.72	54.99	55.27	55.14	54.84	55.25	54.76	54.10	53.62
MEAN	55.10	54.77	54.35	55.13	55.17	55.37	55.26	55.03	55.37	55.24	54.41	53.98
LOW	55.36	54.93	54.65	55.37	55.33	55.43	55.41	55.23	55.47	55.41	54.71	54.27

SUMMARY FOR 1997 HIGH 53.62 (Dec. 29, 1997) MEAN 54.93 LOW 55.47 (Sept. 22, 1997)

Figure 14. Water level in observation well 32L016, Wayne County.

IDENTIFICATION NUMBER.—34H437.
LOCATION.—Lat 31°09'01", long 81°28'44", Hydrologic Unit 03070203.
SITE NAME.—Georgia Geologic Survey, Coffin Park, test well 2.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Brunswick.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 328 ft, cased to 315 ft, screen to 328 ft.
DATUM.—Altitude of land-surface datum is 7 ft.
REMARKS.—None.
PERIOD OF RECORD.—November 1983 to current year. Continuous record since November 1983.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 2.26 ft above land-surface datum, January 7, 1985; lowest, 7.80 ft below land-surface datum, August 30, 1987.



1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	-0.55	-1.20	-1.51	-1.74	-1.53	-0.85	-0.57	0.23	0.32	0.00	-0.90	-1.22
MEAN	-0.27	-0.93	-1.27	-1.48	-1.05	-0.61	-0.04	0.33	0.54	0.50	-0.49	-0.90
LOW	-0.08	-0.48	-1.12	-1.23	-0.72	-0.34	0.42	0.48	0.73	0.73	0.02	-0.62

SUMMARY FOR 1997 HIGH -1.74 (Apr. 23, 1997) MEAN -0.47 LOW 0.73 (Sept. 24-25, Oct. 6, 1997)

[Negative value indicates water level above land surface]

Figure 15. Water level in observation well 34H437, Glynn County.

Floridan Aquifer System

Water levels in the Floridan aquifer system were monitored in 80 wells in 1997; data for 32 of these wells are summarized in this report (figs. 16 and 47). The Floridan aquifer system includes the Upper and Lower Floridan aquifers (table 2). In and near outcrop areas, the Upper Floridan aquifer is semiconfined and water levels in wells tapping the aquifer fluctuate seasonally in response to variations in recharge rate and pumping (Clarke and others, 1990). Near the coast, where the Upper Floridan aquifer is confined, water levels respond primarily to pumping, and fluctuations related to recharge are less pronounced (Clarke and others, 1990, p. 31). Most of the water withdrawn from the Floridan aquifer system is from the Upper Floridan aquifer; a few wells in the Savannah area withdraw water from the Lower Floridan aquifer.

Upper Floridan aquifer

The water level in the Upper Floridan aquifer is monitored in 64 wells and data for 30 of these wells are summarized in this report (fig. 16). For this report, the Upper Floridan aquifer is divided into seven areas: (1) the southwestern area; (2) the south-central area; (3) the east-central area; (4) the Savannah area; (5) the Jesup-Doctortown area; (6) the Brunswick area; and (7) the St Marys-Okefenokee Swamp area. These areas were divided on the basis of similar hydrologic settings.

Southwestern area

The water level in the Upper Floridan aquifer in southwestern Georgia was monitored in 32 wells in 1997; data for 8 of these wells (fig. 16) are summarized in figures 17-24. In the southwestern area, water levels in wells tapping the Upper Floridan aquifer respond to variations in precipitation, evapotranspiration, pumping, and streamflow (Hayes and others, 1983).

The annual mean water levels in wells 09F520 (fig. 17), 08G001 (fig. 18), 06F001 (fig. 19), and 13L012 (fig. 20) tapping the Upper Floridan aquifer ranged from about the same to 1.0 ft higher in 1997 than in 1996. These four wells are near the Flint River or its tributaries where the aquifer is hydraulically connected to the streams. A new record-low daily mean water level was recorded in well 08G001 (fig. 18) that was 1.2 ft lower than the previous record low.

In areas away from the Flint River and its tributaries, the Upper Floridan aquifer is confined by thicker overburden, is not well connected to streams, and the water level is not directly influenced by precipitation (Torak and others, 1991). Water-level fluctuations and trends in these areas are indicated by the hydrographs for wells 10G313 (fig. 21), 13L003 (fig. 22), 13J004 (fig. 23), and 15L020 (fig. 24). The annual mean water levels in these wells ranged from about the same to 0.5 ft lower in 1997 than in 1996. A new record-low daily mean water level was recorded in well 15L020 (fig. 24) that was 0.2 ft lower than the previous record low.

South-central area

The water level in the Upper Floridan aquifer in south-central Georgia was monitored in three wells in 1997 and data from these wells (fig. 16) are summarized in figures 25-27. Water levels in wells tapping the aquifer in this area are affected by variations in precipitation, evapotranspiration, and to a lesser degree, pumping (Krause, 1979). In the Valdosta area (Lowndes County), water levels also are affected by streamflow (Krause, 1979). The water level is generally highest following the rainy seasons in winter and spring, and lowest in the fall. The annual mean water levels in well 18K049 (fig. 25) in Tift County and in well 18H016 (fig. 26) in Cook County ranged from about the same to 0.4 ft lower in 1997 than in 1996. New record-low daily mean water levels were recorded in wells 18K049 (fig. 25) and 18H016 (fig. 26) that were 1.4 and 0.6 ft lower than the previous record lows.

The Upper Floridan aquifer receives recharge from the Withlacoochee River north of Valdosta where water from the river flows directly into sinkholes and large solution openings in the aquifer. In this area, increased precipitation and streamflow in winter and early spring result in higher ground-water levels. During most years, decreased precipitation and increased evapotranspiration in the summer results in lower streamflow and correspondingly, lower ground-water levels. The annual mean water level in well 19E009 (fig. 27) was 5.6 ft higher in 1997 than in 1996.

East-central area

The water level in the Upper Floridan aquifer in east-central Georgia was monitored in three wells in 1997 and data from these wells (fig. 16) are summarized in figures 28-30. Well 21T001 (fig. 28) in Laurens County is located near the recharge area for the Upper Floridan aquifer, and the water level in this well responds mainly to seasonal fluctuations in precipitation (Krause and Randolph, 1989). The annual mean water level in this well was 0.6 ft lower in 1997 than in 1996. The 1997 annual mean water levels in well 25Q001 (fig. 29) in Montgomery County and well 26R001 (fig. 30) in Toombs County ranged form 1.0 to 1.4 ft lower in 1997 than in 1996. New record-low daily mean water levels were recorded in wells 25Q001 (fig. 29) and 26R001 (fig. 30) that were 2.0 and 0.4 ft lower than the previous record lows.

Savannah area

The water level in the Upper Floridan aquifer in the Savannah area was monitored in 17 wells in 1997 and data from 7 of these wells (fig. 16) are summarized in figures 31-37. In this area, the water level in the Upper Floridan aquifer is mainly affected by pumping for public supply and industrial uses.

In 1997, annual mean water levels in the reported wells in the Savannah area (figs. 31-34) ranged from 0.8 ft lower to 1.6 ft higher than in 1996.

Jesup-Doctortown area

The water level in the Upper Floridan aquifer in the Jesup-Doctortown area was monitored in three wells in 1997 (fig. 16) and data from these wells are summarized in figures 38-40. In this area, water levels in wells tapping the aquifer are affected mainly by industrial pumping at Doctortown, near Jesup. In 1997, a partial, short-term industrial shutdown, during which the major ground-water user temporarily reduced pumpage, is indicated by sharp water-level rises on all three hydrographs. The 1997 mean water levels in the three wells (figs. 38-40) ranged from 0.2 to 1.9 ft higher than in 1996.

Brunswick area

The water level in the Upper Floridan aquifer in the Brunswick area was monitored in seven wells in 1997 and data from four of these wells (fig. 16) are summarized in this report. In this area, water levels in wells tapping this aquifer are mainly affected by industrial pumping. The water-level response to pumping is illustrated in the hydrographs for wells 33H127 (fig. 41) and 34H403 (fig. 42) tapping the lower water-bearing zone of the Upper Floridan aquifer, and wells 33H133 (fig. 43) and 34H371 (fig. 44) tapping the upper water-bearing zone of the Upper Floridan aquifer. The annual mean water levels in wells 33H127 (fig. 41) and 34H403 (fig. 42) were 0.8 and 0.6 ft lower in 1997 than in 1996. The annual mean water levels in wells 33H133 (fig. 43) and 34H371 (fig. 44) were 0.6 ft lower and 0.3 ft higher in 1997 than in 1996.

St Marys-Okefenokee Swamp area

The water level in the Upper Floridan aquifer in the St Marys-Okefenokee Swamp area (fig. 16) was monitored in six wells in 1997 and data from two of these wells are summarized in figures 45-46. Water levels in wells tapping the aquifer in this area are affected by industrial pumping. The 1997 annual mean water levels in well 33E027 (fig. 45) at Kings Bay and well 27E004 (fig. 46) in western Charlton County were 0.6 and 0.8 ft higher than in 1996.

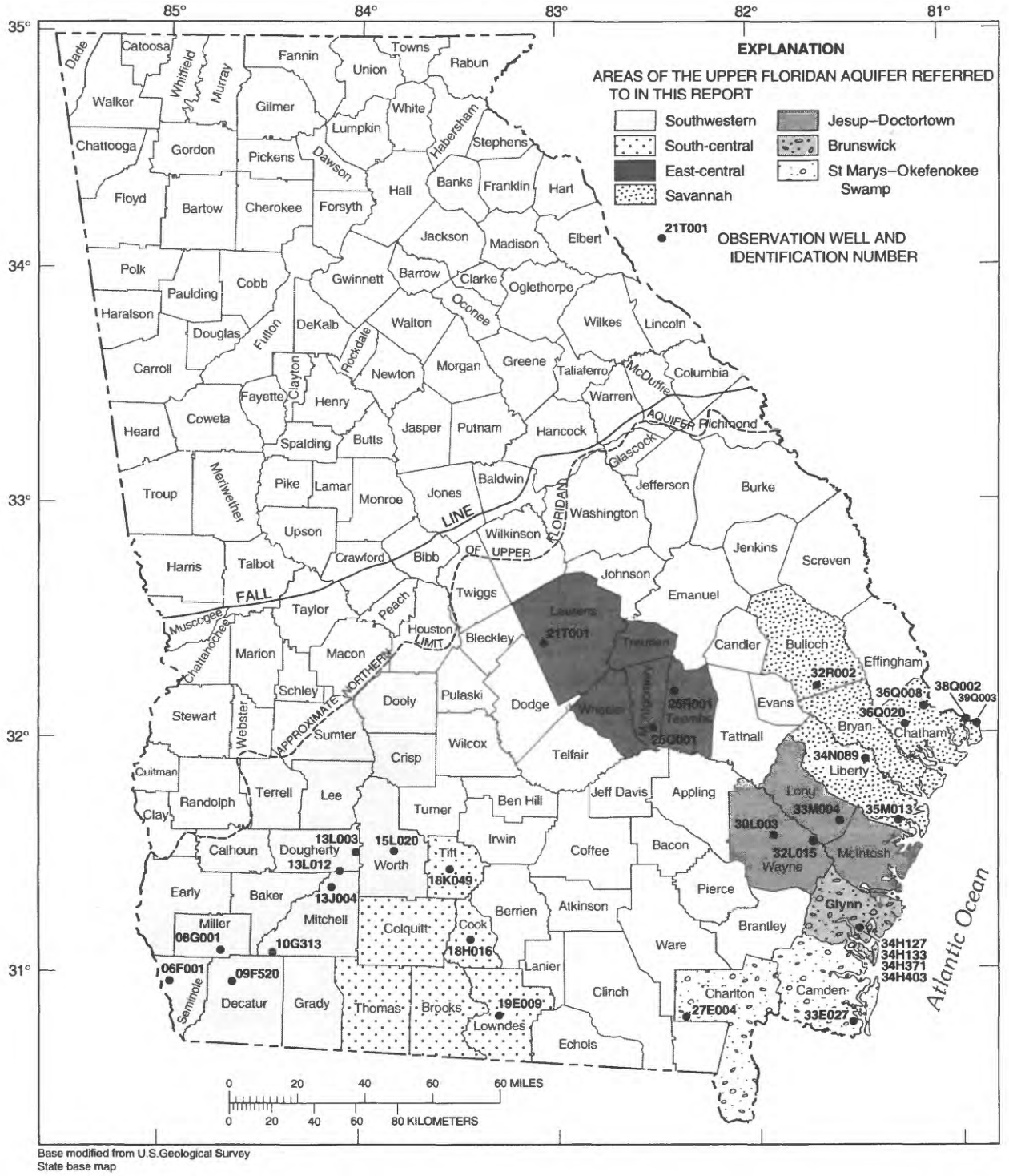
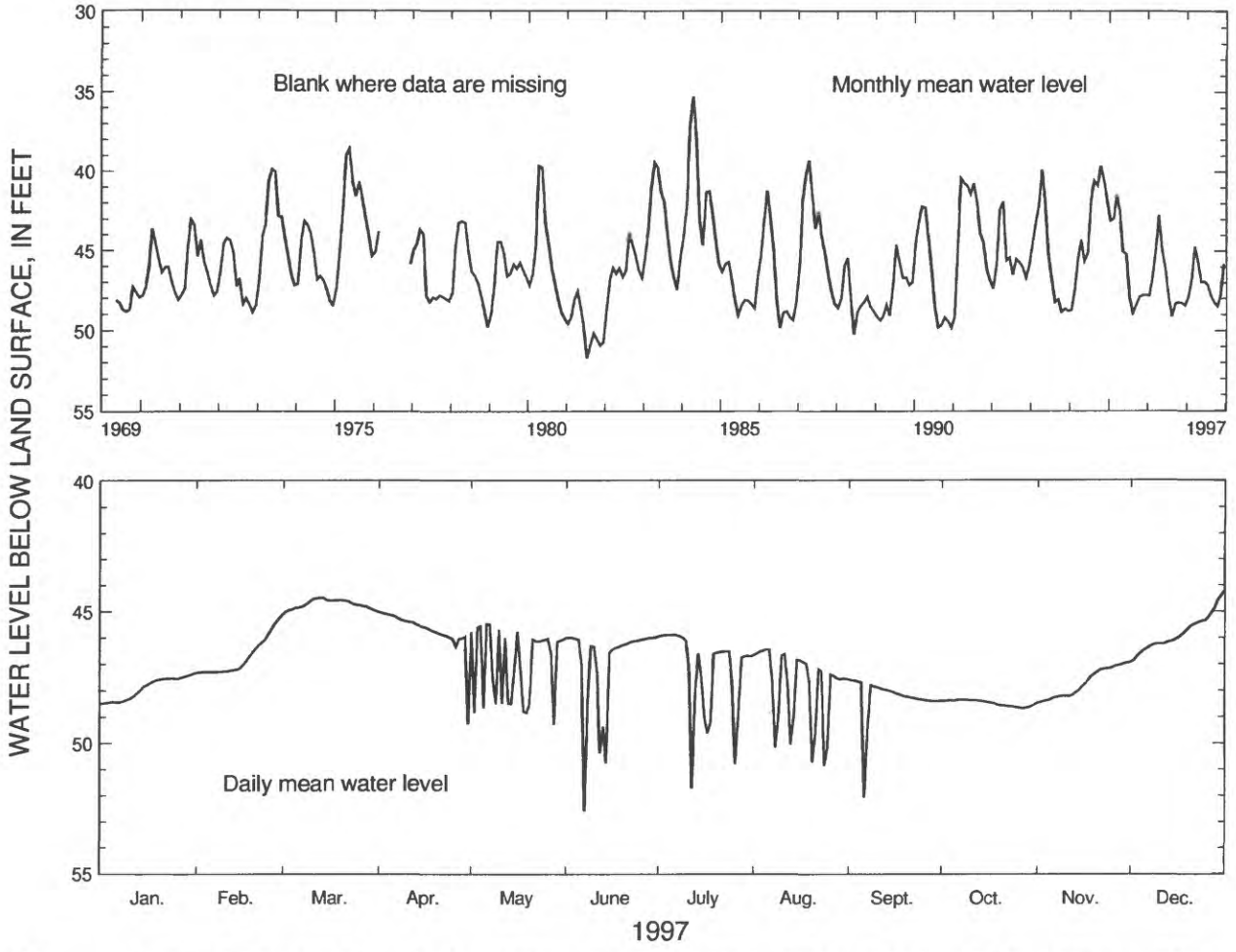


Figure 16. Locations of observation wells completed in the Upper Floridan aquifer.

IDENTIFICATION NUMBER.—09F520.
LOCATION.—Lat 30°57′42″, long 84°35′46″, Hydrologic Unit 03130008.
SITE NAME.—Graham Bolton.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Unused irrigation well, diameter 12 in., depth 251 ft, cased to 130 ft, open hole.
DATUM.—Altitude of land-surface datum is 128 ft.
REMARKS.—This well is about 15 ft from an irrigation well.
PERIOD OF RECORD.—May 1969 to current year. Continuous record since May 1969.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 34.86 ft below land-surface datum, April 15, 1984; lowest, 54.89 ft below land-surface datum, September 22, 1990.

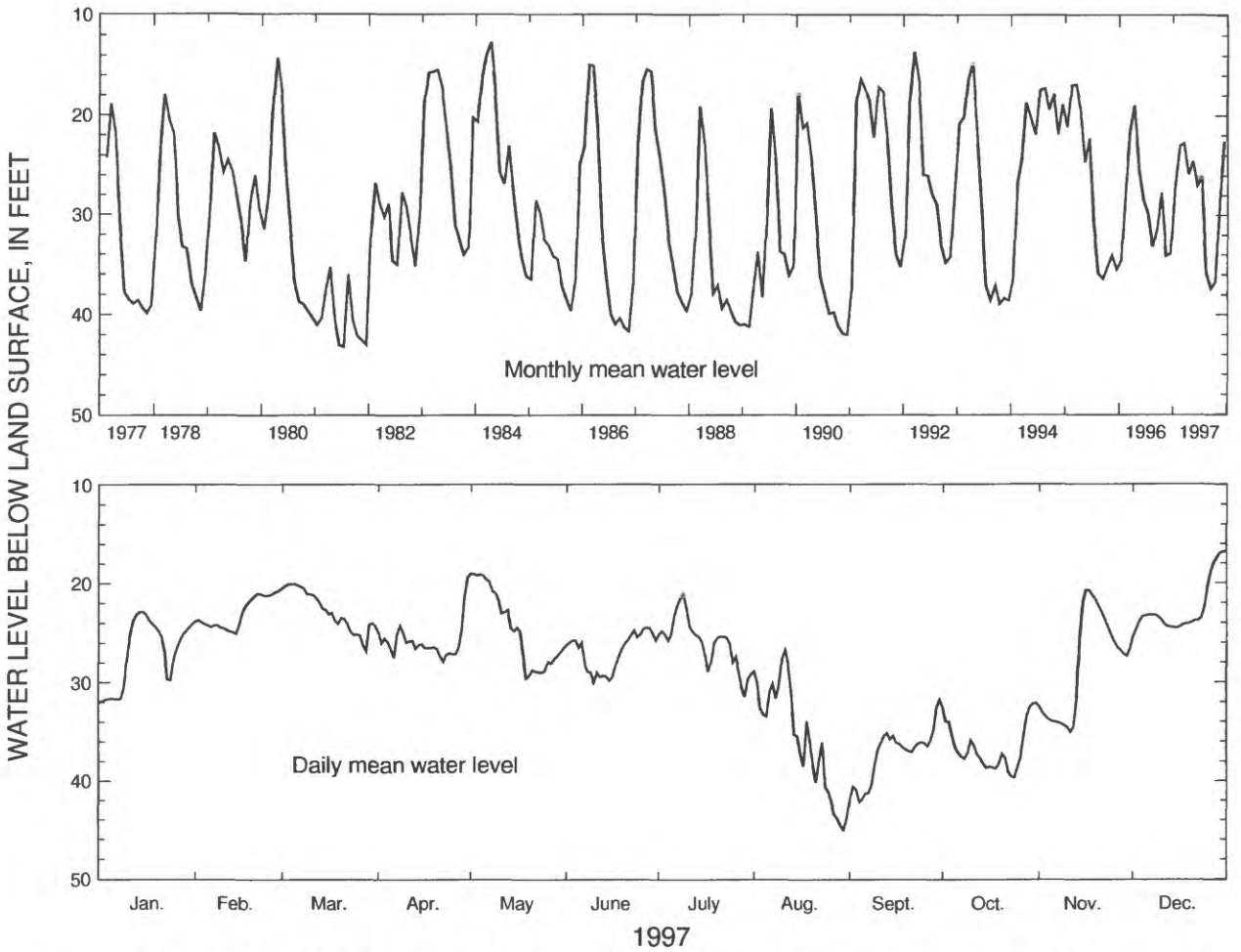


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	47.36	45.22	44.48	45.01	45.48	45.99	45.89	46.45	47.59	48.35	46.96	44.23
MEAN	47.92	46.75	44.72	45.70	46.96	46.93	47.16	47.82	48.26	48.49	47.74	45.82
LOW	48.50	47.33	45.10	49.27	49.29	52.59	51.73	50.86	52.07	48.68	48.47	46.94

SUMMARY FOR 1997 HIGH 44.23 (Dec. 31, 1997) MEAN 47.02 LOW 52.59 (June 7, 1997)

Figure 17. Water level in observation well 09F520, Decatur County.

IDENTIFICATION NUMBER.—08G001.
LOCATION.—Lat 31°06′51″, long 84°40′45″, Hydrologic Unit 03130010.
SITE NAME.—Viercocken.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled unused irrigation well, diameter 12 in., depth 255 ft, cased to 130 ft, open hole.
DATUM.—Altitude of land-surface datum is 150 ft.
REMARKS.—None.
PERIOD OF RECORD.—February 1977 to current year. Continuous record since February 1977.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 11.18 ft below land-surface datum, April 11, 1984; lowest, 45.07 ft below land-surface datum, August 30, 1997.

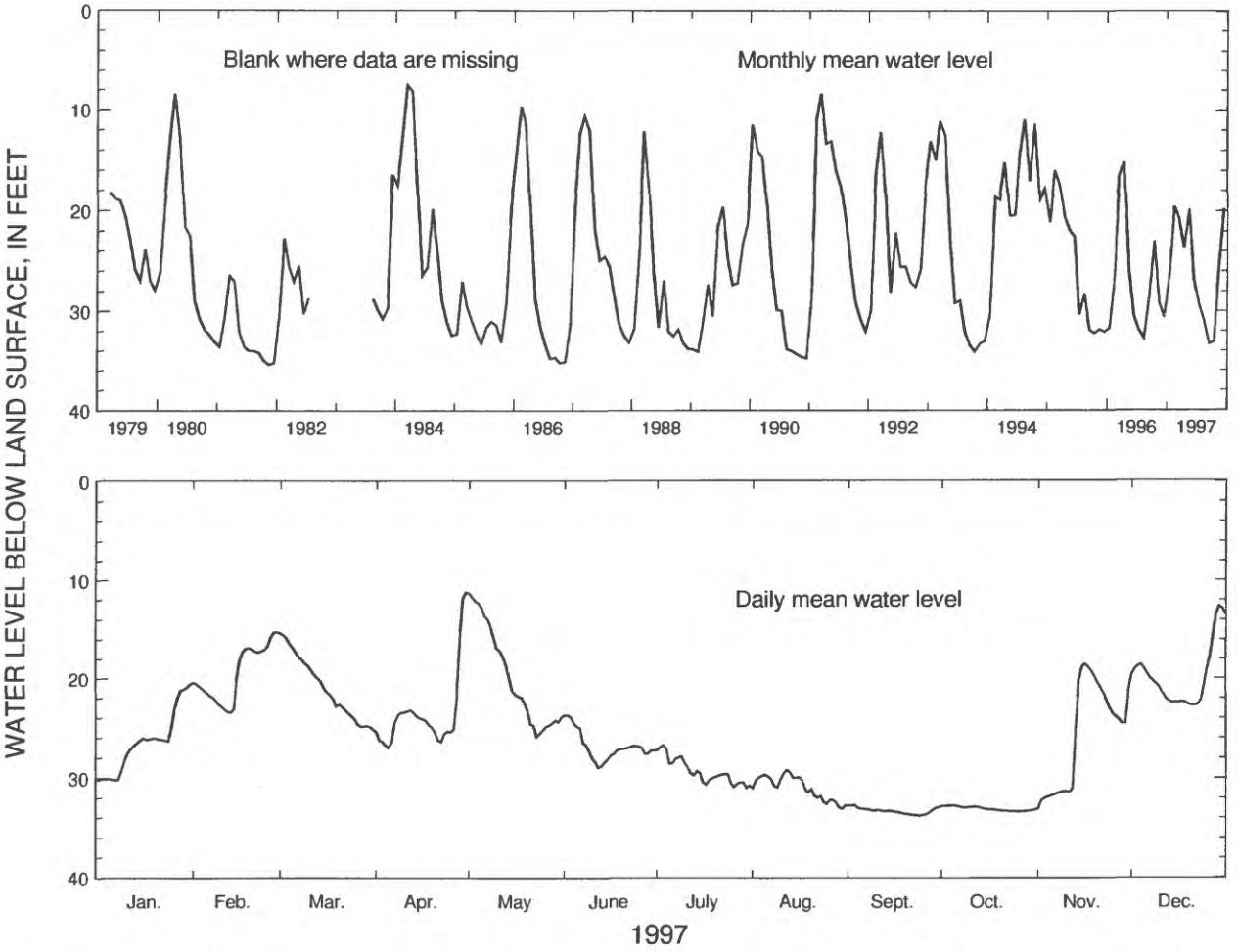


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	22.85	20.71	20.06	19.42	19.01	24.50	21.10	26.75	31.81	32.17	20.75	16.81
MEAN	27.05	22.99	22.75	25.85	24.54	26.93	26.00	35.77	37.38	36.67	28.36	22.56
LOW	32.04	25.04	26.82	27.90	29.61	30.01	31.48	45.07	42.20	39.72	35.07	25.41

SUMMARY FOR 1997 HIGH 16.81 (Dec. 31, 1997) MEAN 28.09 LOW 45.07 (Aug. 30, 1997)

Figure 18. Water level in observation well 08G001, Miller County.

IDENTIFICATION NUMBER.—06F001.
LOCATION.—Lat 30°54′01″, long 84°53′40″, Hydrologic Unit 03130004.
SITE NAME.—Roddenbery Company Farms, test well 1.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 150 ft, cased to 98.5 ft, open hole.
DATUM.—Altitude of land-surface datum is 110 ft.
REMARKS.—None.
PERIOD OF RECORD.—March 1979 to July 1982, August 1983 to current year. Continuous record March 1979 to July 1982, and since August 1983.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 4.13 ft below land-surface datum, March 8, 1984; lowest, 35.65 ft below land-surface datum, October 5, 1986.

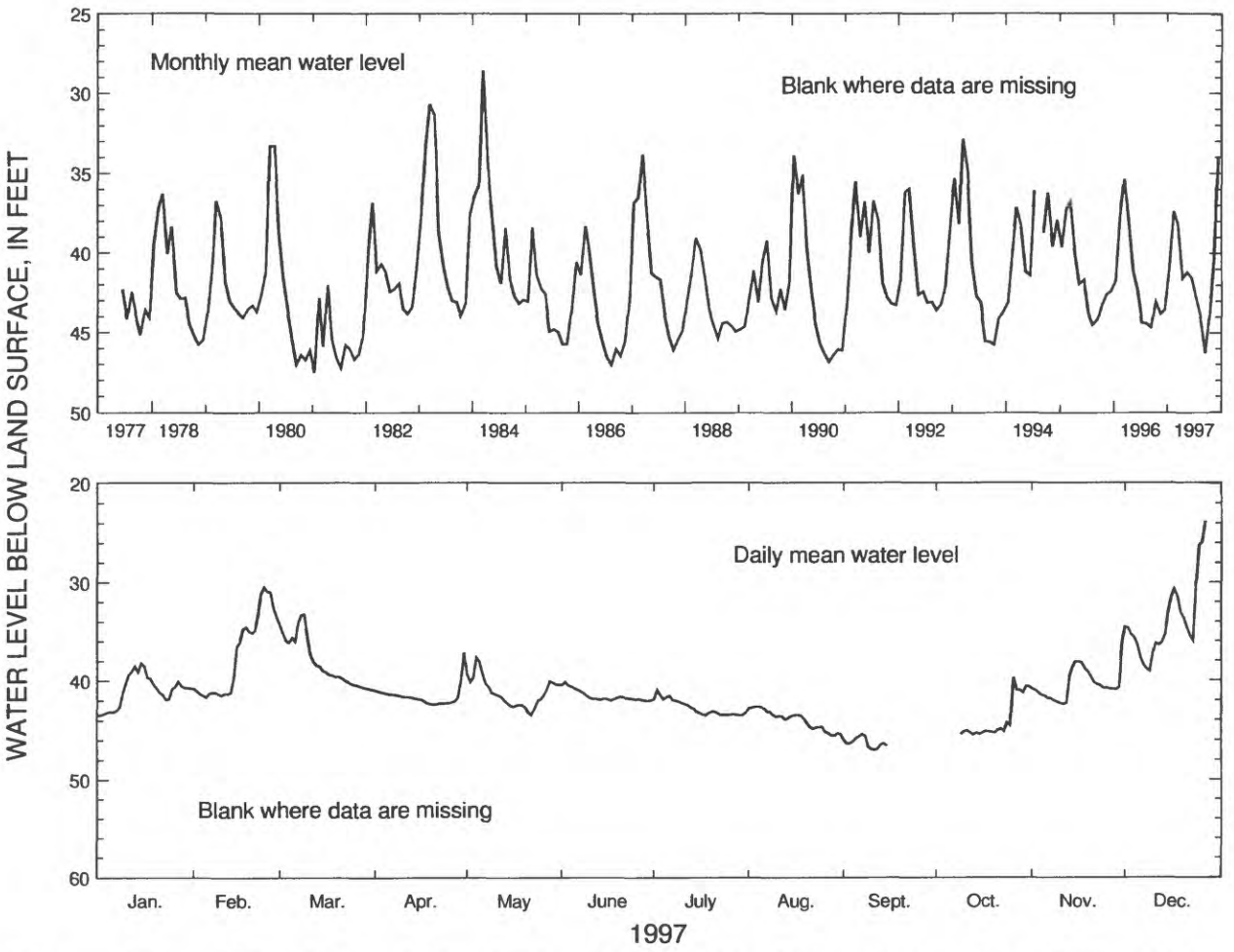


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	20.62	15.22	15.36	11.20	11.31	23.69	26.73	29.23	32.70	32.79	18.52	12.63
MEAN	26.53	19.51	20.85	23.65	19.80	26.84	29.33	31.00	33.31	33.10	25.73	19.77
LOW	30.19	23.43	25.14	26.98	25.86	28.97	31.00	33.10	33.78	33.38	33.08	22.74

SUMMARY FOR 1997 HIGH 11.20 (Apr. 30, 1997) MEAN 25.82 LOW 33.78 (Sept. 24, 1997)

Figure 19. Water level in observation well 06F001, Seminole County.

IDENTIFICATION NUMBER.—13L012.
LOCATION.—Lat 31°31′05″, long 84°06′43″, Hydrologic Unit 03130008.
SITE NAME.—U.S. Geological Survey, test well 3.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 218 ft, cased to 54 ft, open hole.
DATUM.—Altitude of land-surface datum is 195 ft.
REMARKS.—Water-level data for periods, September 16 to October 8 and December 28-31, 1997, are missing.
PERIOD OF RECORD.—June 1977 to current year. Continuous record since June 1977.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 21.92 ft below land-surface datum, March 2, 1979; lowest, 48.18 ft below land-surface datum, July 1, 1981.

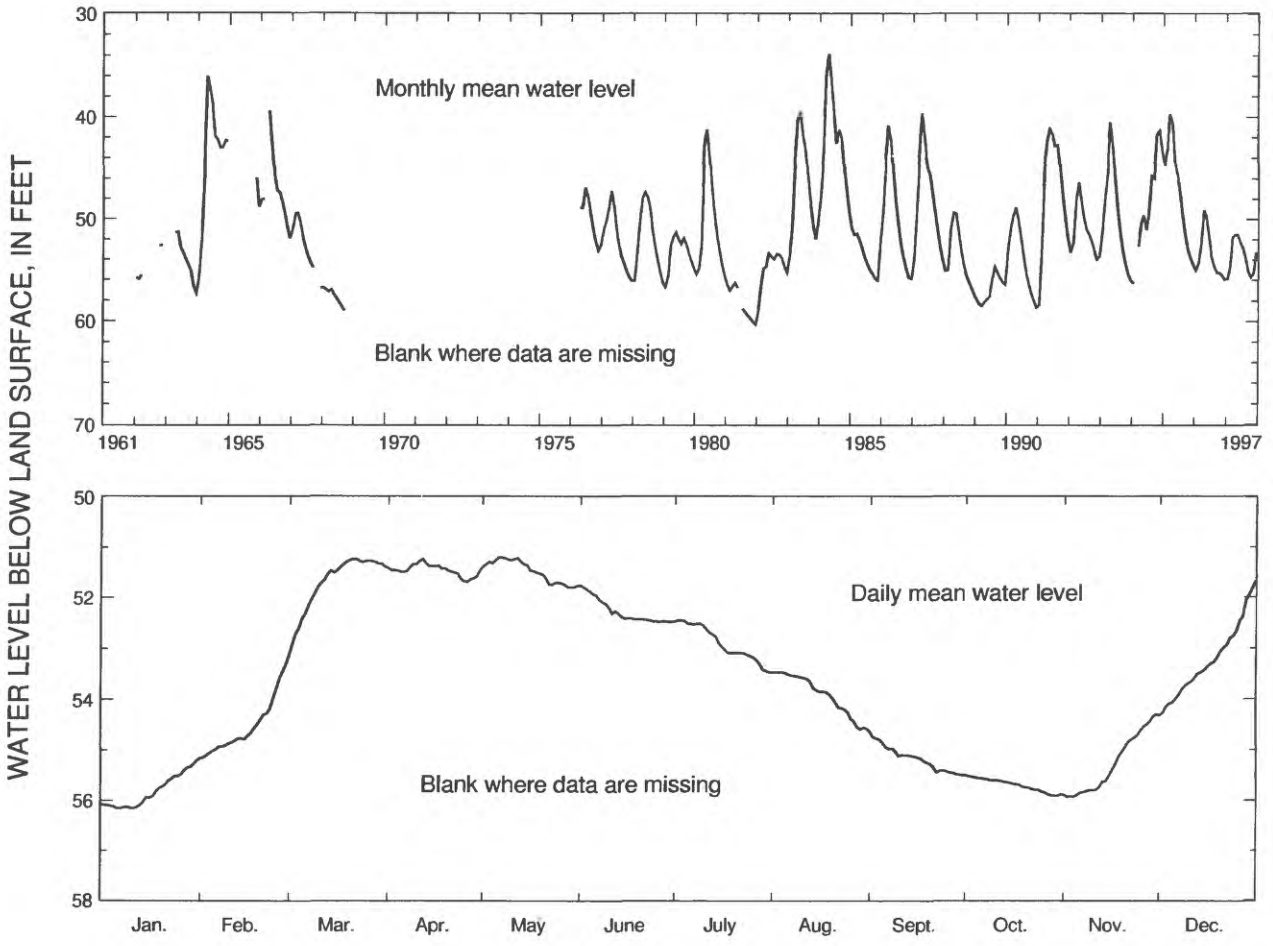


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	38.21	30.51	33.25	37.13	37.66	40.14	40.95	42.64	------	------	36.17	23.76
MEAN	41.00	37.38	38.16	41.58	41.20	41.55	42.76	43.98	------	------	40.45	33.97
LOW	43.48	41.68	40.92	42.42	43.43	42.06	43.52	45.59	------	------	42.43	39.04

SUMMARY FOR 1997 HIGH 23.76 (Dec. 27, 1997) MEAN 40.82 LOW 47.03 (Sept. 11, 1997)

Figure 20. Water level in observation well 13L012, Dougherty County.

IDENTIFICATION NUMBER.—10G313.
LOCATION.—Lat 31°05'07", long 84°26'22", Hydrologic Unit 03130008.
SITE NAME.—Harvey Meinders.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Cable-tool, observation well, diameter 12 in., depth 250 ft, cased to 87 ft, open hole.
DATUM.—Altitude of land-surface datum is 145 ft.
REMARKS.—None.
PERIOD OF RECORD.—November 1961 to September 1968, April 1976 to current year. Continuous record November 1961 to September 1968, and since April 1976.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 32.98 ft below land-surface datum, April 9, 1984; lowest, 60.26 ft below land-surface datum, January 1, 1982.

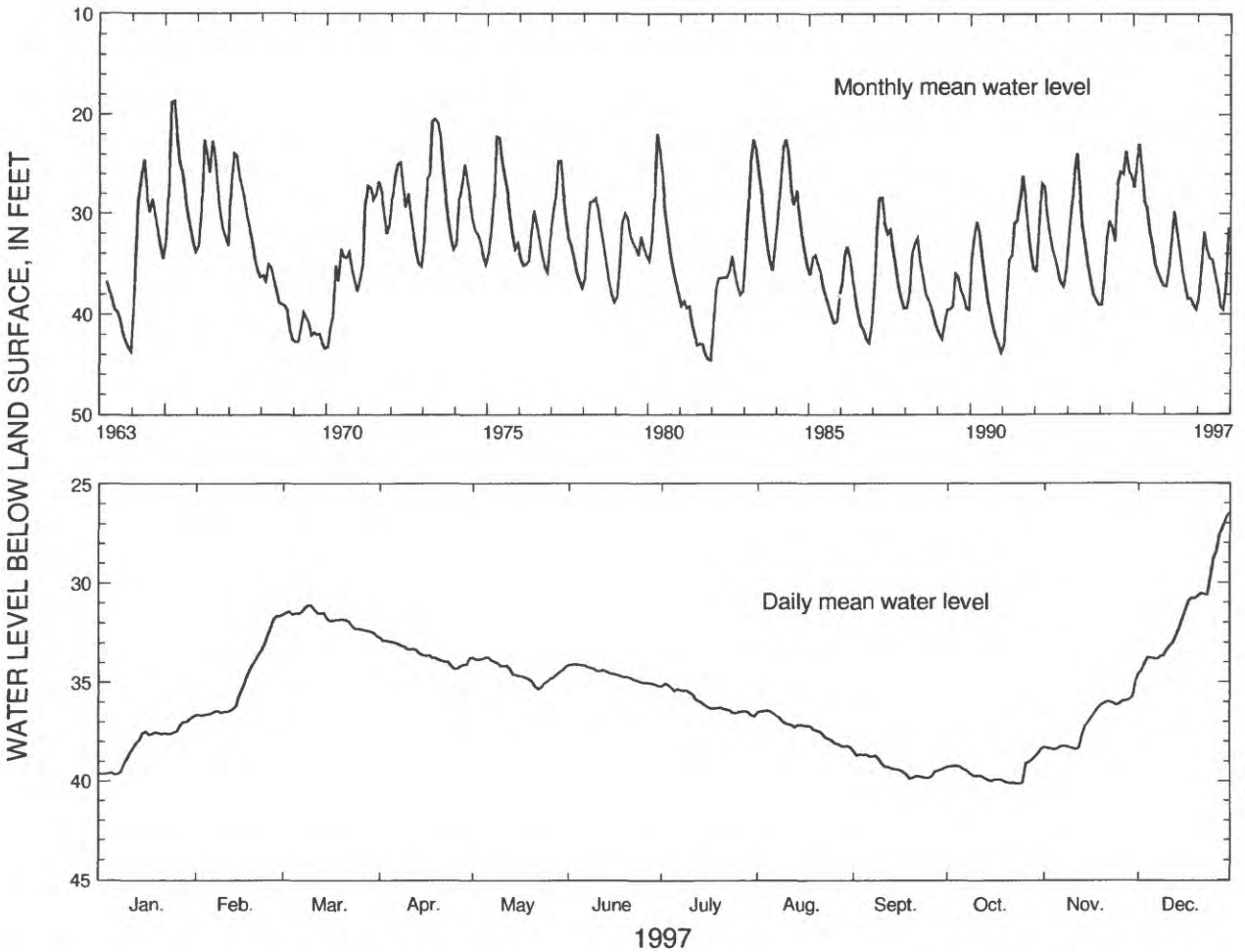


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	55.20	53.30	51.24	51.24	51.21	51.76	52.45	53.47	54.63	55.50	54.30	51.68
MEAN	55.83	54.56	51.70	51.46	51.48	52.27	52.89	53.90	55.16	55.69	55.29	53.24
LOW	56.16	55.16	53.11	51.69	51.80	52.48	53.47	54.59	55.50	55.91	55.93	54.32

SUMMARY FOR 1997 HIGH 51.21 (May 6-7, 1997) MEAN 53.62 LOW 56.16 (Jan. 6-7,11, 1997)

Figure 21. Water level in observation well 10G313, Mitchell County.

IDENTIFICATION NUMBER.—13L003.
LOCATION.—Lat 31°33'13", long 84°00'21", Hydrologic Unit 03130008.
SITE NAME.—City of Albany and Dougherty County.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled unused supply well, diameter 6 in., depth 259 ft, cased to 206 ft, open hole.
DATUM.—Altitude of land-surface datum is 225 ft.
REMARKS.—None.
PERIOD OF RECORD.—January 1963 to current year. Continuous record since January 1963.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 17.41 ft below land-surface datum, April 2, 1965; lowest, 44.89 ft below land-surface datum, December 13, 1981.

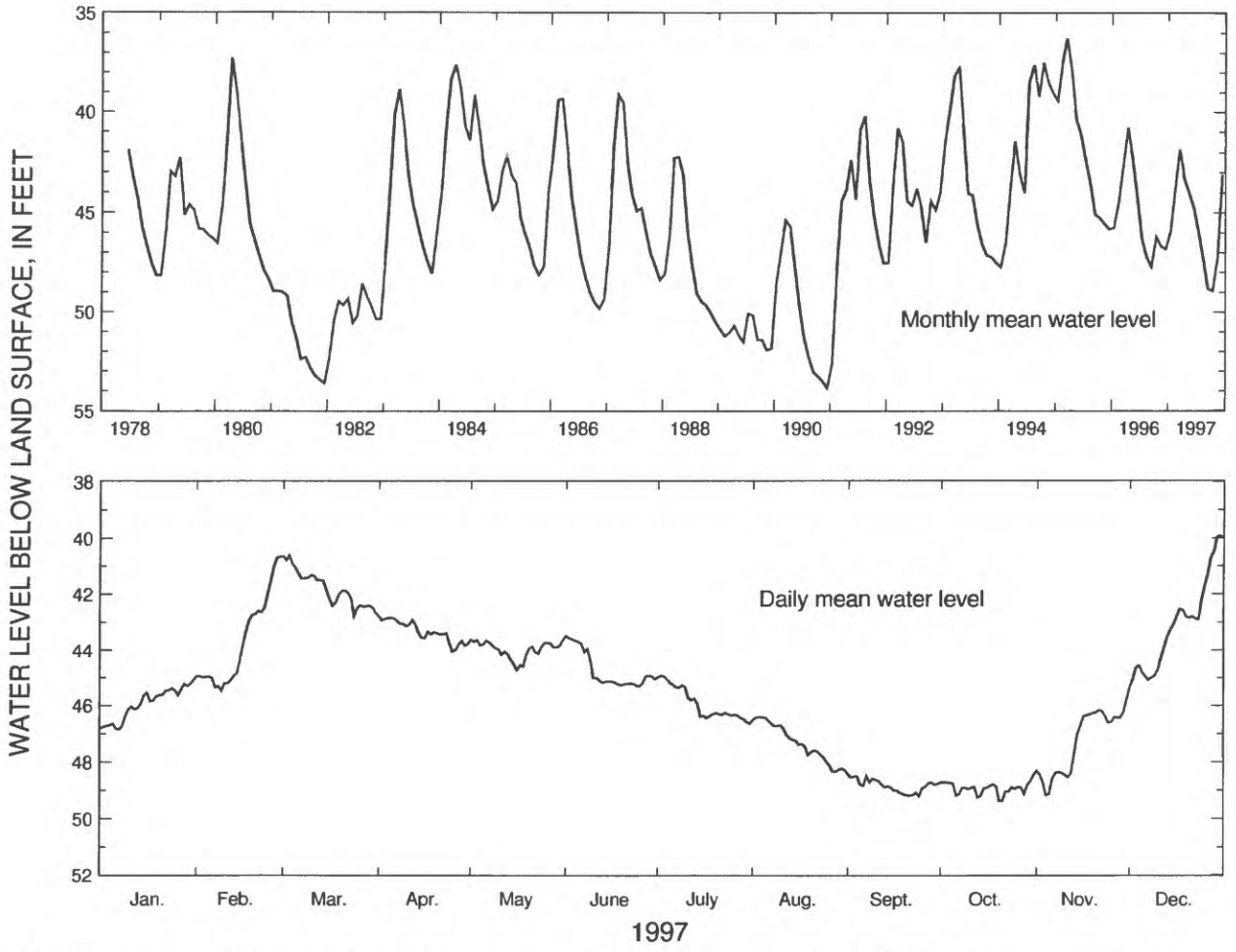


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	36.76	31.67	31.13	32.75	33.75	34.10	35.07	36.43	38.48	38.37	34.93	26.48
MEAN	38.18	34.98	31.82	33.56	34.45	34.60	36.00	37.31	39.29	39.58	37.07	31.27
LOW	39.67	36.68	32.67	34.31	35.34	35.19	36.72	38.28	39.87	40.14	38.41	34.55

SUMMARY FOR 1997 HIGH 26.48 (Dec. 31, 1997) MEAN 35.68 LOW 40.14 (Oct. 23-24, 1997)

Figure 22. Water level in observation well 13L003, Dougherty County.

IDENTIFICATION NUMBER.—13J004.
LOCATION.—Lat 31°21'29", long 84°06'57", Hydrologic Unit 03130008.
SITE NAME.—Aurora Dairy.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 12 in., depth 208 ft, cased to 77 ft, open hole.
DATUM.—Altitude of land-surface datum is 200 ft.
REMARKS.—None.
PERIOD OF RECORD.—June 1978 to current year. Continuous record since June 1978.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 35.68 ft below land-surface datum, March 1,1995; lowest, 54.05 ft below land-surface datum, December 25, 1990.

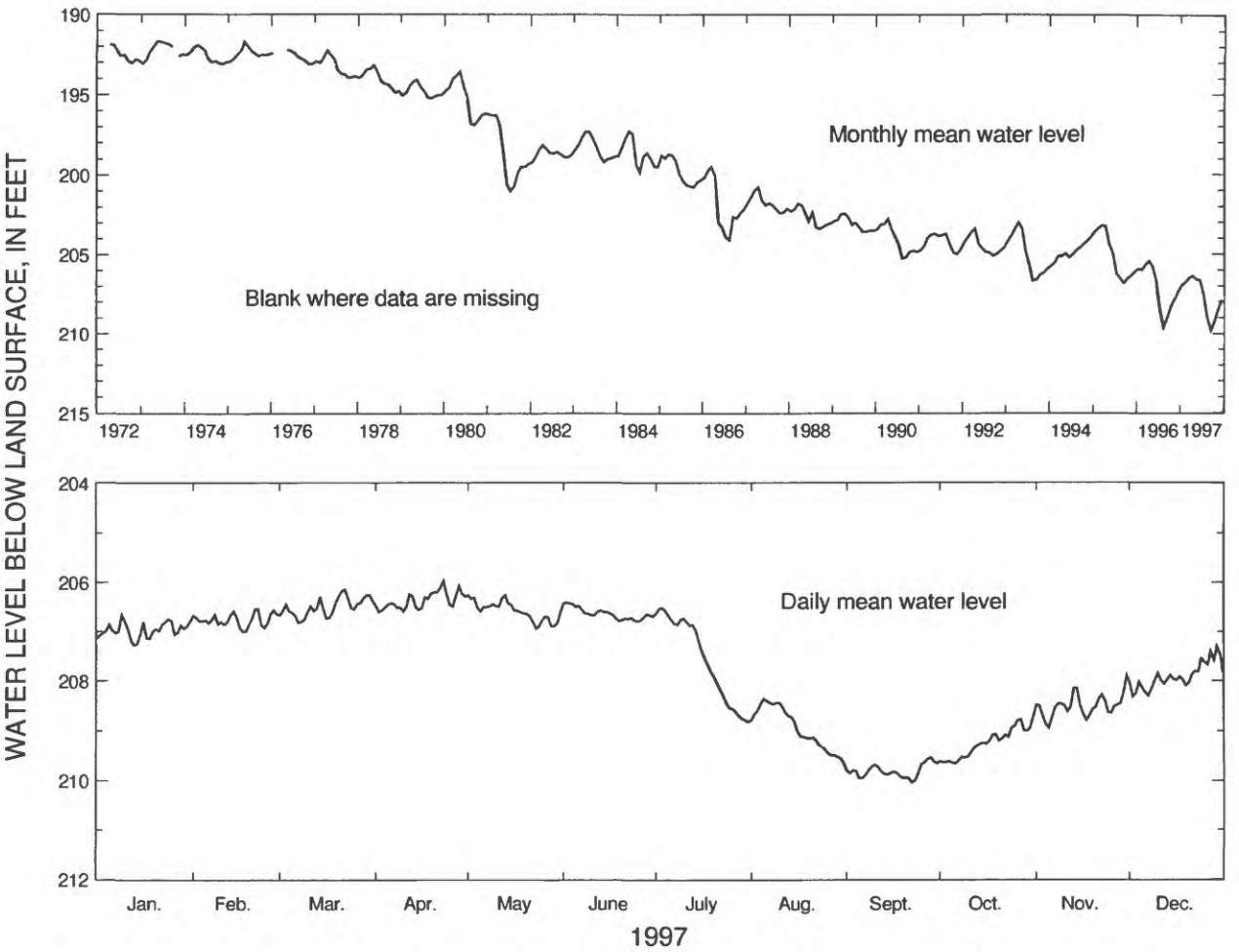


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	45.07	40.66	40.62	42.79	43.62	43.48	44.91	46.40	48.42	48.45	45.79	39.92
MEAN	45.94	43.73	41.79	43.31	43.97	44.73	45.91	47.32	48.83	48.93	47.30	43.09
LOW	46.85	45.46	42.77	44.05	44.71	45.30	46.64	48.34	49.20	49.37	49.16	45.35

SUMMARY FOR 1997 HIGH 39.92 (Dec. 30, 1997) MEAN 45.41 LOW 49.37 (Oct. 20-21, 1997)

Figure 23. Water level in observation well 13J004, Mitchell County.

IDENTIFICATION NUMBER.—15L020.
LOCATION.—Lat 31°31'46", long 83°49'16", Hydrologic Unit 03110204.
SITE NAME.—City of Sylvester.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled unused municipal well, diameter 18 in., depth 450 ft, cased to 212 ft, open hole.
DATUM.—Altitude of land-surface datum is 420 ft.
REMARKS.—None.
PERIOD OF RECORD.—April 1972 to current year. Continuous record since April 1972.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 191.50 ft below land-surface datum, May 17, 1973; lowest, 210.04 ft below land-surface datum, September 22, 1997.

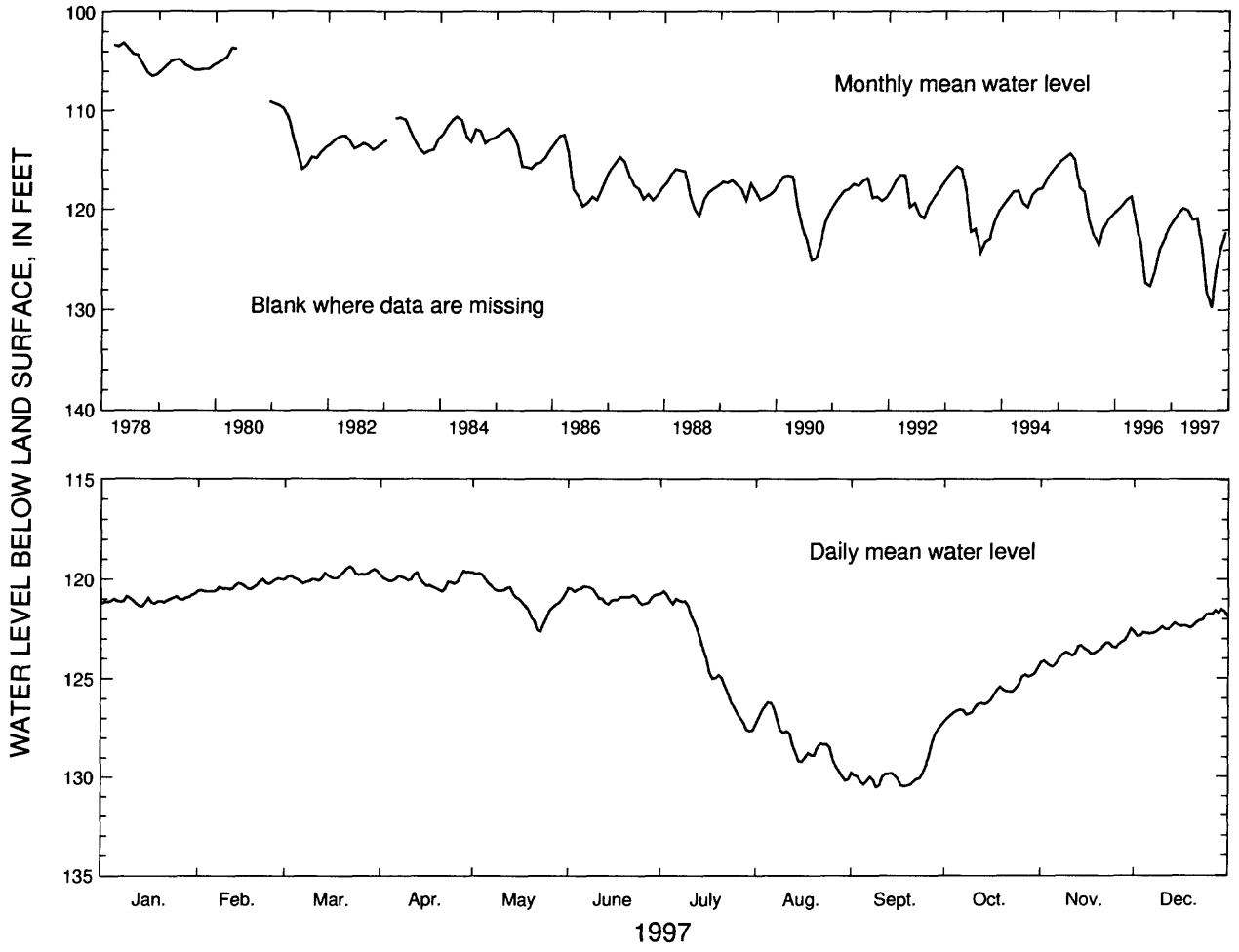


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	206.66	206.55	206.14	205.97	206.26	206.41	206.52	208.36	209.53	208.71	207.89	207.31
MEAN	206.97	206.76	206.50	206.37	206.58	206.63	207.54	208.95	209.81	209.25	208.51	207.90
LOW	207.28	207.00	206.82	206.60	206.94	206.79	208.82	209.64	210.04	209.65	208.94	208.31

SUMMARY FOR 1997 HIGH 205.97 (Apr. 23, 1997) MEAN 207.65 LOW 210.04 (Sept. 22, 1997)

Figure 24. Water level in observation well 15L020, Worth County.

IDENTIFICATION NUMBER.—18K049.
LOCATION.—Lat 31°27'12", long 82°59'33", Hydrologic Unit 03110203.
SITE NAME.—U.S. Geological Survey, test well 1.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 620 ft, cased to 270 ft, open hole.
DATUM.—Altitude of land-surface datum is 330 ft.
REMARKS.—None.
PERIOD OF RECORD.—March 1978 to current year. Continuous record since March 1978.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 102.70 ft below land-surface datum, May 14, 1978; lowest, 130.53 ft below land-surface datum, September 9, 1997.

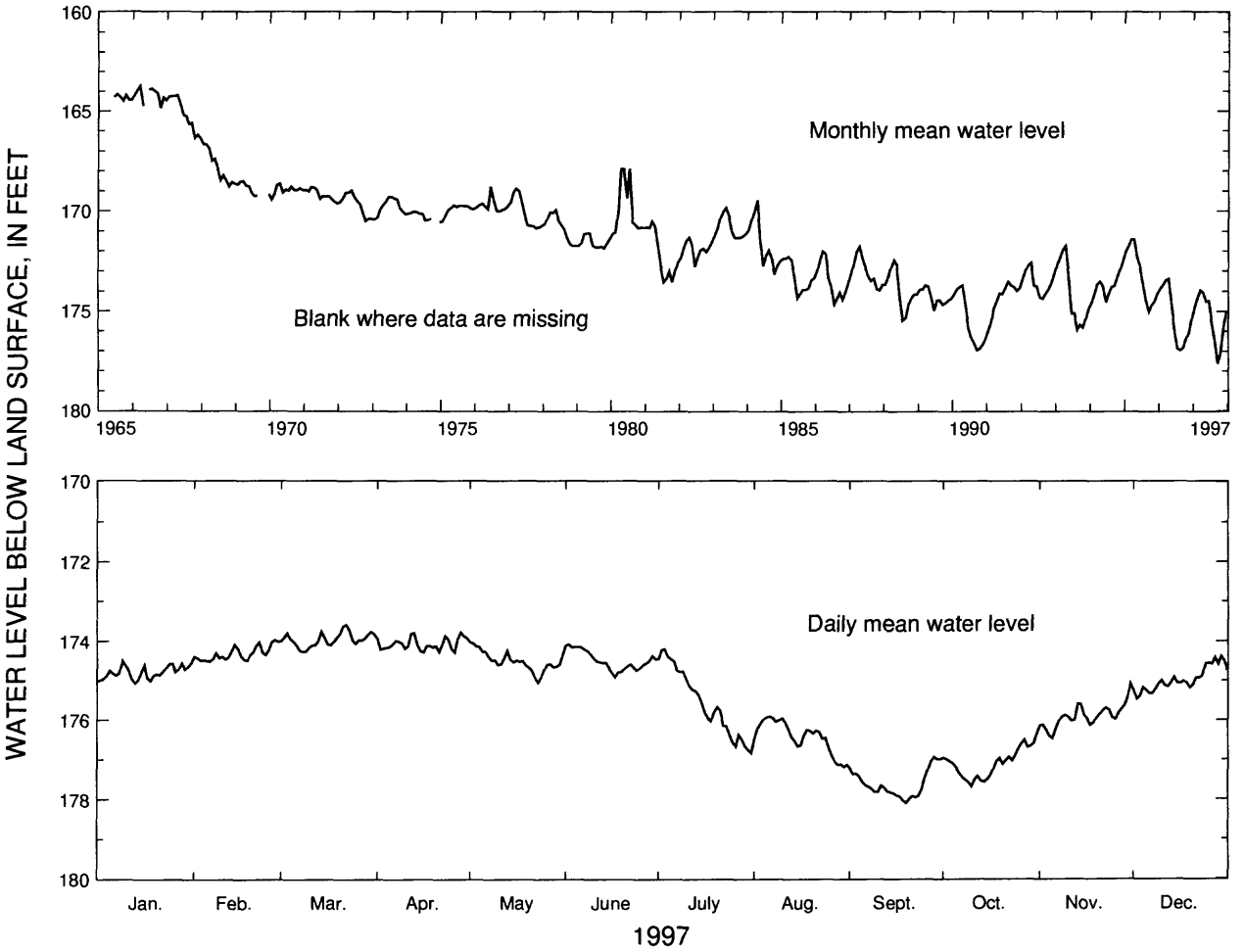


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	120.71	119.96	119.37	119.57	119.67	120.36	120.60	126.22	127.37	124.48	122.49	121.51
MEAN	121.05	120.35	119.83	120.05	120.95	120.83	123.84	128.26	129.77	125.95	123.61	122.27
LOW	121.36	120.61	120.21	120.60	122.61	121.26	127.66	130.20	130.53	127.18	124.40	122.86

SUMMARY FOR 1997 HIGH 119.37 (Mar. 22, 1997) MEAN 123.08 LOW 130.53 (Sept. 9, 1997)

Figure 25. Water level in observation well 18K049, Tift County.

IDENTIFICATION NUMBER.—18H016.
LOCATION.—Lat 31°08'13", long 83°26'03", Hydrologic Unit 03110203.
SITE NAME.—U.S. Geological Survey, Adel test well.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 8 in., depth 865 ft, cased to 207 ft, open hole.
DATUM.—Altitude of land-surface datum is 241 ft.
REMARKS.—None.
PERIOD OF RECORD.—December 1964 to current year. Continuous record since June 1965.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 163.34 ft below land-surface datum, July 5, 1966; lowest, 178.10 ft below land-surface datum, September 19, 1997.

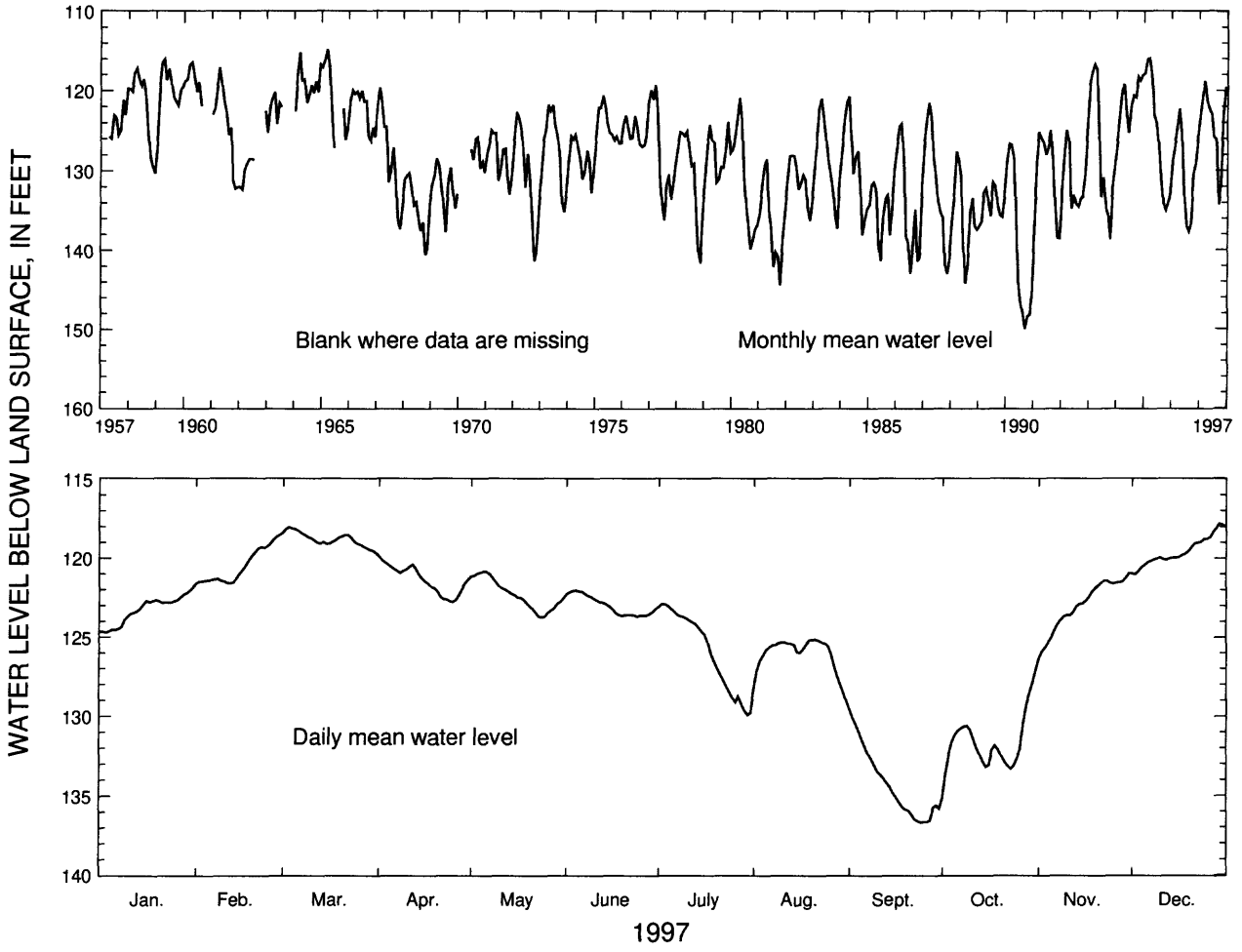


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	174.50	173.97	173.59	173.78	174.02	174.08	174.20	175.92	176.95	176.35	175.09	174.39
MEAN	174.79	174.31	173.96	174.07	174.51	174.49	175.55	176.43	177.63	177.11	175.92	174.98
LOW	175.07	174.51	174.27	174.28	175.05	174.91	176.84	177.19	178.10	177.69	176.48	175.47

SUMMARY FOR 1997 HIGH 173.59 (Mar. 22, 1997) MEAN 175.32 LOW 178.10 (Sept. 19, 1997)

Figure 26. Water level in observation well 18H016, Cook County.

IDENTIFICATION NUMBER.—19E009.
LOCATION.—Lat 30°49'51", long 83°16'58", Hydrologic Unit 03110202.
SITE NAME.—City of Valdosta.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled unused municipal supply well, diameter 20 in., depth 342 ft, cased to 200 ft, open hole.
DATUM.—Altitude of land-surface datum is 217 ft.
REMARKS.—None.
PERIOD OF RECORD.—February 1957 to current year. Continuous record since February 1957.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 112.69 ft below land-surface datum, March 9, 1964; lowest, 151.79 ft below land-surface datum, September 19, 1990.

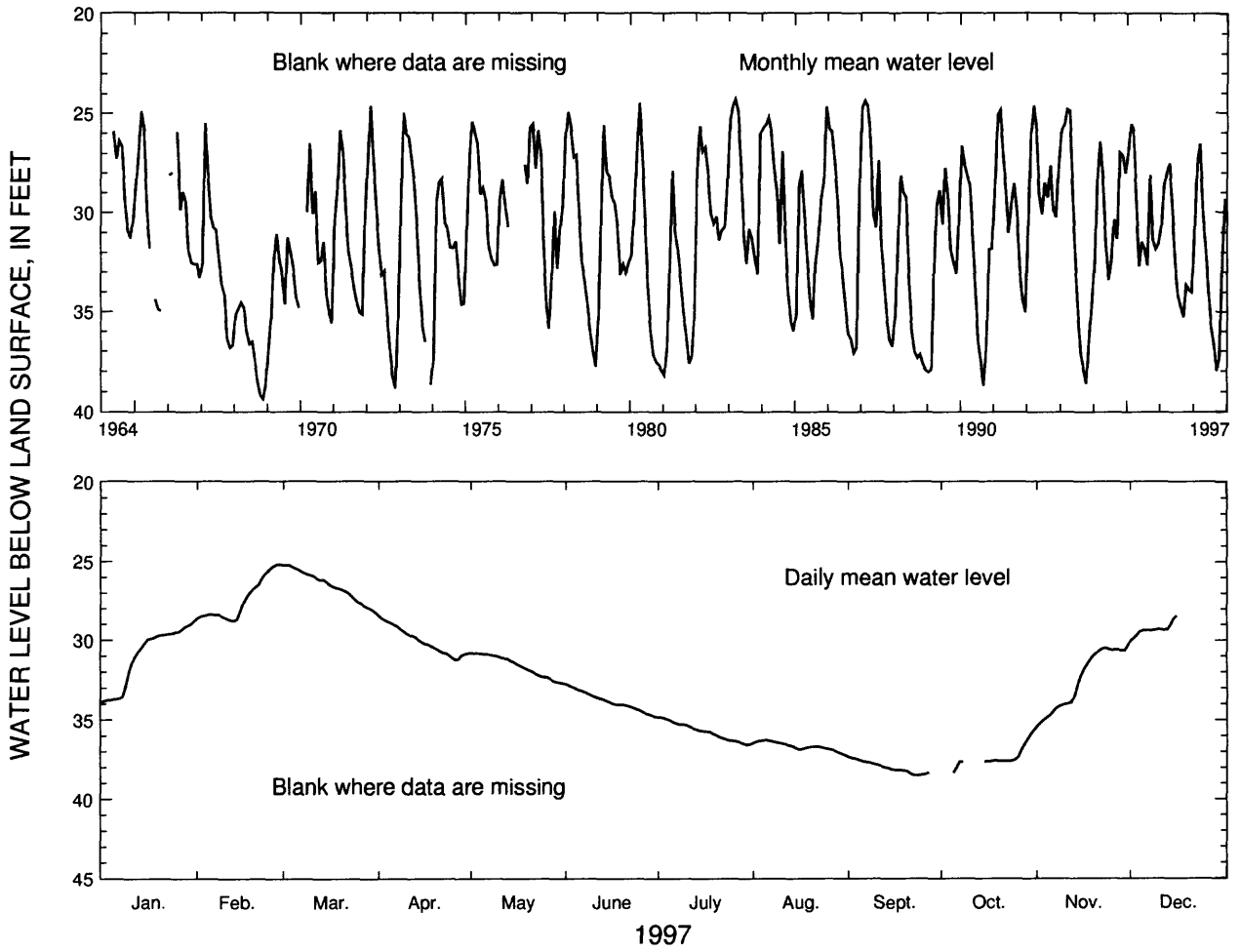


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	121.84	118.50	118.02	119.86	120.84	122.02	122.87	125.13	129.54	127.09	120.95	117.81
MEAN	123.28	120.51	118.79	121.34	122.28	122.97	125.81	126.07	134.25	131.67	122.97	119.55
LOW	124.70	121.61	119.65	122.74	123.69	123.67	129.90	129.04	136.68	135.17	126.35	121.01

SUMMARY FOR 1997 HIGH 117.81 (Dec. 29, 1997) MEAN 124.14 LOW 136.68 (Sept. 24, 1997)

Figure 27. Water level in observation well 19E009, Lowndes County.

IDENTIFICATION NUMBER.—21T001.
LOCATION.—Lat 32°27'06", long 83°03'28", Hydrologic Unit 03070102.
SITE NAME.—Danny Hogan.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled unused supply well, diameter 4 in., depth 123 ft, cased to 89 ft, open hole.
DATUM.—Altitude of land-surface datum is 259 ft.
REMARKS.—Water-level data for periods, September 28 to October 4, October 9-14, and December 17-31, 1997, are missing.
PERIOD OF RECORD.—March 1964 to current year. Continuous record since March 1964.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 23.62 ft below land-surface datum, January 26, 1987; lowest, 39.58 ft below land-surface datum, November 12, 1968.

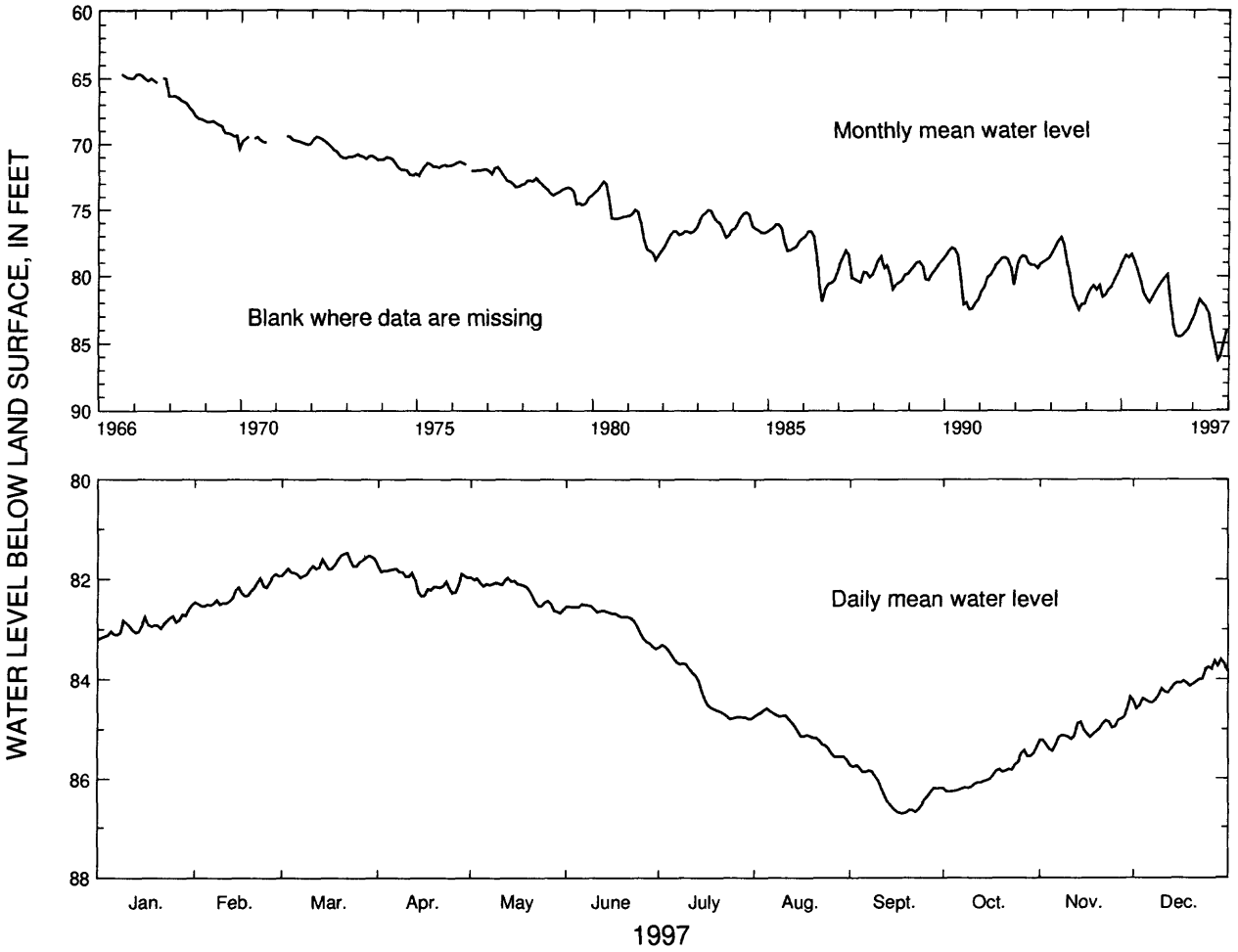


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	28.82	25.19	25.23	28.44	30.80	32.74	34.82	36.26	37.33	------	30.34	------
MEAN	31.00	27.43	26.54	30.03	31.60	33.81	35.72	36.66	37.99	------	32.49	------
LOW	33.87	28.79	28.26	31.25	32.70	34.80	36.56	37.24	38.49	------	35.41	------

SUMMARY FOR 1997 HIGH 25.19 (Feb. 28, 1997) MEAN 32.47 LOW 38.49 (Sept. 23, 1997)

Figure 28. Water level in observation well 21T001, Laurens County.

IDENTIFICATION NUMBER.—25Q001.
LOCATION.—Lat 32°02′25″, long 82°30′05″, Hydrologic Unit 03070106.
SITE NAME.—Montgomery County Board of Education.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled unused supply well, diameter 6 in., depth 536 ft, cased to 421 ft, open hole.
DATUM.—Altitude of land-surface datum is 190 ft.
REMARKS.—None.
PERIOD OF RECORD.—June 1966 to current year. Continuous record since June 1966.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 64.13 ft below land-surface datum, June 10, 1966; lowest, 86.72 ft below land-surface datum, September 18, 1997.

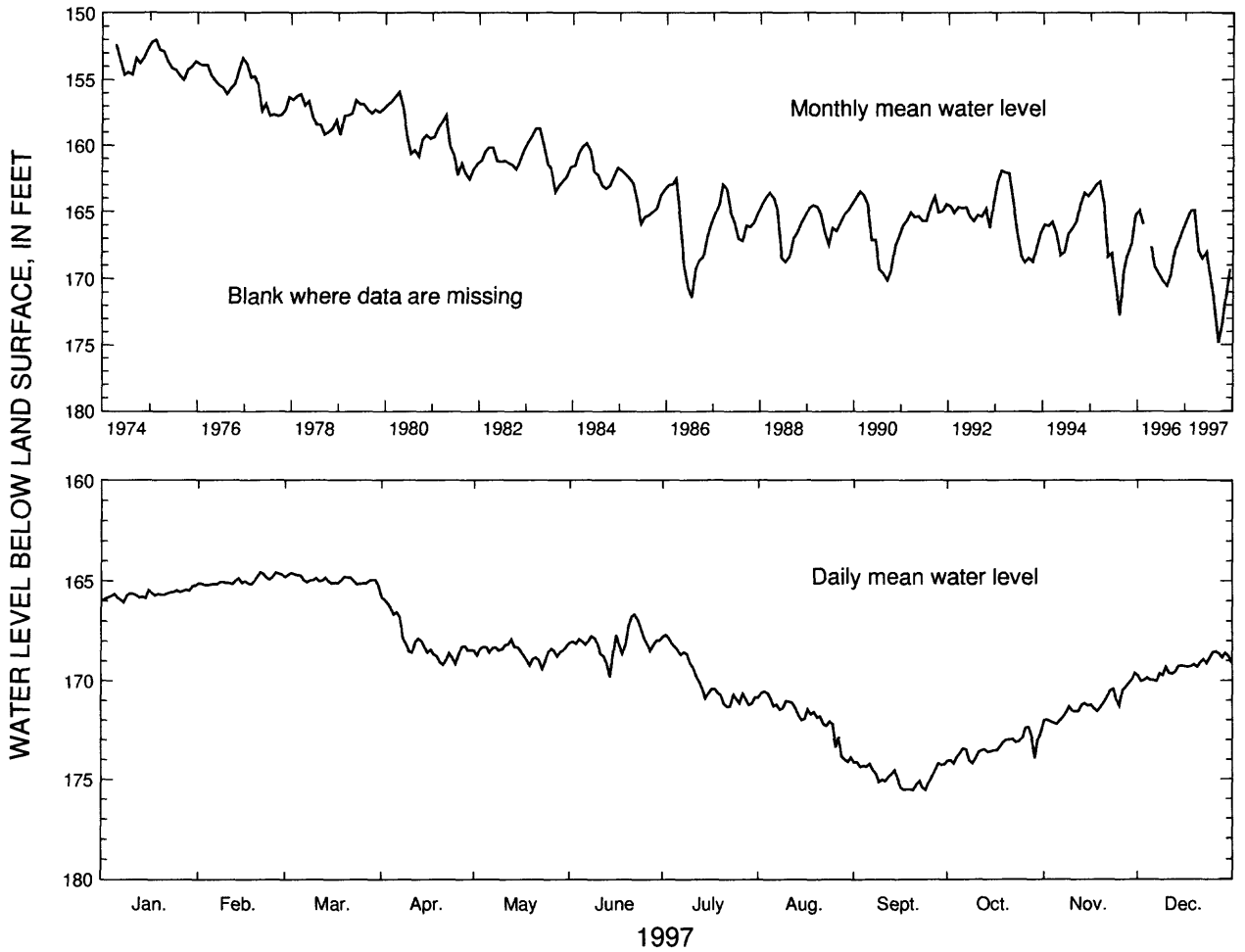


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	82.51	81.90	81.47	81.74	81.96	82.49	83.30	84.57	85.72	85.36	84.35	83.60
MEAN	82.92	82.29	81.72	82.02	82.23	82.76	84.19	85.04	86.27	85.92	85.02	84.10
LOW	83.20	82.54	81.97	82.33	82.67	83.38	84.78	85.62	86.72	86.27	85.44	84.58

SUMMARY FOR 1997 HIGH 81.47 (Mar. 22, 1997) MEAN 83.72 LOW 86.72 (Sept. 18, 1997)

Figure 29. Water level in observation well 25Q001, Montgomery County.

IDENTIFICATION NUMBER.—26R001.
LOCATION.—Lat 32°13'02", long 82°24'36", Hydrologic Unit 03070107.
SITE NAME.—City of Vidalia, well 2.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled municipal supply well, diameter 12 in., depth 1,000 ft, cased to 720 ft, open hole.
DATUM.—Altitude of land-surface datum is 285 ft.
REMARKS.—None.
PERIOD OF RECORD.—April 1974 to current. Continuous record since April 1974.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 151.64 ft below land-surface datum, April 15, 1974; lowest, 175.57 ft below land-surface datum, September 20, 1997.

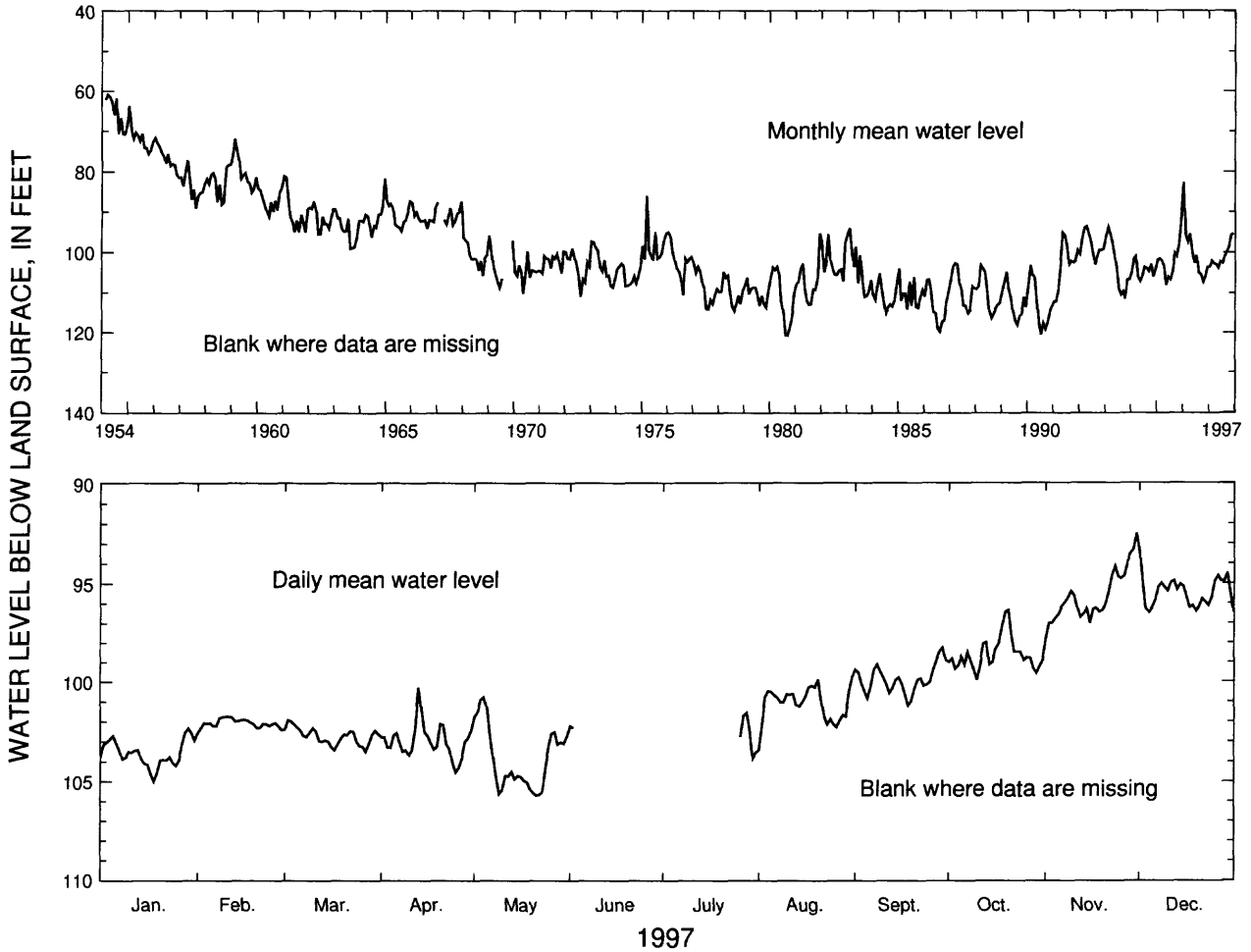


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	165.22	164.56	164.59	165.81	167.90	166.65	167.68	170.55	174.14	172.37	169.60	168.54
MEAN	165.66	164.97	164.94	167.99	168.54	168.04	169.93	171.88	174.86	173.41	171.21	169.31
LOW	166.06	165.20	165.22	169.18	169.40	169.80	171.31	174.14	175.57	174.21	172.19	170.01

SUMMARY FOR 1997 HIGH 164.56 (Feb. 21, 1997) MEAN 169.25 LOW 175.57 (Sept. 20, 1997)

Figure 30. Water level in observation well 26R001, Toombs County.

IDENTIFICATION NUMBER.—36Q008.
LOCATION.—Lat 32°05′30″, long 81°08′50″, Hydrologic Unit 03060204.
SITE NAME.—Layne-Atlantic Co.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled unused supply well, diameter 4 in., depth 406 ft, cased to 250 ft, open hole.
DATUM.—Altitude of land-surface datum is 9.91 ft.
REMARKS.—Water-level data for period, June 3 to July 25, 1997, are missing.
PERIOD OF RECORD.—February 1954 to current year. Continuous record since February 1954.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 49.17 ft below land-surface datum, July 11, 1954; lowest, 124.40 ft below land-surface datum, August 30, 1980.

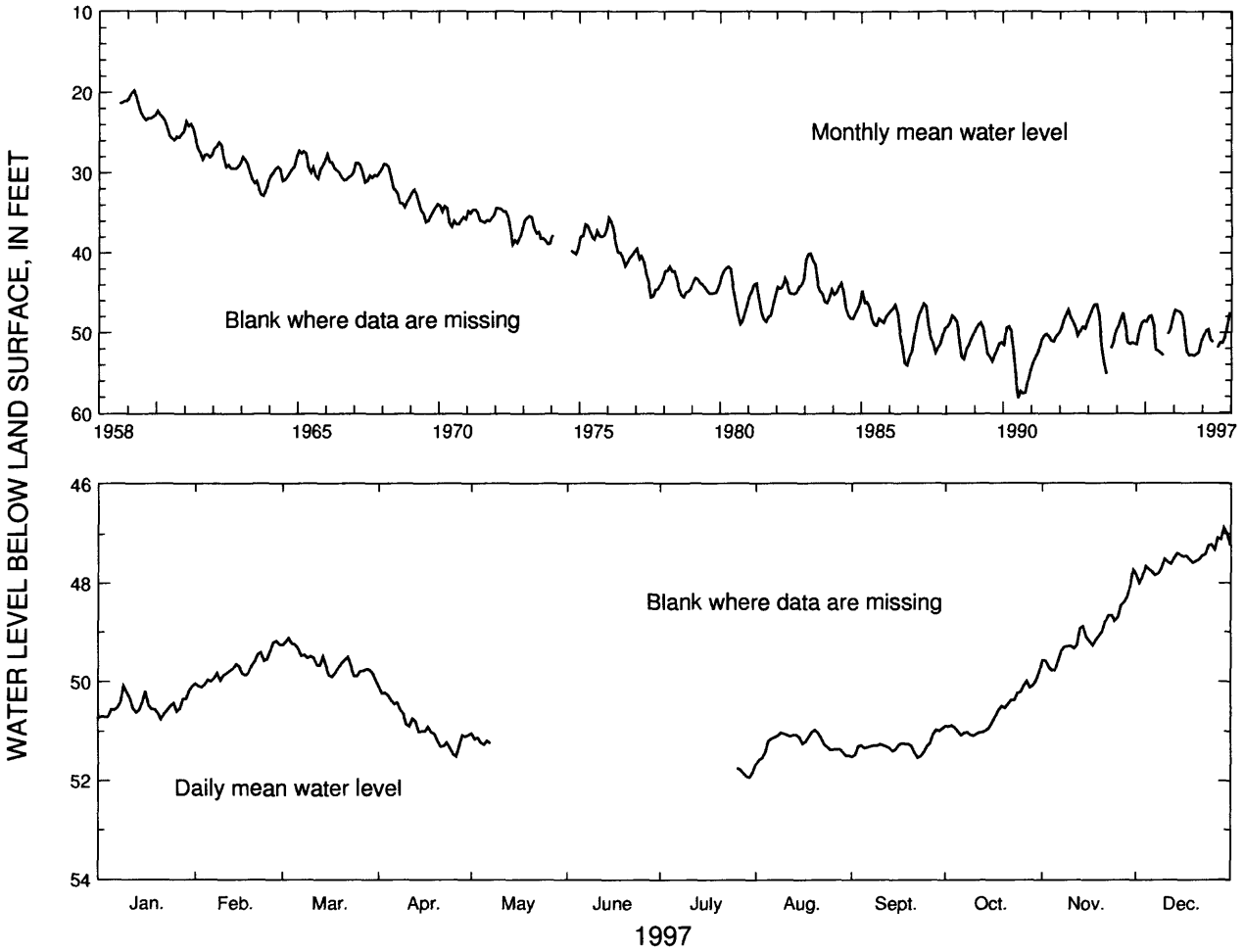


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	102.32	101.74	101.92	100.27	100.78	------	------	99.77	98.25	96.34	92.50	93.32
MEAN	103.58	102.07	102.71	102.96	103.84	------	------	101.12	99.88	98.62	95.65	95.45
LOW	104.99	102.57	103.49	104.53	105.70	------	------	103.43	101.21	99.92	97.84	96.48

SUMMARY FOR 1997 HIGH 92.50 (Nov. 30, 1997) MEAN 100.63 LOW 105.70 (May 21, 1997)

Figure 31. Water level in observation well 36Q008, Chatham County.

IDENTIFICATION NUMBER.—36Q020.
LOCATION.—Lat 32°00′18″, long 81°12′48″, Hydrologic Unit 03060204.
SITE NAME.—H.J. Morrison.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled unused supply well, diameter 3 in., depth 365 ft, cased to 330 ft, open hole.
DATUM.—Altitude of land-surface datum is 13 ft.
REMARKS.—Water-level data for period, May 8 to July 25, 1997, are missing.
PERIOD OF RECORD.—December 1957 to current year. Continuous record since August 1958.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 17.66 ft below land-surface datum, June 28, 1958; lowest, recorded, 58.56 ft below land-surface datum, July 12, 1990.

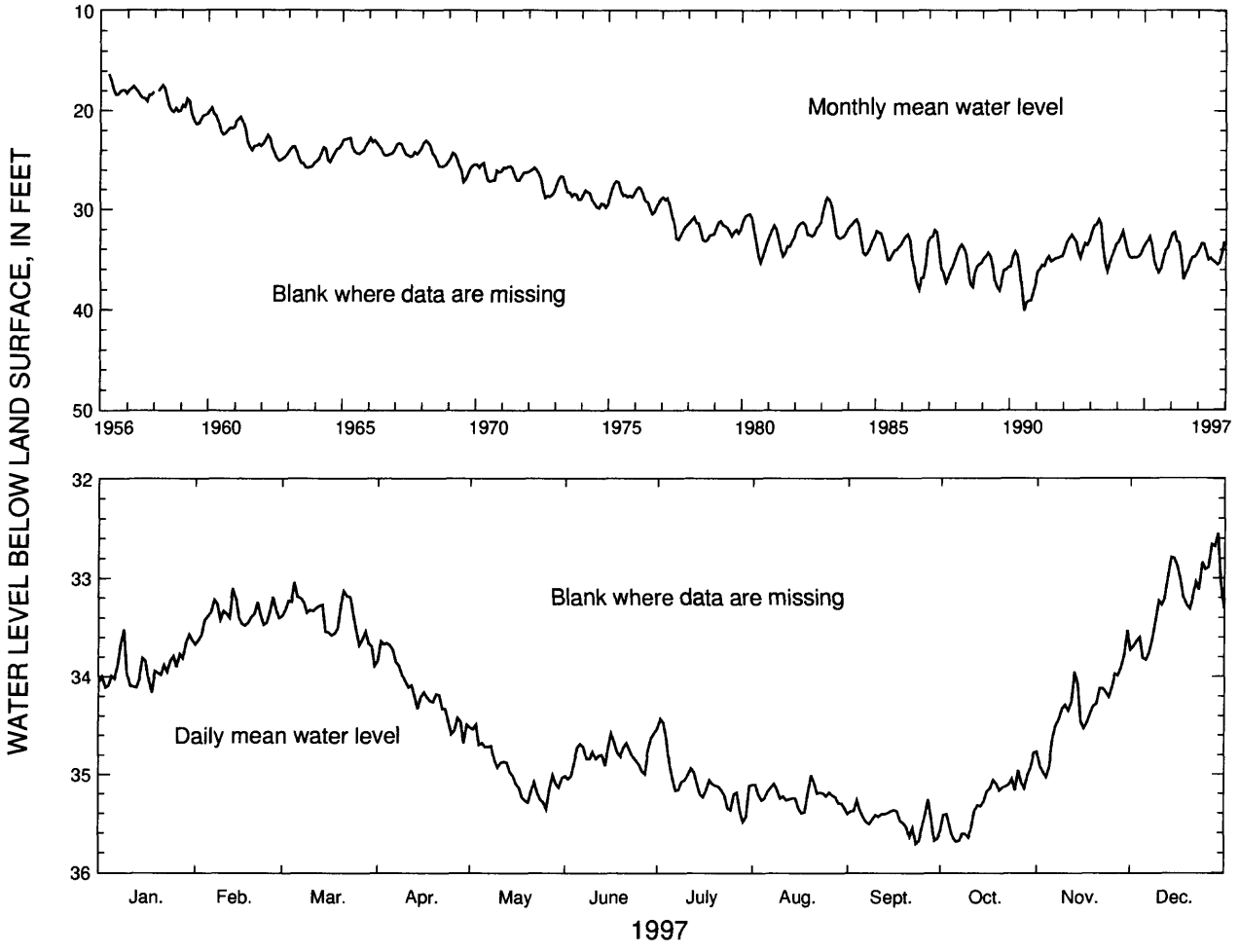


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	50.08	49.18	49.12	50.10	------	------	------	50.97	50.94	49.80	47.73	46.88
MEAN	50.49	49.73	49.60	50.88	------	------	------	51.24	51.29	50.64	49.03	47.49
LOW	50.76	50.11	49.96	51.51	------	------	------	51.67	51.53	51.09	49.77	48.00

SUMMARY FOR 1997 HIGH 46.88 (Dec. 29, 1997) MEAN 50.11 LOW 51.93 (July 30, 1997)

Figure 32. Water level in observation well 36Q020, Chatham County.

IDENTIFICATION NUMBER.—38Q002.
LOCATION.—Lat 32°02′01″, long 80°54′11″, Hydrologic Unit 03060204.
SITE NAME.—National Park Service, test well 6.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 8 in., depth 348 ft, cased to 110 ft, open hole.
DATUM.—Altitude of land-surface datum is 8.0 ft.
REMARKS.—Well pumped and sampled, May 12 and September 22, 1997, for analysis of chloride concentration.
PERIOD OF RECORD.—February 1956 to current year. Continuous record since February 1956.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 16.00 ft below land-surface datum, March 5, 1956; lowest, 40.69 ft below land-surface datum, July 16, 1990.

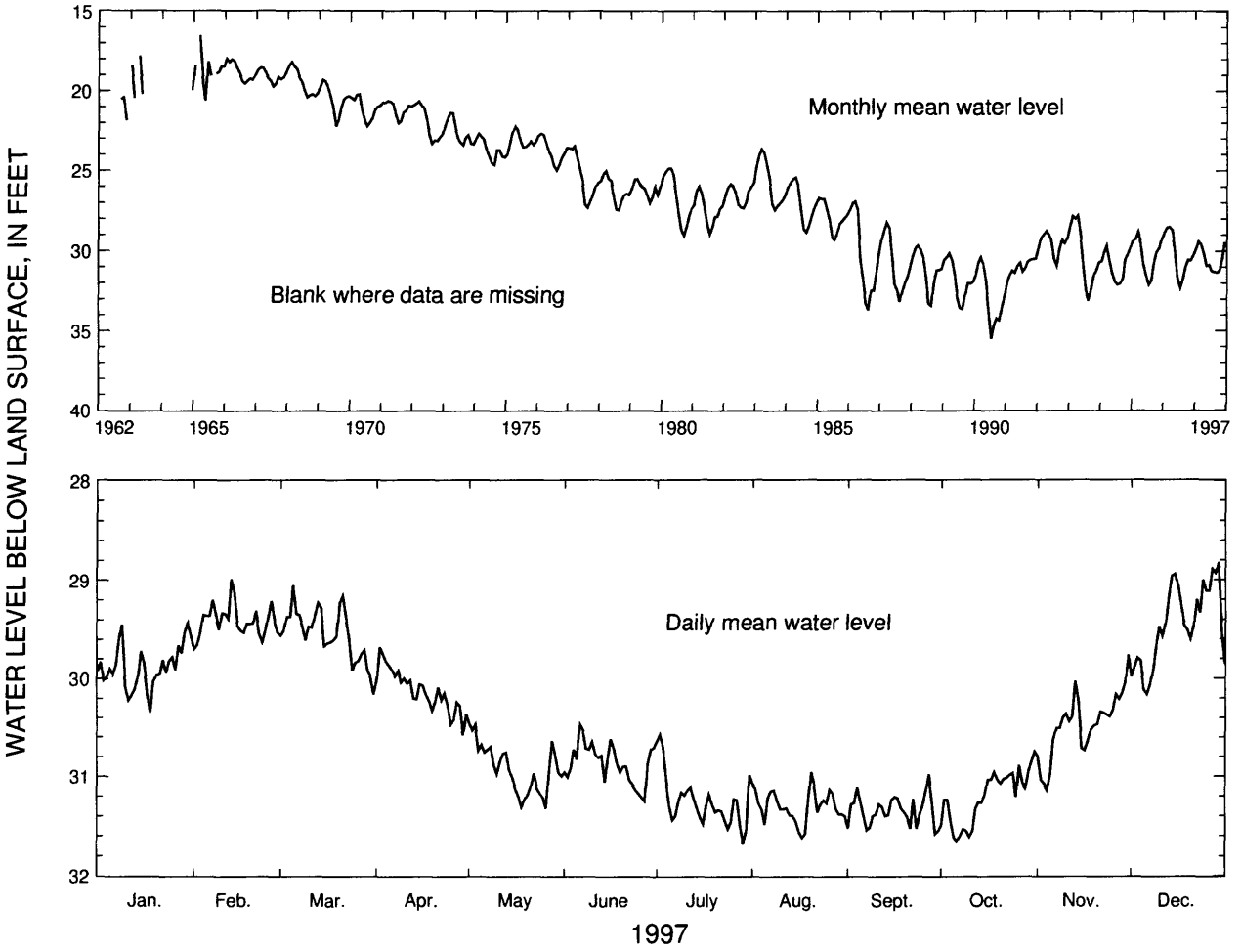


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	33.52	33.10	33.04	33.64	34.49	34.58	34.43	35.01	35.26	34.78	33.53	32.55
MEAN	33.91	33.38	33.39	34.15	34.98	34.81	35.08	35.22	35.47	35.29	34.33	33.20
LOW	34.16	33.67	33.89	34.68	35.36	35.05	35.49	35.40	35.71	35.69	35.03	33.83

SUMMARY FOR 1997 HIGH 32.55 (Dec. 29, 1997) MEAN 34.44 LOW 35.71 (Sept. 23, 1997)

Figure 33. Water level in observation well 38Q002, Chatham County.

IDENTIFICATION NUMBER.—39Q003.
LOCATION.—Lat 32°01′22″, long 80°51′01″, Hydrologic Unit 03060204.
SITE NAME.—U.S. Geological Survey, test well 7.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 10 in., depth 600 ft, cased to 129 ft, open hole.
DATUM.—Altitude of land-surface datum is 7.0 ft.
REMARKS.—None.
PERIOD OF RECORD.—May 1962 to current year. Continuous record since December 1964.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 17.80 ft below land-surface datum, April 11, 1963; lowest, 36.07 ft below land-surface datum, July 11-12, 1990.

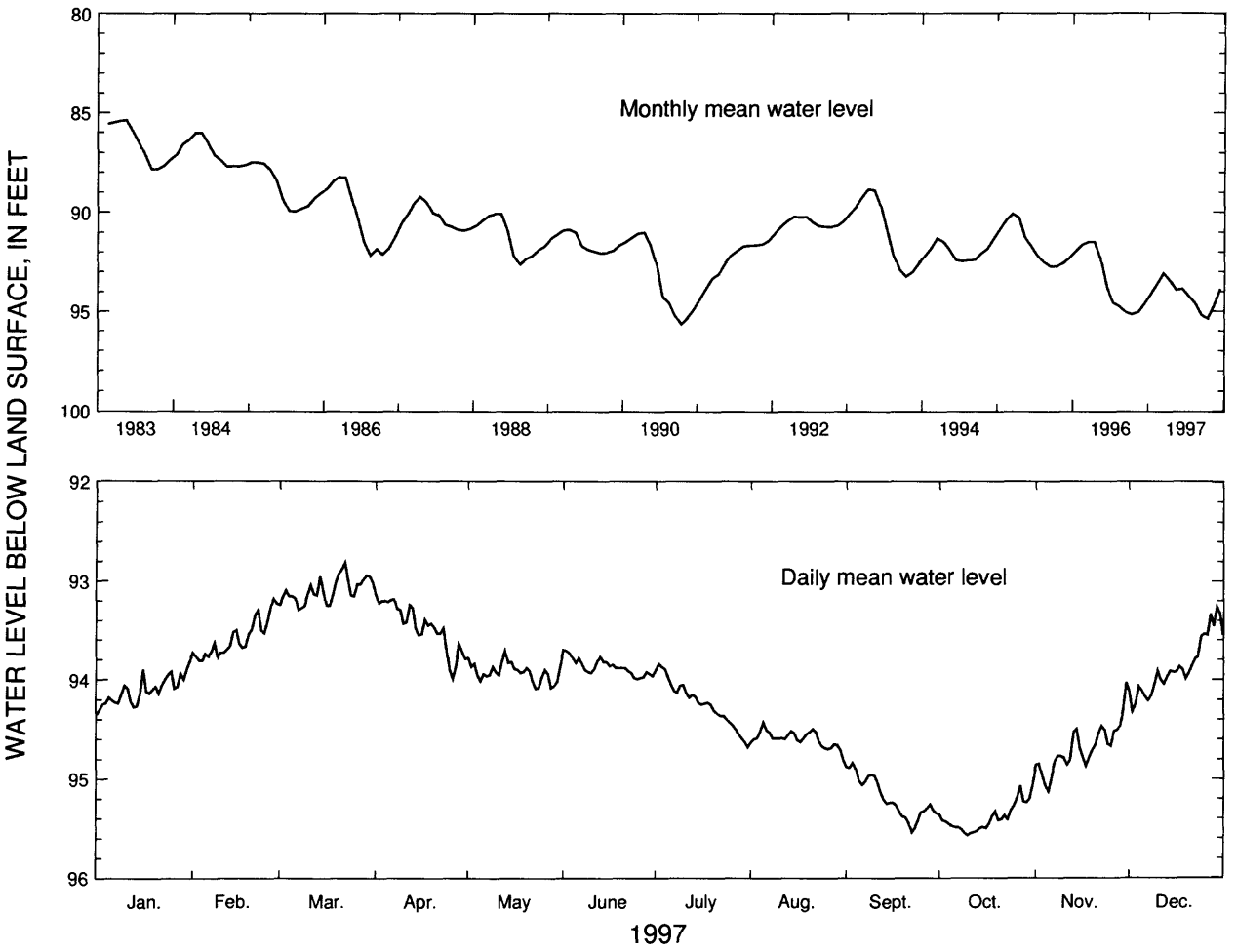


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	29.43	28.99	29.05	29.68	30.46	30.47	30.57	30.96	30.98	30.75	29.76	28.82
MEAN	29.88	29.41	29.55	30.12	30.92	30.87	31.25	31.30	31.34	31.21	30.47	29.45
LOW	30.35	29.70	30.16	30.58	31.32	31.25	31.68	31.62	31.58	31.65	31.14	30.16

SUMMARY FOR 1997 HIGH 28.82 (Dec. 29, 1997) MEAN 30.49 LOW 31.68 (July 29, 1997)

Figure 34. Water level in observation well 39Q003, Chatham County.

IDENTIFICATION NUMBER.—32R002.
LOCATION.—Lat 32°12′40″, long 81°41′15″, Hydrologic Unit 03060202.
SITE NAME.—Georgia Geologic Survey, Bulloch South, test well 1.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 804 ft, cased to 420 ft, open hole.
DATUM.—Altitude of land-surface datum is 120 ft.
REMARKS.—None.
PERIOD OF RECORD.—February 1983 to current year. Continuous record since February 1983.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 85.08 ft below land-surface datum, April 24, 1983; lowest, 95.94 ft below land-surface datum, October 8, 1990.

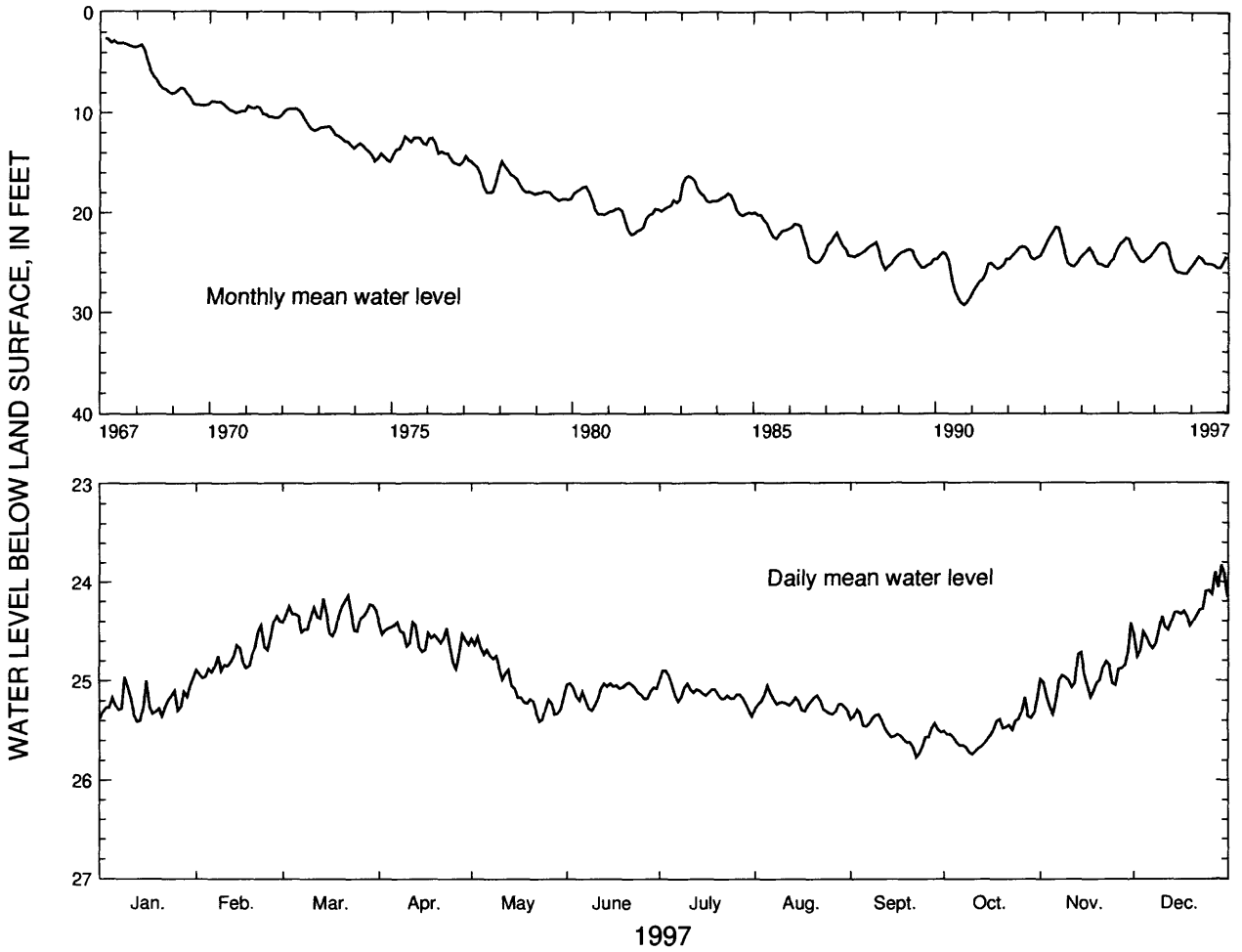


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	93.81	93.18	92.81	93.13	93.71	93.70	93.84	94.43	94.84	95.05	94.03	93.26
MEAN	94.11	93.58	93.09	93.46	93.92	93.87	94.24	94.60	95.19	95.39	94.70	93.87
LOW	94.35	93.81	93.29	93.99	94.09	93.99	94.68	94.81	95.54	95.57	95.13	94.32

SUMMARY FOR 1997 HIGH 92.81 (Mar. 22, 1997) MEAN 94.17 LOW 95.57 (Oct. 10, 1997)

Figure 35. Water level in observation well 32R002, Bulloch County.

IDENTIFICATION NUMBER.—34N089.
LOCATION.—Lat 31°52'14", long 81°23'53", Hydrologic Unit 03060204.
SITE NAME.—U.S. Geological Survey, test well 1.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 789 ft, cased to 410 ft, open hole.
DATUM.—Altitude of land-surface datum is 17 ft.
REMARKS.—None.
PERIOD OF RECORD.—February 1967 to current year. Continuous record since February 1967.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 2.34 ft below land-surface datum, March 6, 1967; lowest, 29.43 ft below land-surface datum, October 3, 1990.

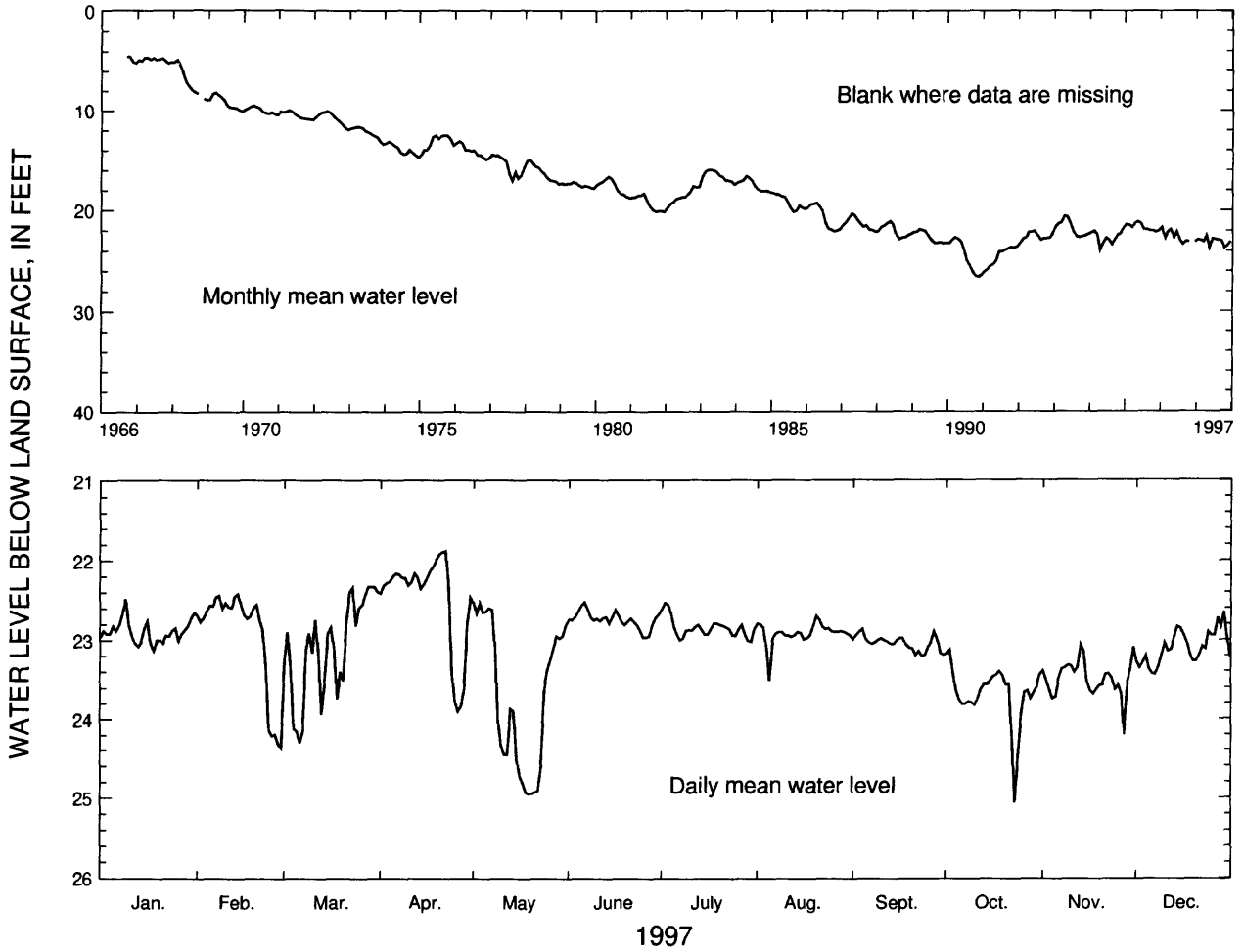


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	24.96	24.35	24.14	24.41	24.56	25.02	24.90	25.05	25.29	25.17	24.42	23.83
MEAN	25.22	24.73	24.35	24.57	25.03	25.11	25.12	25.23	25.50	25.51	24.97	24.35
LOW	25.41	24.97	24.55	24.88	25.41	25.30	25.36	25.34	25.77	25.74	25.34	24.76

SUMMARY FOR 1997 HIGH 23.83 (Dec. 29, 1997) MEAN 24.98 LOW 25.77 (Sept. 22, 1997)

Figure 36. Water level in observation well 34N089, Liberty County.

IDENTIFICATION NUMBER.—35M013.
LOCATION.—Lat 31°38′23″, long 81°15′42″, Hydrologic Unit 03060204.
SITE NAME.—U.S. Fish and Wildlife Service.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled unused supply well, diameter 10 in., depth 553 ft, cased to 376 ft, open hole.
DATUM.—Altitude of land-surface datum is 16.3 ft.
REMARKS.—None.
PERIOD OF RECORD.—September 1966 to current year. Continuous record since September 1966.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 4.35 ft below land-surface datum, October 4, 1966; lowest, 26.88 ft below land-surface datum, November 14, 1990.

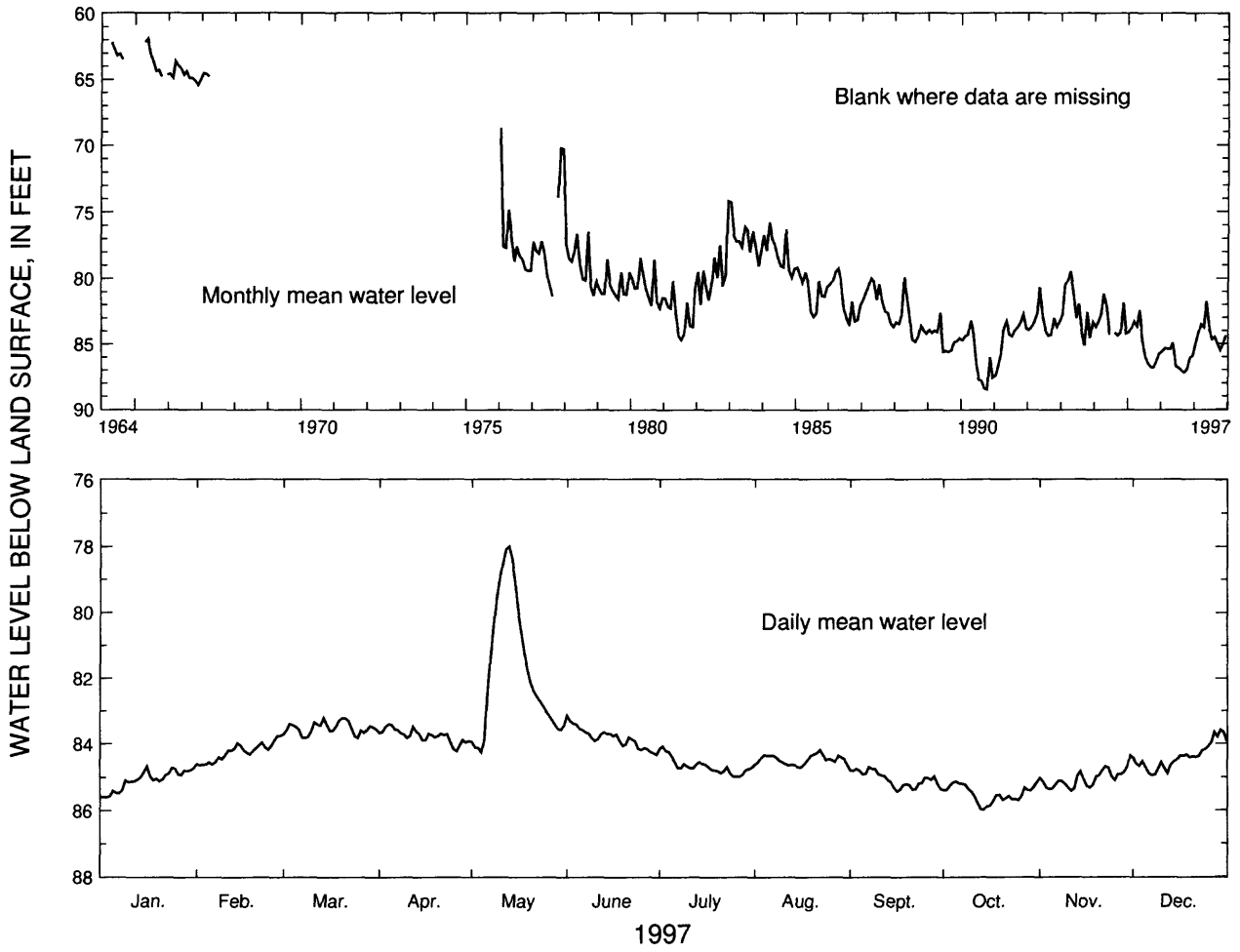


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	22.48	22.42	22.33	21.88	22.53	22.52	22.53	22.70	22.86	23.13	23.06	22.65
MEAN	22.89	22.93	23.08	22.47	23.70	22.75	22.85	22.92	23.04	23.69	23.50	23.10
LOW	23.13	24.37	24.30	23.90	24.95	22.97	23.02	23.52	23.20	25.06	24.20	23.44

SUMMARY FOR 1997 HIGH 21.88 (Apr. 22, 1997) MEAN 23.08 LOW 25.06 (Oct. 23, 1997)

Figure 37. Water level in observation well 35M013, McIntosh County.

IDENTIFICATION NUMBER.—30L003.
LOCATION.—Lat 31°37'01", long 81°54'34", Hydrologic Unit 03070106.
SITE NAME.—City of Jesup Housing Authority.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled unused supply well, diameter 4 in., depth 584 ft, cased to 472 ft, open hole.
DATUM.—Altitude of land-surface datum is 107 ft.
REMARKS.—None.
PERIOD OF RECORD.—January 1964 to current year. Continuous record January 1964 to March 1967, and since January 1976.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 59.98 ft below land-surface datum, April 19, 1964; lowest, 88.91 ft below land-surface datum, October 7, 1990.

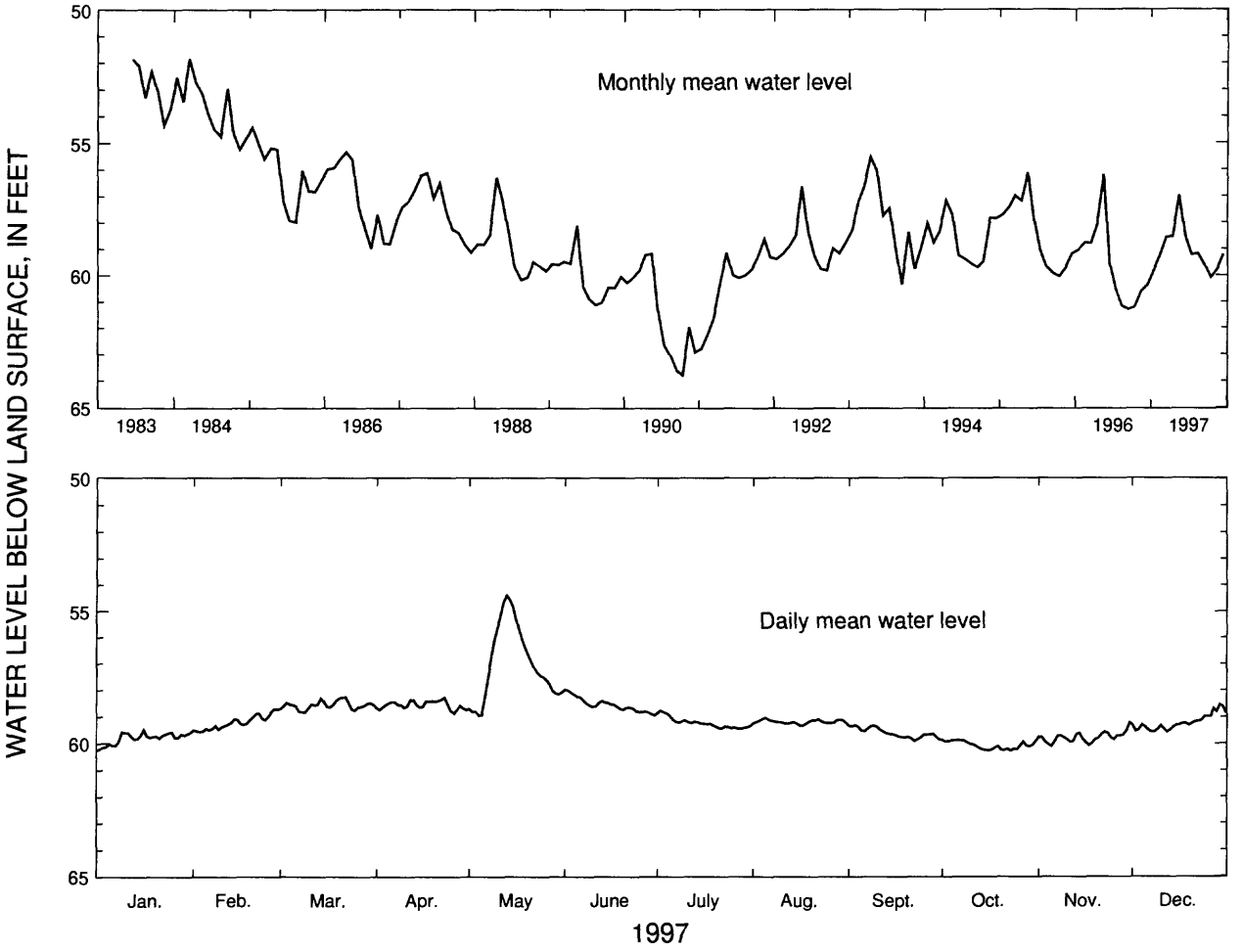


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	84.67	83.76	83.21	83.41	78.00	83.14	84.07	84.18	84.69	85.13	84.36	83.59
MEAN	85.08	84.24	83.52	83.75	81.76	83.82	84.66	84.47	85.05	85.51	85.05	84.38
LOW	85.60	84.63	83.82	84.22	84.25	84.32	84.98	84.69	85.42	85.99	85.42	84.94

SUMMARY FOR 1997 HIGH 78.00 (May 13, 1997) MEAN 84.27 LOW 85.99 (Oct. 14, 1997)

Figure 38. Water level in observation well 30L003, Wayne County.

IDENTIFICATION NUMBER.—32L015.
LOCATION.—Lat 31°32′52″, long 81°43′36″, Hydrologic Unit 03070106.
SITE NAME.—Georgia Geologic Survey, Gardi, test well 1.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 750 ft, cased to 545 ft, open hole.
DATUM.—Altitude of land-surface datum is 74 ft.
REMARKS.—None.
PERIOD OF RECORD.—June 1983 to current year. Continuous record since June 1983.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 49.12 ft below land-surface datum, March 19, 1984; lowest, 64.05 ft below land-surface datum, October 7-8, 1990.

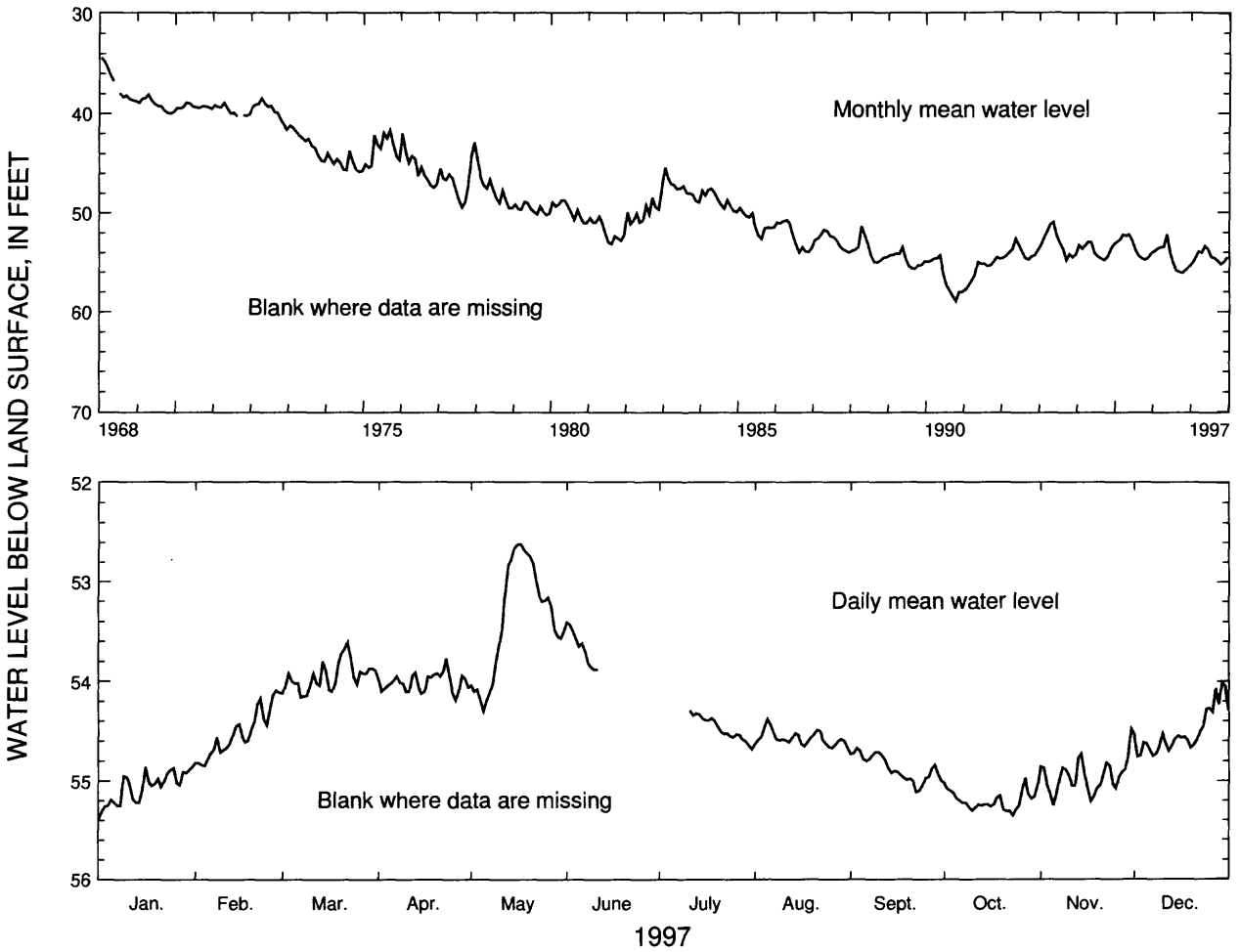


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	59.47	58.69	58.26	58.27	54.39	57.97	58.75	59.02	59.30	59.86	59.22	58.55
MEAN	59.79	59.20	58.55	58.54	56.97	58.53	59.22	59.18	59.60	60.07	59.78	59.21
LOW	60.26	59.55	58.81	58.86	58.94	58.92	59.44	59.32	59.90	60.27	60.10	59.55

SUMMARY FOR 1997 HIGH 54.39 (May 13, 1997) MEAN 59.05 LOW 60.27 (Oct. 23, 1997)

Figure 39. Water level in observation well 32L015, Wayne County.

IDENTIFICATION NUMBER.—33M004.
LOCATION.—Lat 31°38'54", long 81°36'04", Hydrologic Unit 03070106.
SITE NAME.—U.S. Geological Survey, test well 3.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 reduced to 3 in., depth 872 ft, cased to 538 ft, open hole.
DATUM.—Altitude of land-surface datum is 61.2 ft.
REMARKS.—Water-level data for period, June 12 to July10, 1997, are missing.
PERIOD OF RECORD.—January 1968 to current year. Continuous record since January 1968.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 34.04 ft below land-surface datum, January 14, 1968; lowest, 59.00 ft below land-surface datum, October 8, 1990.

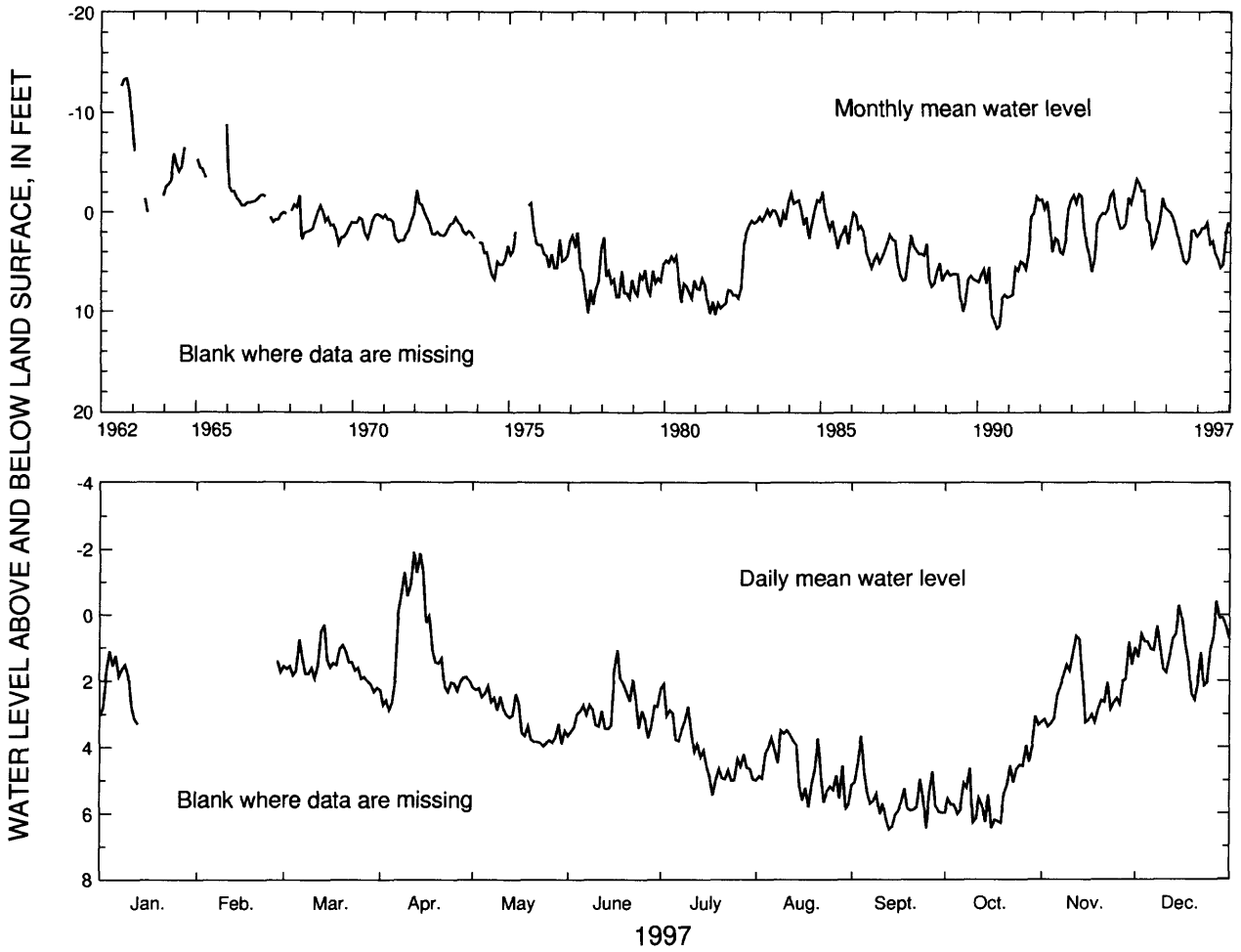


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	54.86	54.09	53.61	53.77	52.62	------	------	54.38	54.67	54.97	54.48	54.01
MEAN	55.07	54.52	53.95	54.01	53.37	------	------	54.57	54.87	55.20	54.96	54.51
LOW	55.38	54.85	54.16	54.19	54.30	------	------	54.67	55.11	55.35	55.25	54.76

SUMMARY FOR 1997 HIGH 52.62 (May 16-17, 1997) MEAN 54.47 LOW 55.38 (Jan. 1, 1997)

Figure 40. Water level in observation well 33M004, Long County.

IDENTIFICATION NUMBER.—33H127.
LOCATION.—Lat 31°10′06″, long 81°30′16″, Hydrologic Unit 03070203.
SITE NAME.—U.S. Geological Survey, test well 3.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan; lower water-bearing zone.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 1,002 ft, cased to 823 ft, open hole.
DATUM.—Altitude of land-surface datum is 6.2 ft.
REMARKS.—Well pumped and sampled, May 16 and September 25, 1997, for analysis of chloride concentration. Water-level data for period, January 14 to February 26, 1997, are missing.
PERIOD OF RECORD.—August 1962 to current year. Continuous record since August 1962.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 14.00 ft above land-surface datum, October 9, 1962; lowest, 13.22 ft below land-surface datum, July 9, 1990.



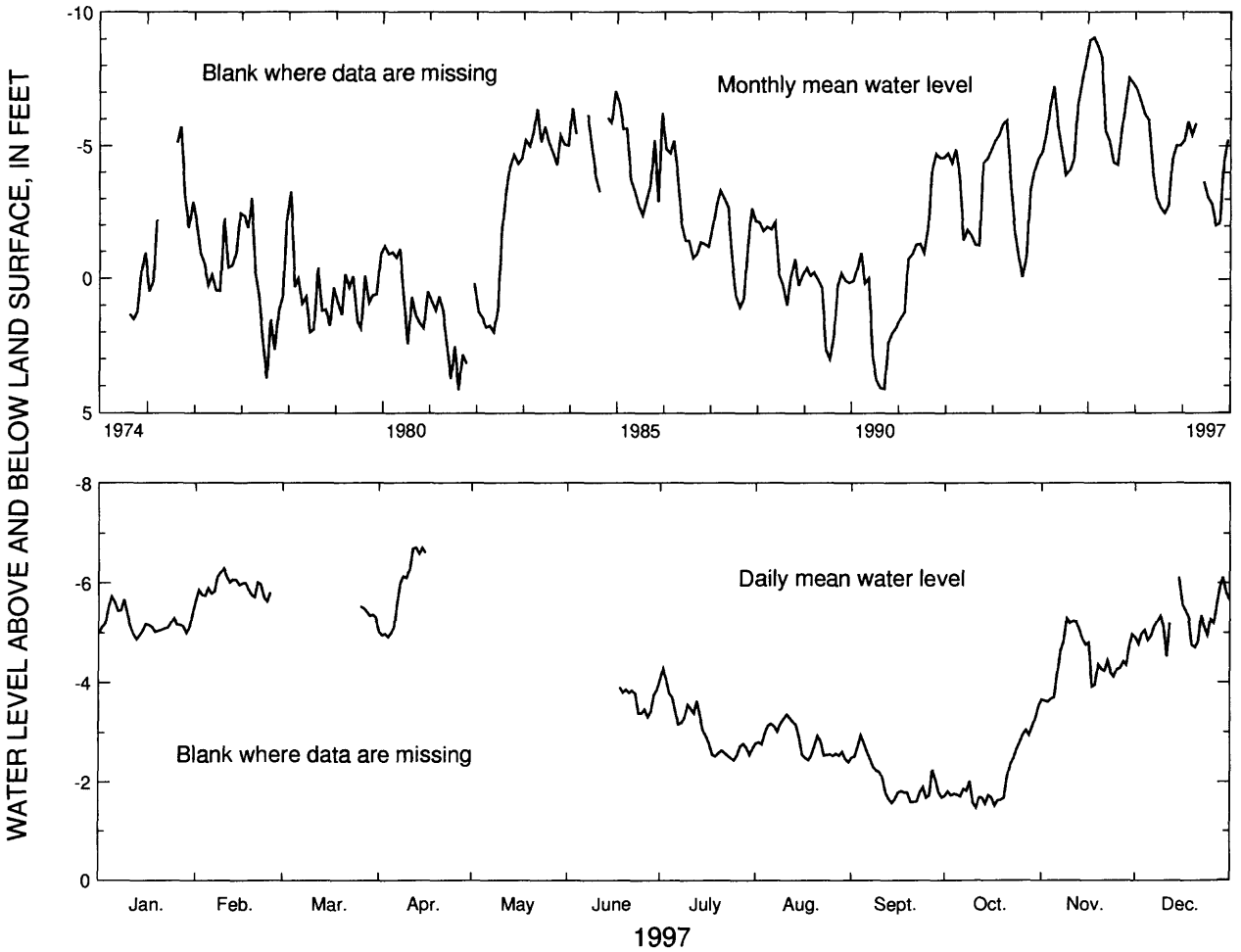
1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	------	------	0.29	-1.93	2.15	1.07	2.09	3.49	3.66	3.06	0.65	-0.41
MEAN	------	------	1.53	0.98	3.13	2.87	4.09	4.69	5.56	5.26	2.34	1.00
LOW	------	------	2.33	2.87	3.97	3.72	5.45	5.84	6.48	6.45	3.38	2.58

SUMMARY FOR 1997 HIGH -1.93 (Apr. 12, 1997) MEAN 3.09 LOW 6.48 (Sept. 13, 1997)

[Negative value indicates water level above land surface]

Figure 41. Water level in observation well 33H127, Glynn County.

IDENTIFICATION NUMBER.—34H403.
LOCATION.—Lat 31°08′22″, long 81°29′42″, Hydrologic Unit 03070203.
SITE NAME.—U.S. Geological Survey, test well 24.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan; lower water-bearing zone.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 982 ft, cased to 788 ft, open hole.
DATUM.—Altitude of land-surface datum is 9.6 ft.
REMARKS.—Well pumped and sampled, May 16 and September 25, 1997, for analysis of chloride concentration. Water-level data for periods, February 26 to March 25, April 17 to June 17, and December 13-14, 1997, are missing.
PERIOD OF RECORD.—August 1974 to current year. Continuous record since August 1974.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 12.79 ft above land-surface datum, December 29, 1985; lowest, 4.76 ft below land-surface datum, September 14, 1990.



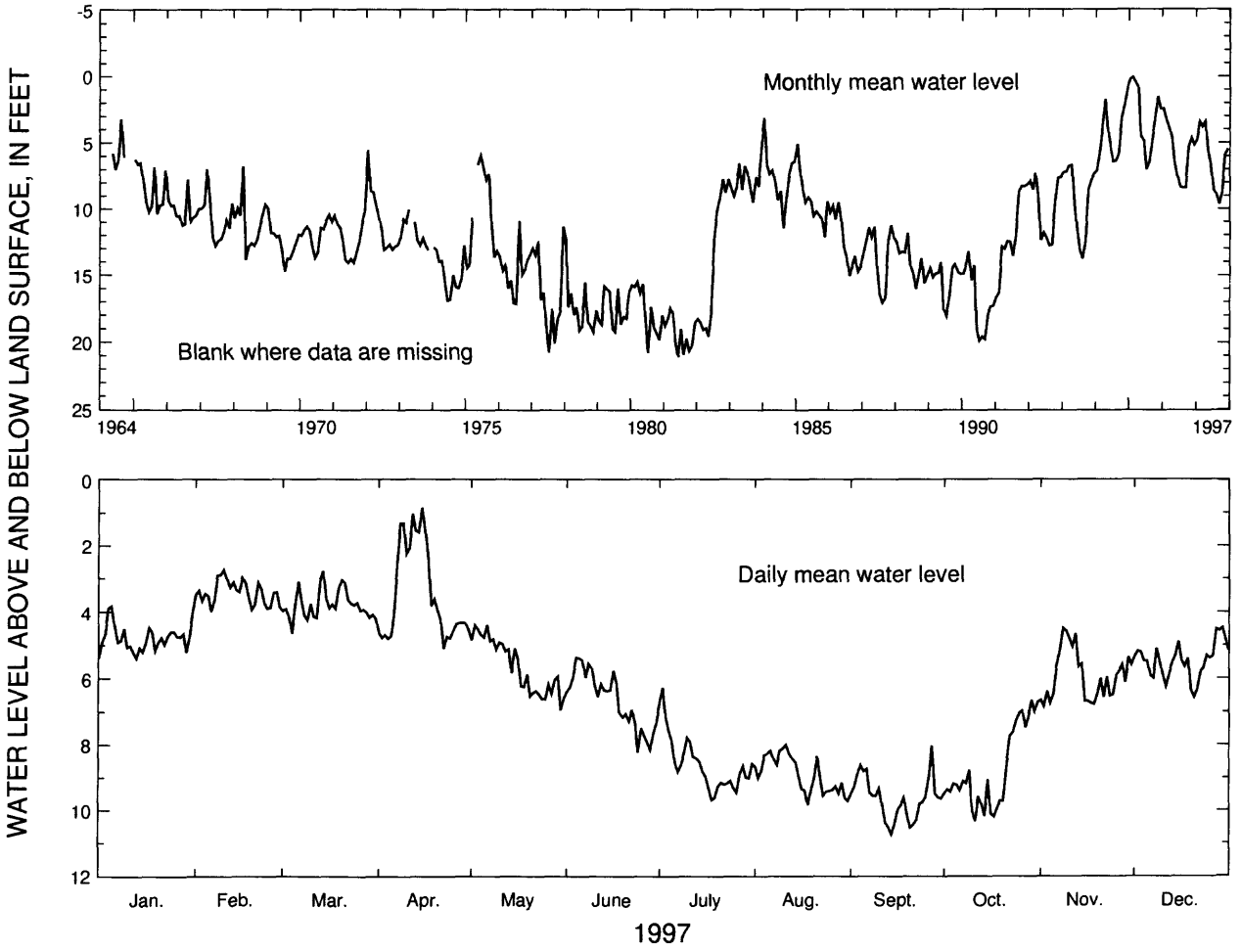
1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	-5.73	-6.29	------	------	------	------	-4.28	-3.36	-2.94	-3.53	-5.28	-6.11
MEAN	-5.21	-5.91	------	------	------	------	-3.07	-2.82	-2.02	-2.10	-4.43	-5.23
LOW	-4.87	-5.63	------	------	------	------	-2.44	-2.40	-1.57	-1.47	-3.61	-4.51

SUMMARY FOR 1997 HIGH -6.71 (Apr. 13, 1997) MEAN -3.94 LOW -1.47 (Oct. 11, 1997)

[Negative value indicates water level above land surface]

Figure 42. Water level in observation well 34H403, Glynn County.

IDENTIFICATION NUMBER.—33H133.
LOCATION.—Lat 31°10′08″, long 81°30′16″, Hydrologic Unit 03070203.
SITE NAME.—U.S. Geological Survey, test well 6.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan; upper water-bearing zone.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 790 ft, cased to 520 ft, open hole.
DATUM.—Altitude of land-surface datum is 6.7 ft.
REMARKS.—Well pumped and sampled, May 16 and October 12, 1997, for analysis of chloride concentration.
PERIOD OF RECORD.—May 1964 to current year. Continuous record since May 1964.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 9.07 ft above land-surface datum, December 26, 1965; lowest, 21.87 ft below land-surface datum, July 22, 1977.

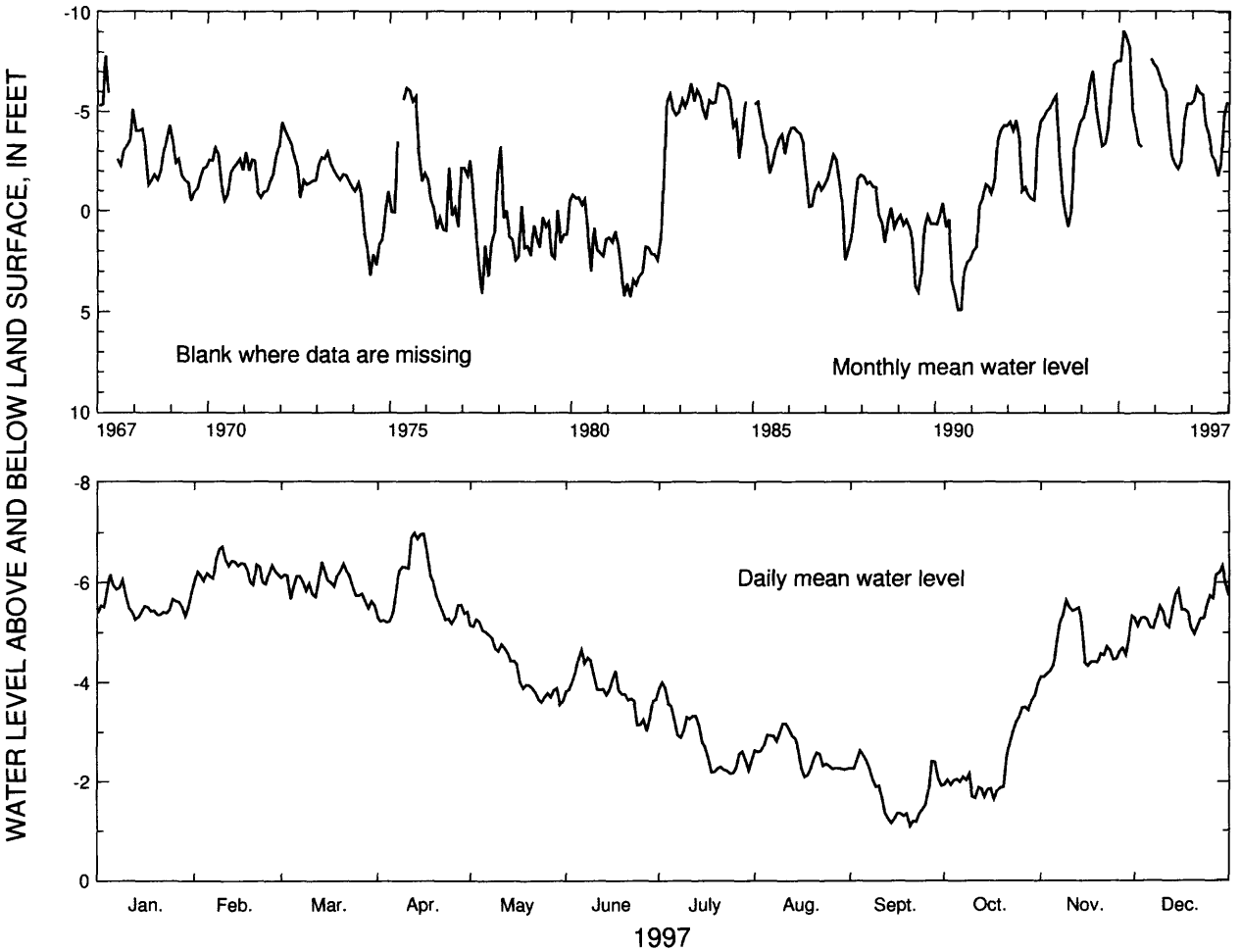


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	3.83	2.73	2.77	0.84	4.38	5.36	6.27	8.01	8.03	6.65	4.49	4.48
MEAN	4.78	3.42	3.78	3.42	5.62	6.64	8.58	8.91	9.64	8.78	5.93	5.47
LOW	5.39	3.98	4.63	5.09	6.94	8.23	9.68	9.82	10.74	10.34	6.84	6.57

SUMMARY FOR 1997 HIGH 0.84 (Apr. 15, 1997) MEAN 6.27 LOW 10.74 (Sept. 14, 1997)

Figure 43. Water level in observation well 33H133, Glynn County.

IDENTIFICATION NUMBER.—34H371.
LOCATION.—Lat 31°08'18", long 81°30'16", Hydrologic Unit 03070203.
SITE NAME.—U.S. Geological Survey, test well 11.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan; upper water-bearing zone.
WELL CHARACTERISTICS.—Drilled observation well, diameter 3-2 in., depth 719 ft, cased to 512 ft, open hole.
DATUM.—Altitude of land-surface datum is 9.8 ft.
REMARKS.—Well pumped and sampled, May 16, 1997, for analysis of chloride concentration.
PERIOD OF RECORD.—January 1967 to current year. Continuous record since January 1967.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 9.95 ft above land-surface datum, March 18-19, 1967; lowest, 5.64 ft below land-surface datum, September 14, 1990.



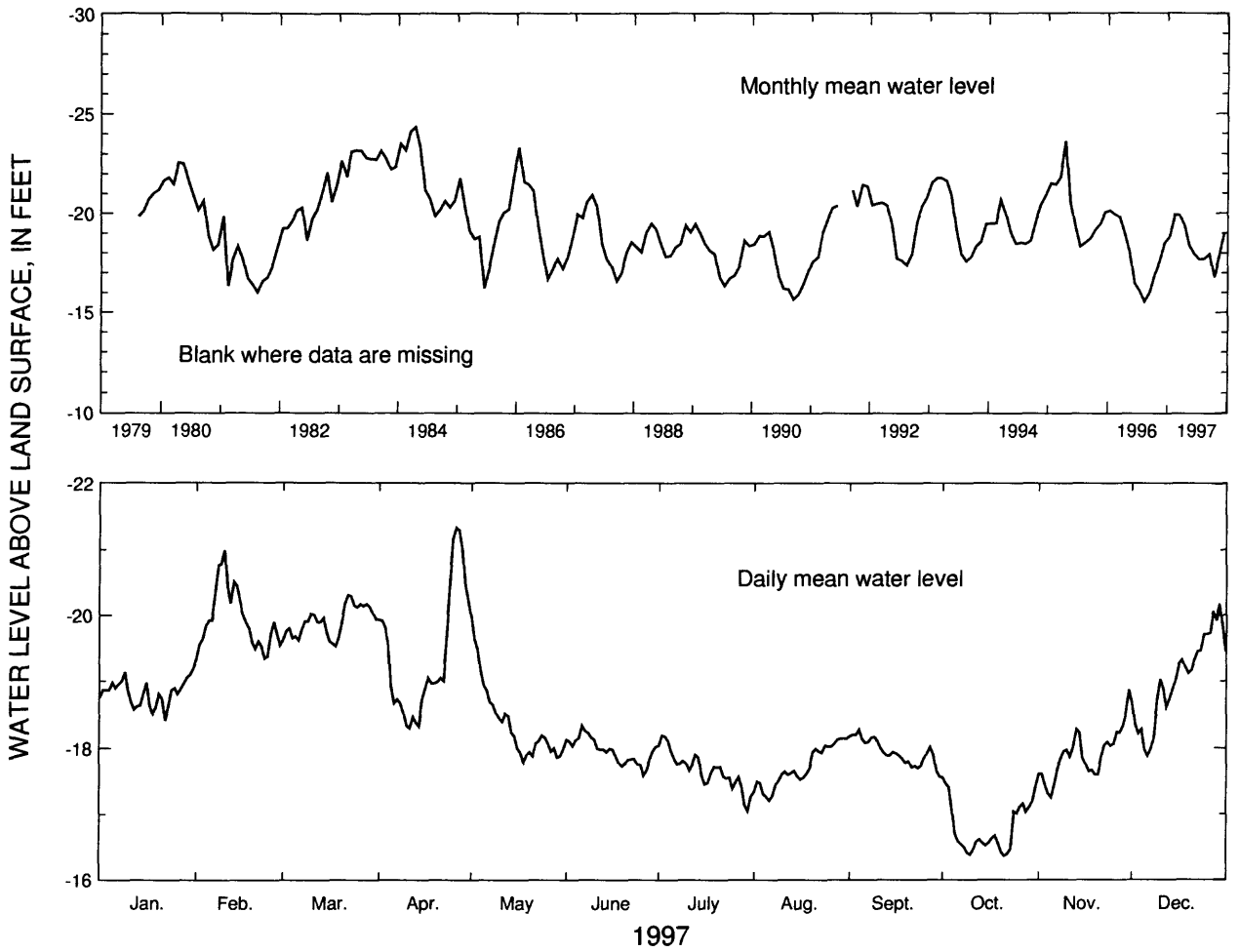
1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	-6.16	-6.71	-6.41	-6.99	-5.26	-4.65	-4.00	-3.17	-2.62	-3.98	-5.64	-6.33
MEAN	-5.57	-6.25	-5.96	-5.85	-4.32	-3.84	-2.83	-2.58	-1.77	-2.40	-4.75	-5.47
LOW	-5.26	-5.95	-5.49	-5.18	-3.55	-3.02	-2.16	-2.09	-1.09	-1.64	-4.11	-4.97

SUMMARY FOR 1997 HIGH -6.99 (Apr. 13, 1997) MEAN -4.29 LOW -1.09 (Sept. 20, 1997)

[Negative value indicates water level above land surface]

Figure 44. Water level in observation well 34H371, Glynn County.

IDENTIFICATION NUMBER.—33E027.
LOCATION.—Lat 30°47'56", long 81°31'11", Hydrologic Unit 03070203.
SITE NAME.—U.S. Navy, Kings Bay, test well 1.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled test well, diameter 8 in., depth 1,306 ft, cased to 555 ft, backfilled to 990 ft, open hole.
DATUM.—Altitude of land-surface datum is 10.0 ft.
REMARKS.—None.
PERIOD OF RECORD.—August 1979 to current year. Continuous record since August 1979.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 24.71 ft above land-surface datum, March 28, 1984, and March 17, 1983; lowest, 13.90 ft above land-surface datum, June 10-11, 1985.



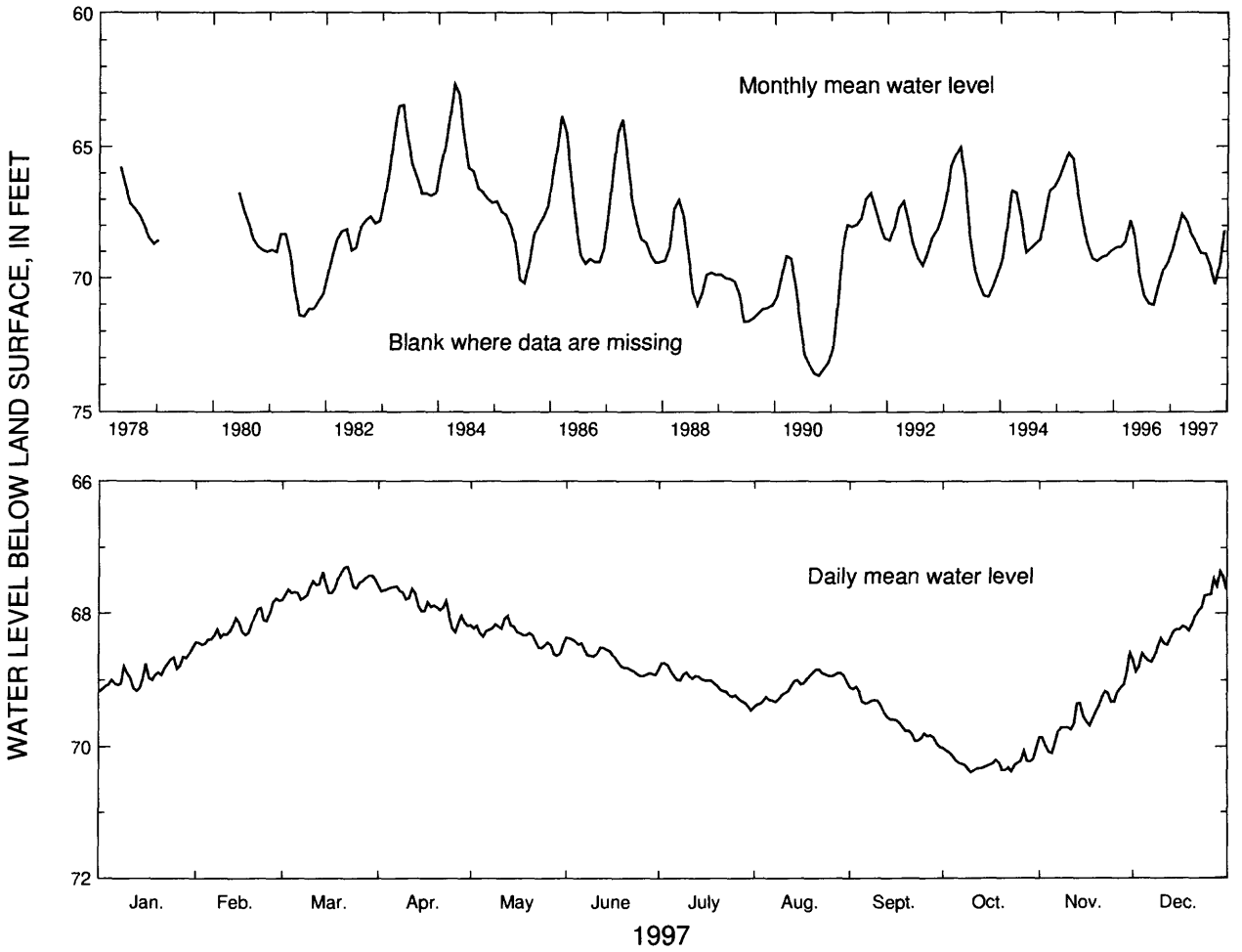
1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	-19.20	-20.99	-20.31	-21.33	-19.97	-18.34	-18.19	-18.15	-18.28	-17.56	-18.87	-20.17
MEAN	-18.83	-19.94	-19.91	-19.39	-18.38	-17.96	-17.68	-17.71	-17.94	-16.79	-17.90	-19.04
LOW	-18.42	-19.33	-19.53	-18.30	-17.79	-17.59	-17.05	-17.21	-17.57	-16.36	-17.25	-17.88

SUMMARY FOR 1997 HIGH -21.33 (Apr. 26, 1997) MEAN -18.45 LOW -16.36 (Oct. 21, 1997)

[Negative value indicates water level above land surface]

Figure 45. Water level in observation well 33E027, Camden County.

IDENTIFICATION NUMBER.—27E004.
LOCATION.—Lat 30°49'43", long 82°21'38", Hydrologic Unit 03110201.
SITE NAME.—U.S. Geological Survey, test well OK-9.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Upper Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 700 ft, cased to 498 ft, open hole.
DATUM.—Altitude of land-surface datum is 116 ft.
REMARKS.—Well drilled in May 1978 to replace USGS test well OK-8 (27E002).
PERIOD OF RECORD.—May 1978 to current year. Continuous record since June 1980.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 62.30 ft below land-surface datum, May 9, 1984; lowest, 73.91 ft below land-surface datum, October 7-8, 1990.



1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	68.51	67.78	67.29	67.58	68.03	68.36	68.74	68.84	69.10	70.02	68.59	67.36
MEAN	68.90	68.19	67.57	67.85	68.32	68.67	69.05	69.08	69.58	70.24	69.51	68.19
LOW	69.17	68.47	67.80	68.28	68.63	68.93	69.45	69.40	70.01	70.39	70.10	68.87

SUMMARY FOR 1997 HIGH 67.29 (Mar. 22, 1997) MEAN 68.77 LOW 70.39 (Oct. 10, 1997)

Figure 46. Water level in observation well 27E004, Charlton County.

Lower Floridan aquifer in the Brunswick area

The water level in the Lower Floridan aquifer was monitored in five wells in the Brunswick area in 1997; data from two of these wells (fig. 47) are summarized in figures 48 and 49. Water levels in wells tapping the Lower Floridan aquifer in this area are mainly influenced by withdrawal from the Upper Floridan aquifer (Krause and Randolph, 1989). The hydrographs for these wells are similar to those of the Upper Floridan aquifer in Glynn County (figs. 41-44). The 1997 mean water levels in wells 34H391 (fig. 48) and 33J044 (fig. 49) were 0.2 and 0.4 ft lower than in 1996.

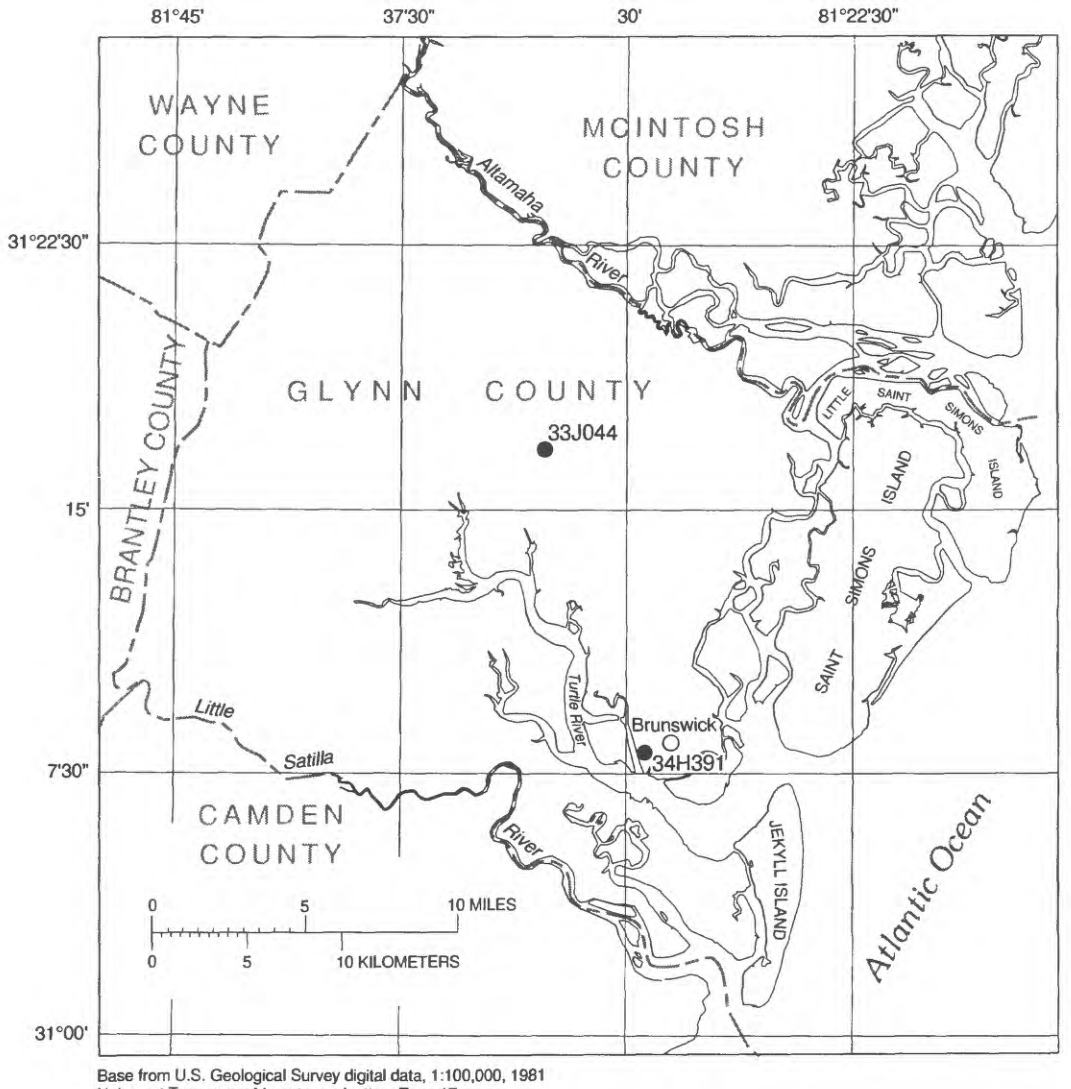
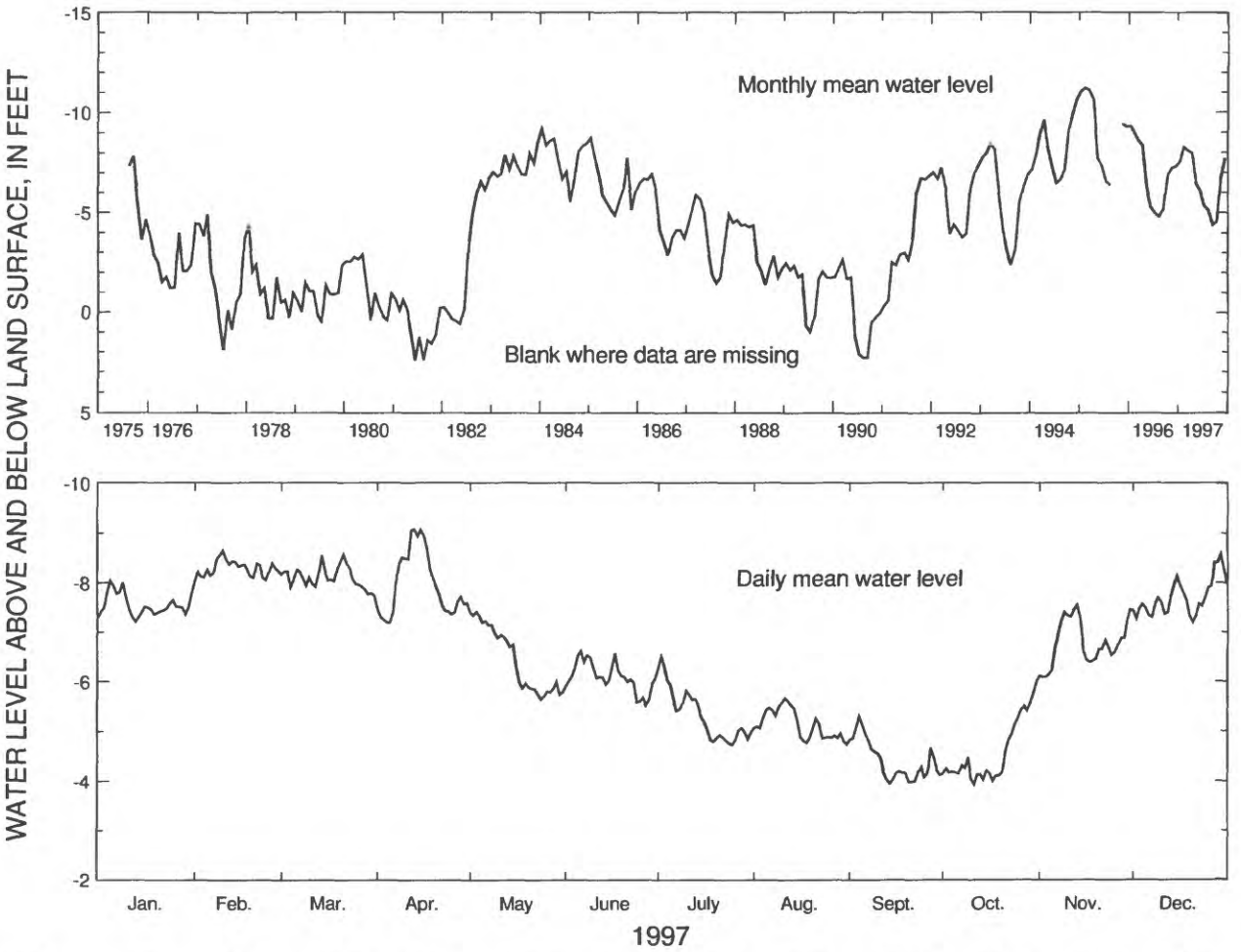


Figure 47. Locations of observation wells completed in the Lower Floridan aquifer.

IDENTIFICATION NUMBER.—34H391.
LOCATION.—Lat 31°08′18″, long 81°29′42″, Hydrologic Unit 03070203.
SITE NAME.—U.S. Geological Survey, test well 16.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Lower Floridan.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 1,150 ft, cased to 1,070 ft, open hole.
DATUM.—Altitude of land-surface datum is 7.13 ft.
REMARKS.—Well pumped and sampled, May 16 and September 25, 1997, for analysis of chloride concentration.
PERIOD OF RECORD.—August 1975 to current year. Continuous record since August 1975.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 12.34 ft above land-surface datum, April 6, 1995; lowest, 2.96 ft below land-surface datum, July 27, 1977.



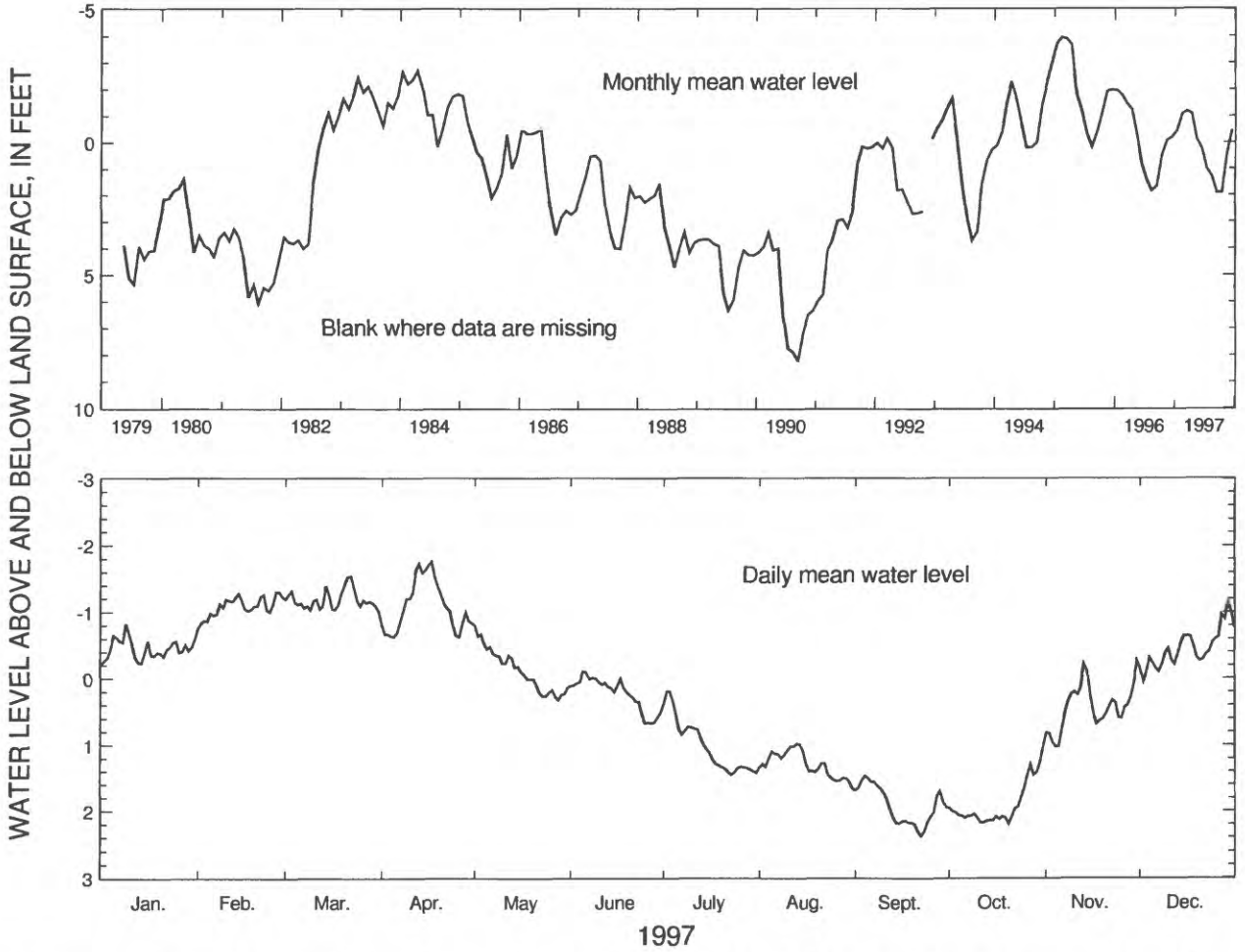
1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	-8.04	-8.65	-8.57	-9.08	-7.41	-6.61	-6.51	-5.66	-5.30	-6.00	-7.54	-8.57
MEAN	-7.55	-8.28	-8.11	-7.97	-6.44	-6.09	-5.33	-5.13	-4.40	-4.57	-6.77	-7.70
LOW	-7.21	-8.02	-7.74	-7.20	-5.64	-5.52	-4.73	-4.74	-3.95	-3.94	-6.09	-7.20

SUMMARY FOR 1997 HIGH -9.08 (Apr. 13, 1997) MEAN -6.52 LOW -3.94 (Oct. 11, 1997)

[Negative value indicates water level above land surface]

Figure 48. Water level in observation well 34H391, Glynn County.

IDENTIFICATION NUMBER.—33J044.
LOCATION.—Lat 31°16′33″, long 81°32′40″, Hydrologic Unit 03070203.
SITE NAME.—Georgia Pacific Company, U.S. Geological Survey, test well 27.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Lower Floridan.
WELL CHARACTERISTICS.—Drilled unused oil-test well converted to observation well, diameter 9 in., depth 2,260 ft, cased to 1,079 ft, open hole.
DATUM.—Altitude of land-surface datum is 20 ft.
REMARKS.—This is the Sterling oil-test well.
PERIOD OF RECORD.—May 1979 to current year. Continuous record since May 1979.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 4.56 ft above land-surface datum, April 6, 1995; lowest, 8.44 ft below land-surface datum, September 19, 1990.



1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	-0.83	-1.30	-1.54	-1.76	-0.80	-0.11	0.19	0.98	1.47	1.02	-0.27	-1.16
MEAN	-0.45	-1.08	-1.19	-1.09	-0.12	0.22	1.01	1.30	1.92	1.92	0.44	-0.46
LOW	-0.21	-0.76	-1.01	-0.63	0.32	0.67	1.45	1.66	2.38	2.20	1.03	0.04

SUMMARY FOR 1997 HIGH -1.76 (Apr. 17, 1997) MEAN 0.21 LOW 2.38 (Sept. 22, 1997)

[Negative value indicates water level above land surface]

Figure 49. Water level in observation well 33J044, Glynn County.

Claiborne Aquifer

The water level in the Claiborne aquifer was monitored in 12 wells in 1997 and data from 8 of these wells (fig. 50) are summarized in figures 51-58. The water level in the aquifer is affected mainly by precipitation and by local and regional pumping (Hicks and others, 1981). The water level is generally highest following the winter and spring rainy seasons, and lowest in the fall following the summer irrigation season. The annual mean water levels in the eight reported wells ranged from 0.4 ft lower to 5.0 ft higher in 1997 than in 1996. A record-low daily mean water level was recorded in well 14P015 (fig. 58) that was 5.6 ft lower than the previous record low.

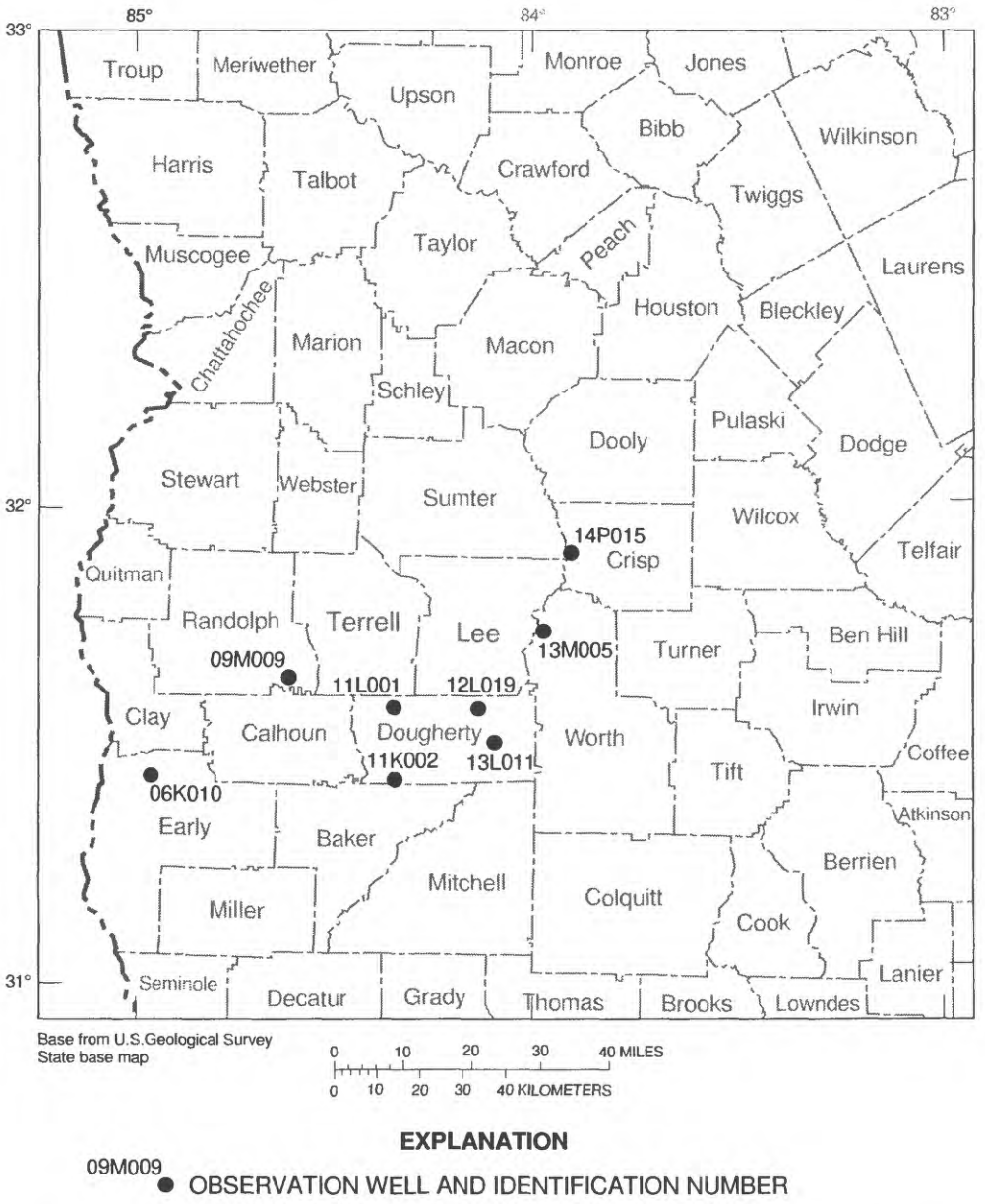
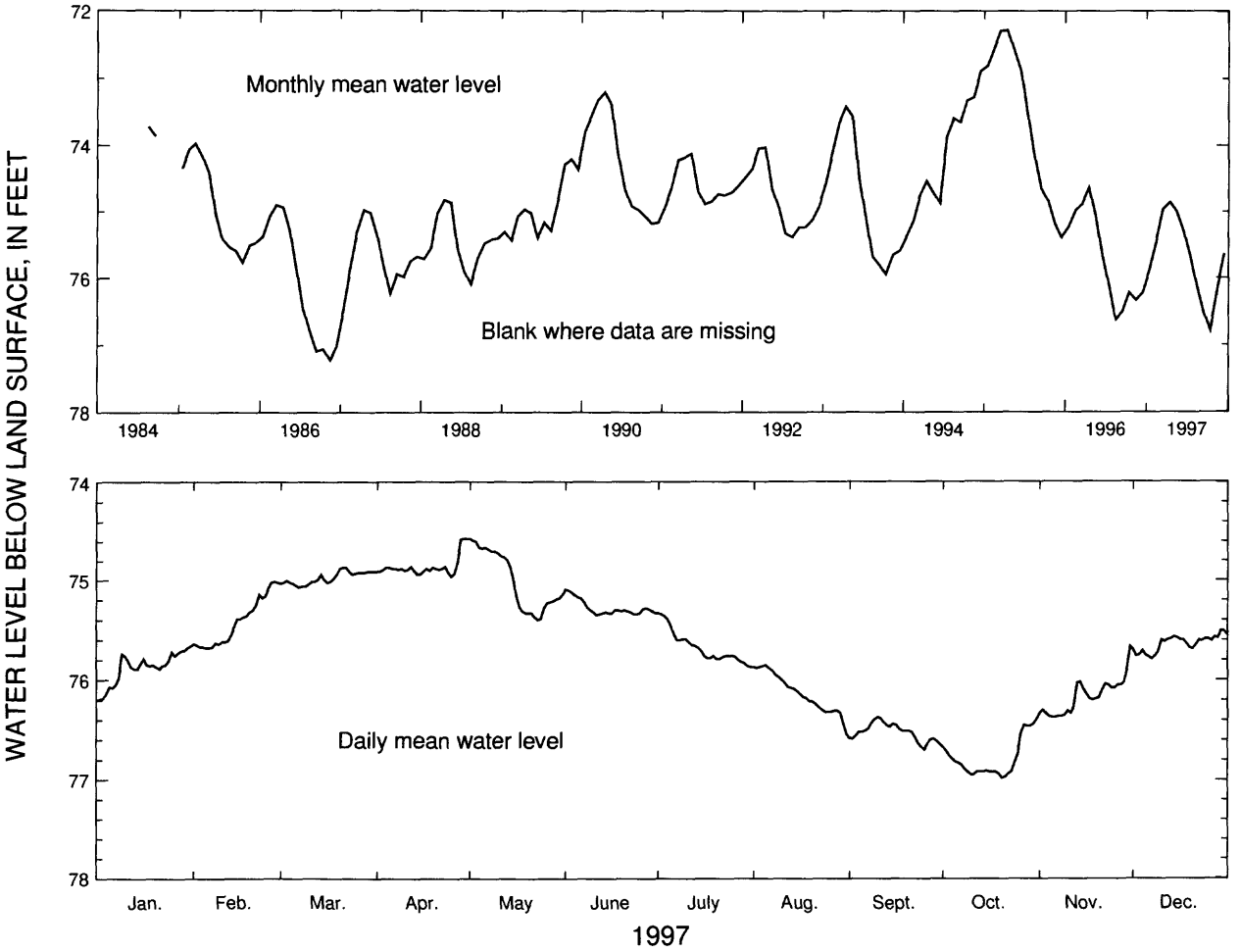


Figure 50. Locations of observation wells completed in the Claiborne aquifer.

IDENTIFICATION NUMBER.—06K010.
LOCATION.—Lat 31°28′24″, long 84°55′09″, Hydrologic Unit 03130004.
SITE NAME.—Georgia Geologic Survey, Kolomoki Mounds State Park, test well 3.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Claiborne.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 140 ft, cased to 120 ft, screen to 140 ft.
DATUM.—Altitude of land-surface datum is 310 ft.
REMARKS.—None.
PERIOD OF RECORD.—August 1984 to current year. Continuous record since January 1985.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 72.22 ft below land-surface datum, March 18, 1995; lowest, 77.35 ft below land-surface datum, November 14, 1986.

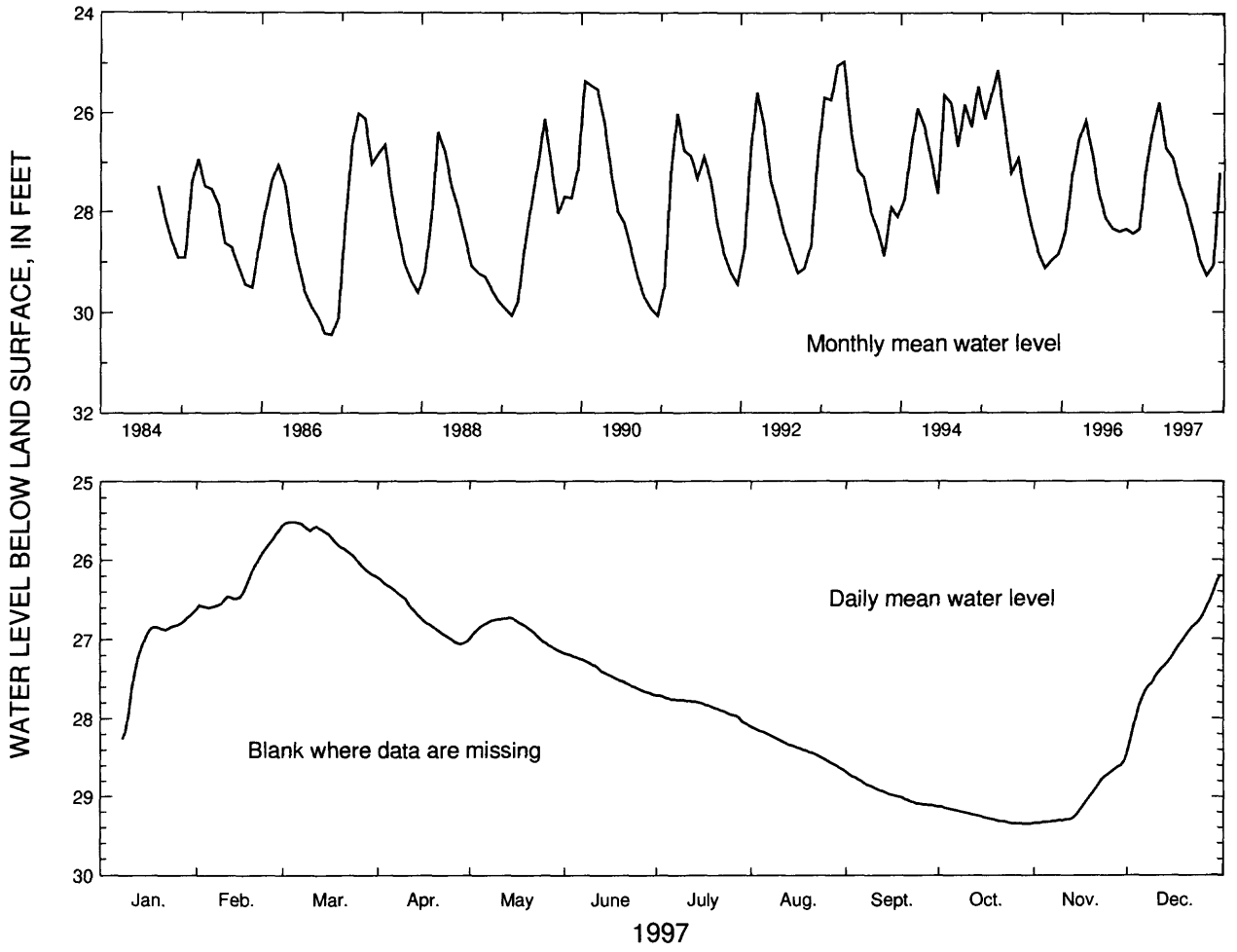


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	75.66	75.01	74.87	74.57	74.57	75.09	75.33	75.85	76.37	76.39	75.67	75.51
MEAN	75.88	75.42	74.97	74.86	75.00	75.28	75.67	76.13	76.53	76.79	76.17	75.64
LOW	76.20	75.68	75.07	74.96	75.40	75.35	75.87	76.54	76.70	76.98	76.37	75.79

SUMMARY FOR 1997 HIGH 74.57 (Apr. 29-May 1, 1997) MEAN 75.70 LOW 76.98 (Oct. 20, 1997)

Figure 51. Water level in observation well 06K010, Early County.

IDENTIFICATION NUMBER.—09M009.
LOCATION.—Lat 31°39'52", long 84°36'10", Hydrologic Unit 03130009.
SITE NAME.—C.T. Martin, test well 1.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Claiborne.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 94 ft, cased to 77 ft, screen to 94 ft.
DATUM.—Altitude of land-surface datum is 322 ft.
REMARKS.—Water-level data for period, January 1-7, 1997, are missing.
PERIOD OF RECORD.—September 1984 to current year. Continuous record since September 1984.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 24.30 ft below land-surface datum, April 1, 1993; lowest, 30.50 ft below land-surface datum, November 3, 1986.

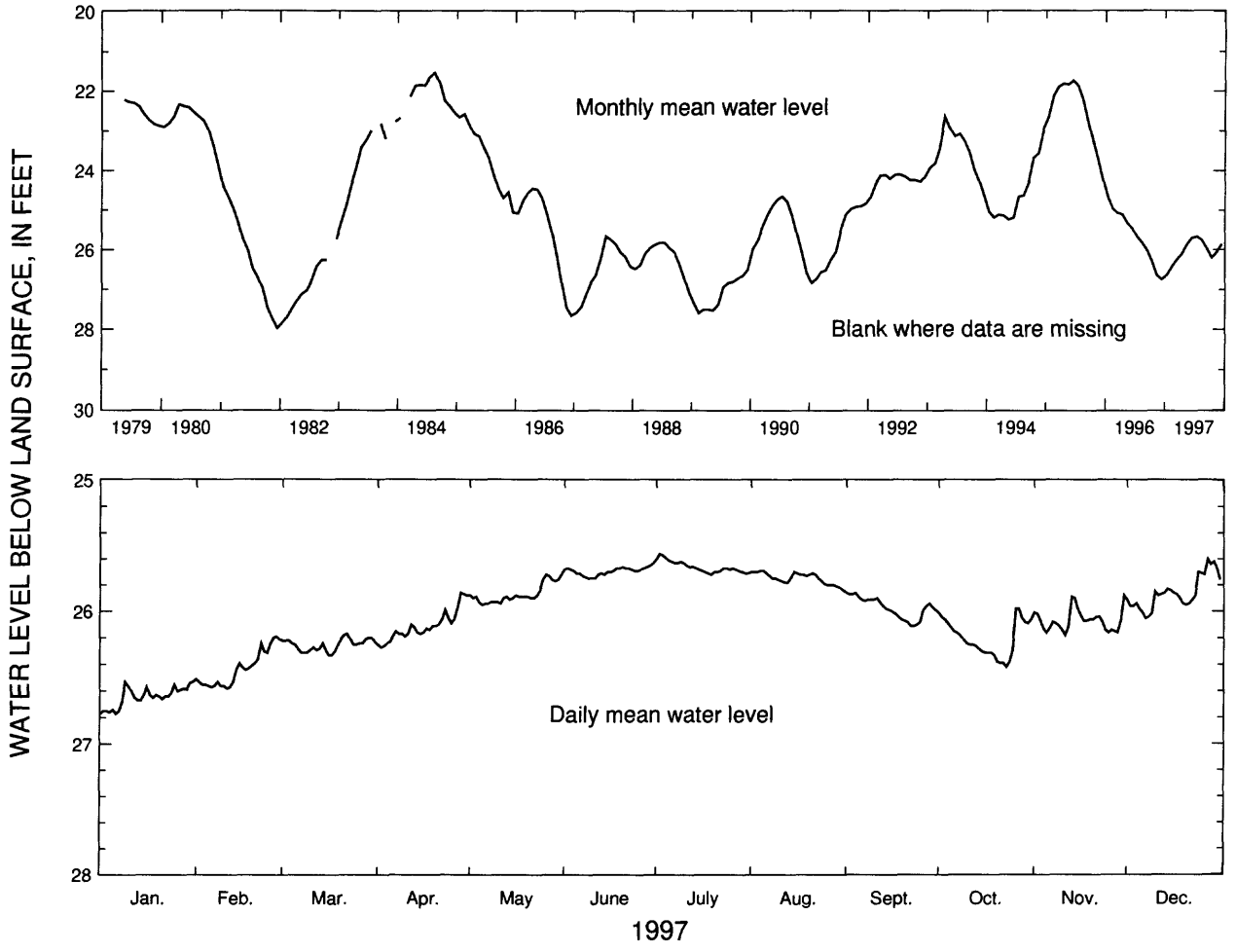


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	------	25.62	25.52	26.22	26.73	27.18	27.71	28.10	28.68	29.13	28.55	26.20
MEAN	------	26.28	25.77	26.70	26.89	27.44	27.85	28.37	28.95	29.26	29.06	27.20
LOW	------	26.62	26.20	27.06	27.16	27.70	28.08	28.65	29.12	29.35	29.34	28.44

SUMMARY FOR 1997 HIGH 25.52 (Mar. 3-5, 1997) MEAN 27.59 LOW 29.35 (Oct. 25-31, 1997)

Figure 52. Water level in observation well 09M009, Randolph County.

IDENTIFICATION NUMBER.—11K002.
LOCATION.—Lat 31°26'54", long 84°21'01", Hydrologic Unit 03130008.
SITE NAME.—U.S. Geological Survey, test well 11.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Claiborne.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 320 ft, cased to 300 ft, screen to 320 ft.
DATUM.—Altitude of land-surface datum is 183.5 ft.
REMARKS.—None.
PERIOD OF RECORD.—May 1979 to current year. Continuous record since May 1979.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 21.57 ft below land-surface datum, June 6, 1995; lowest, 28.04 ft below land-surface datum, December 24, 1981.

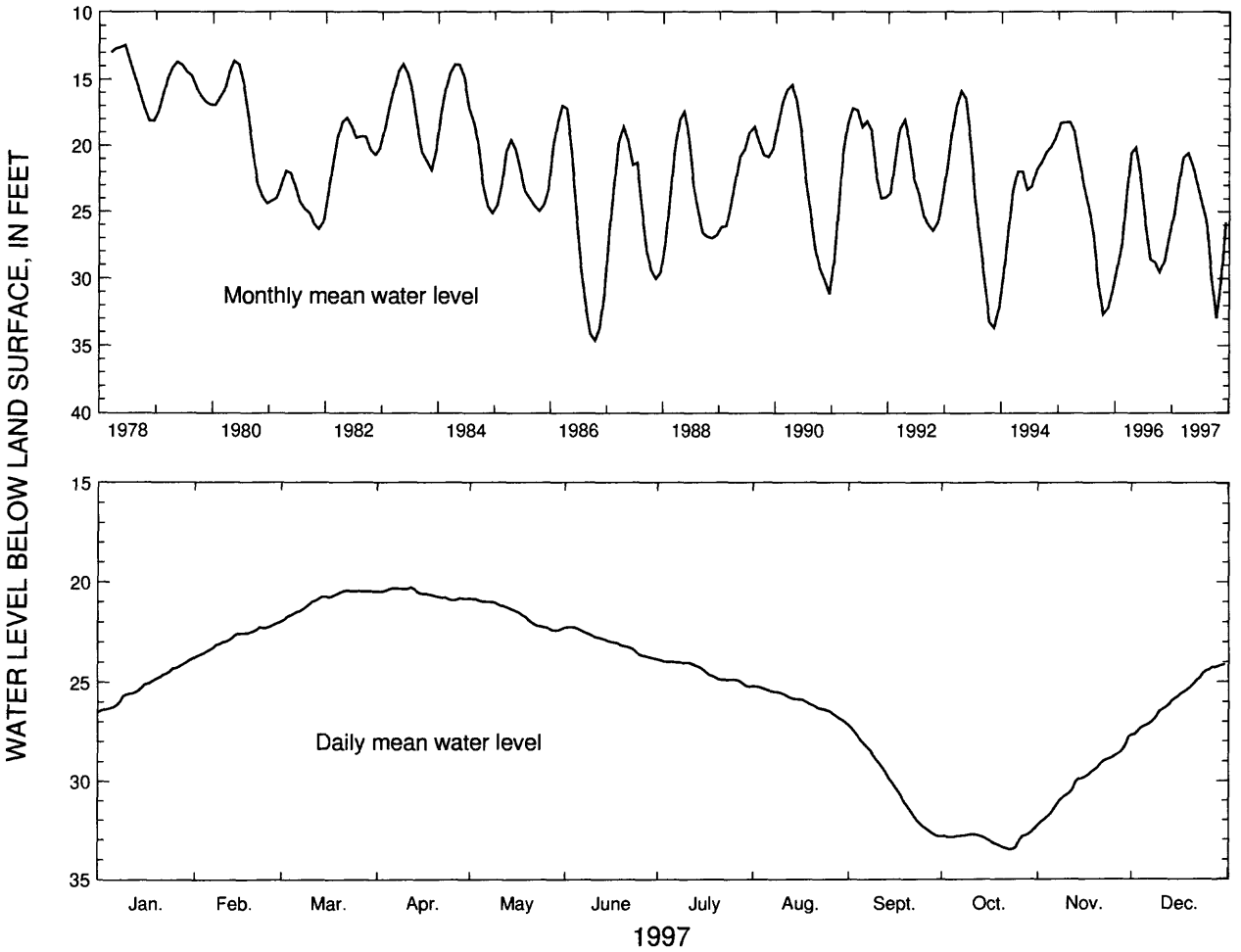


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	26.53	26.19	26.17	25.86	25.72	25.63	25.56	25.69	25.86	25.98	25.88	25.60
MEAN	26.64	26.43	26.25	26.11	25.87	25.69	25.66	25.75	25.97	26.20	26.07	25.86
LOW	26.77	26.58	26.33	26.27	25.95	25.75	25.72	25.84	26.11	26.42	26.18	26.05

SUMMARY FOR 1997 HIGH 25.56 (July 2, 1997) MEAN 26.04 LOW 26.77 (Jan. 1, 6, 1997)

Figure 53. Water level in observation well 11K002, Dougherty County.

IDENTIFICATION NUMBER.—11L001.
LOCATION.—Lat 31°35'30", long 84°20'34", Hydrologic Unit 03130008.
SITE NAME.—U.S. Geological Survey, test well 4.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Claiborne.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 251 ft, cased to 233 ft, screen to 251 ft.
DATUM.—Altitude of land-surface datum is 220 ft.
REMARKS.—None.
PERIOD OF RECORD.—March 1978 to current year. Continuous record since March 1978.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 12.11 ft below land-surface datum, June 5-6, 1978; lowest, 34.75 ft below land-surface datum, October 19-20, 1986.

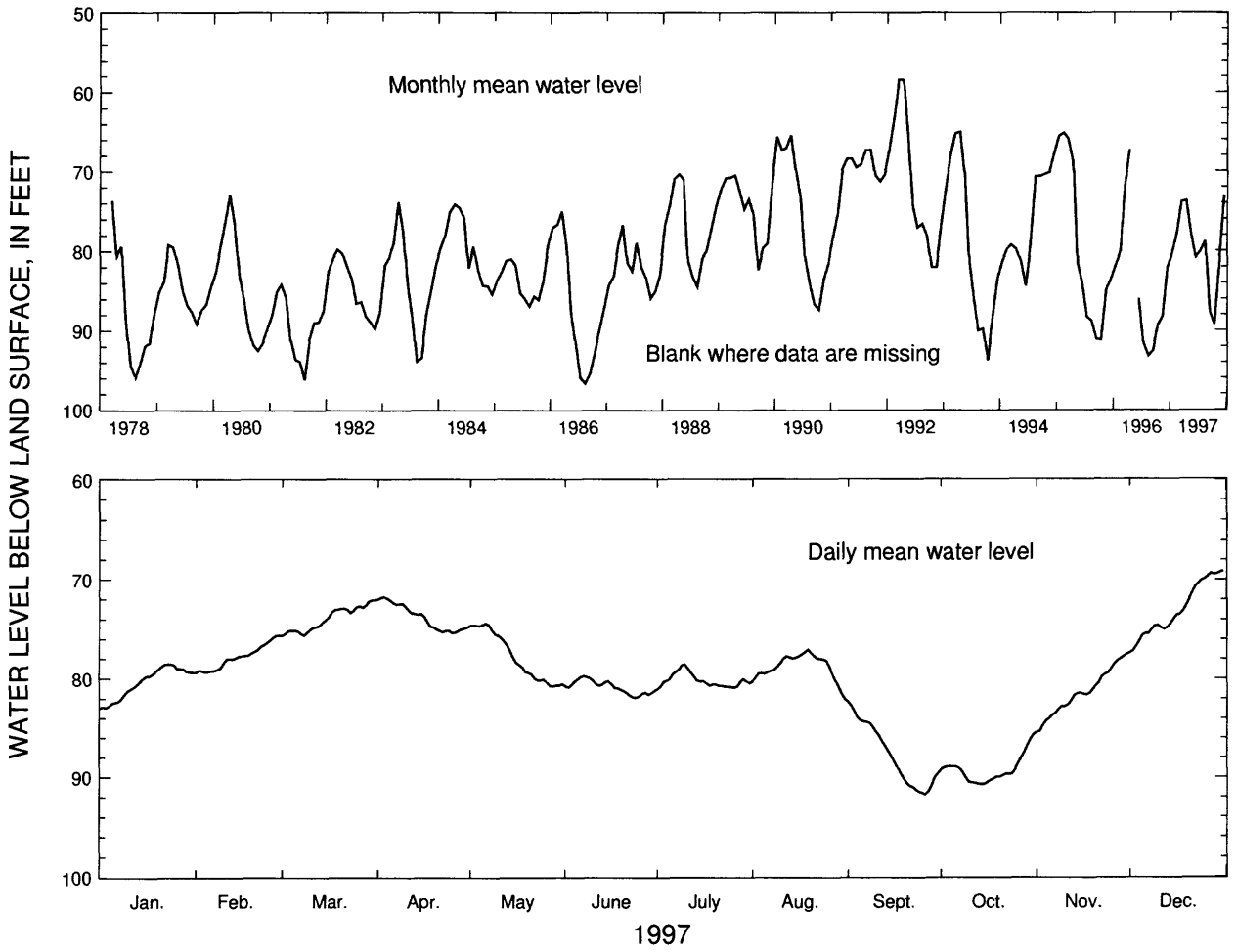


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	23.83	22.04	20.43	20.28	20.82	22.26	23.86	25.20	27.17	32.44	27.76	24.12
MEAN	25.19	22.80	20.90	20.58	21.58	22.98	24.45	25.96	30.17	32.97	30.01	25.78
LOW	26.50	23.75	21.97	20.90	22.42	23.82	25.22	27.03	32.83	33.52	32.25	27.67

SUMMARY FOR 1997 HIGH 20.28 (Apr. 12, 1997) MEAN 25.29 LOW 33.52 (Oct. 23, 1997)

Figure 54. Water level in observation well 11L001, Dougherty County.

IDENTIFICATION NUMBER.—12L019.
LOCATION.—Lat 31°35'36", long 84°10'30", Hydrologic Unit 03130008.
SITE NAME.—U.S. Geological Survey, test well 5.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Claiborne.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 257 ft, cased to 241 ft, screen to 257 ft.
DATUM.—Altitude of land-surface datum is 198 ft.
REMARKS.—None.
PERIOD OF RECORD.—March 1978 to current year. Continuous record since March 1978.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 57.31 ft below land-surface datum, April 7, 1992; lowest, 99.53 ft below land-surface datum, August 1-2, 1978.

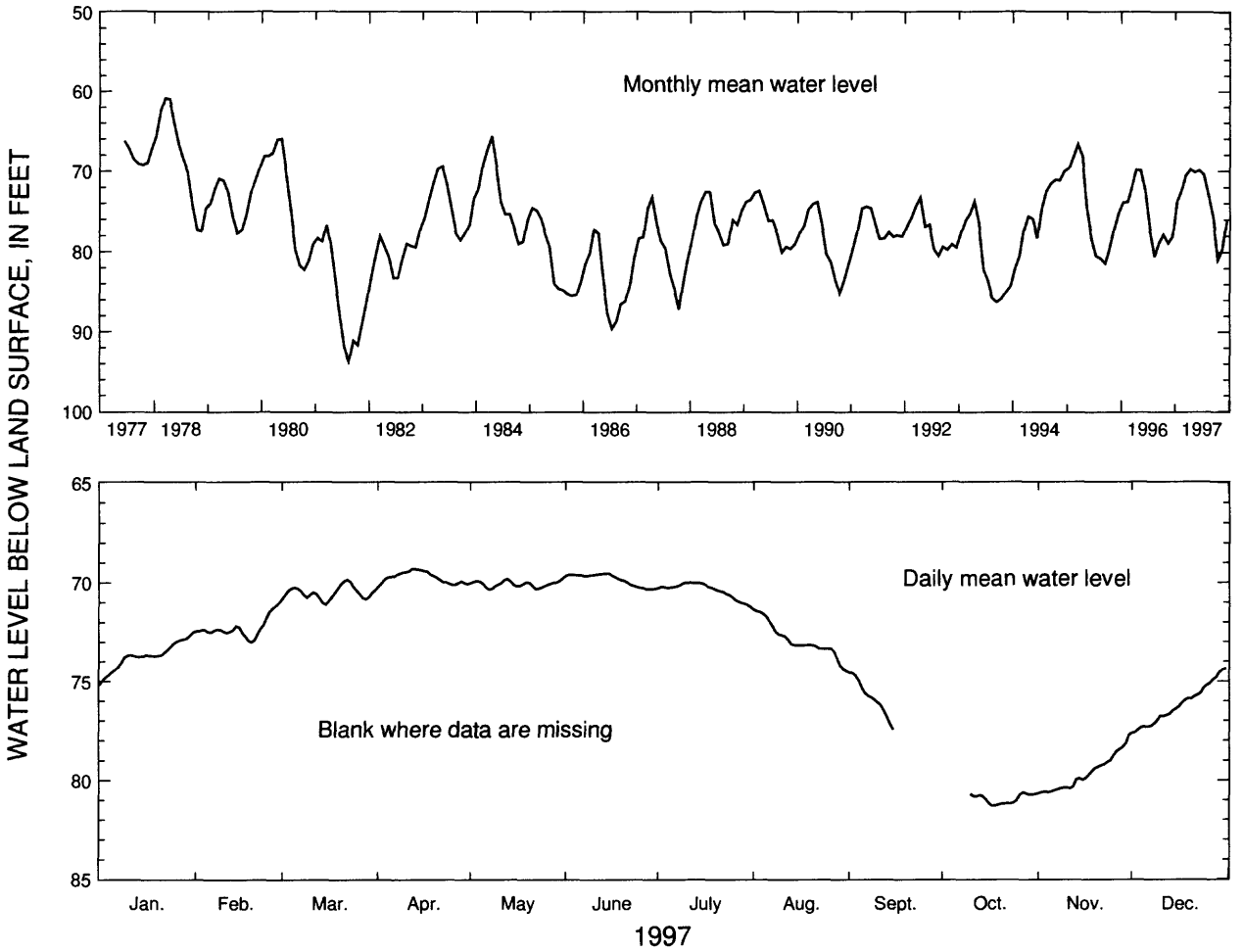


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	78.51	75.60	72.02	71.70	74.39	79.67	78.53	77.06	82.30	85.66	77.54	69.13
MEAN	80.38	77.79	73.88	73.73	77.72	80.80	80.14	78.79	87.70	89.30	81.44	73.05
LOW	82.97	79.39	75.60	75.32	80.70	81.88	81.00	82.06	91.73	90.72	85.45	77.39

SUMMARY FOR 1997 HIGH 69.13 (Dec. 31, 1997) MEAN 79.56 LOW 91.73 (Sept. 26, 1997)

Figure 55. Water level in observation well 12L019, Dougherty County.

IDENTIFICATION NUMBER.—13L011.
LOCATION.—Lat 31°31'05", long 84°06'43", Hydrologic Unit 03130008.
SITE NAME.—U.S. Geological Survey, test well 2.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Claiborne.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 418 ft, cased to 398 ft, screen to 418 ft.
DATUM.—Altitude of land-surface datum is 195 ft.
REMARKS.—Water-level data for period, September 16 to October 9, 1997, are missing.
PERIOD OF RECORD.—June 1977 to current year. Continuous record since June 1977.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 60.01 ft below land-surface datum, April 5, 1978; lowest, 95.00 ft below land-surface datum, August 9-11, 1981.

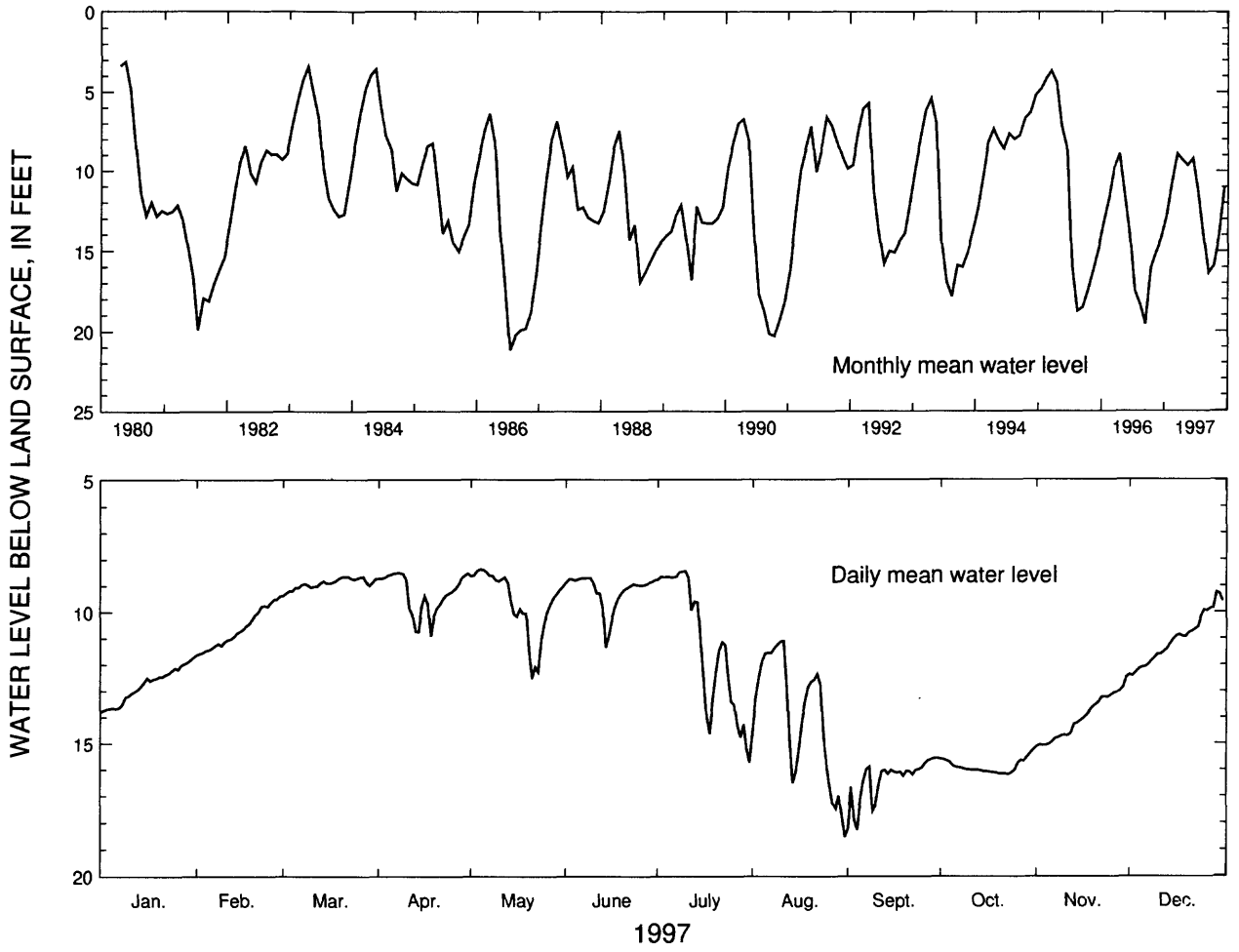


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	72.53	71.01	69.85	69.31	69.78	69.54	69.99	71.36	------	------	77.75	74.36
MEAN	73.72	72.29	70.50	69.74	70.07	69.85	70.39	72.93	------	------	79.69	76.19
LOW	75.17	73.01	71.10	70.21	70.35	70.32	71.24	74.47	------	------	80.66	77.66

SUMMARY FOR 1997 HIGH 69.31 (Apr. 12-13, 1997) MEAN 73.22 LOW 81.29 (Oct. 17-18, 1997)

Figure 56. Water level in observation well 13L011, Dougherty County.

IDENTIFICATION NUMBER.—13M005.
LOCATION.—Lat 31°43'30", long 84°00'54", Hydrologic Unit 03130006.
SITE NAME.—U.S. Geological Survey, test well DP-7.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Claiborne.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 345 ft, cased to 330 ft, screen to 345 ft.
DATUM.—Altitude of land-surface datum is 230 ft.
REMARKS.—None.
PERIOD OF RECORD.—April 1980 to current year. Continuous record since April 1980.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 2.89 ft below land-surface datum, May 29, 1980; lowest, 23.90 ft below land-surface datum, August 19, 1995.

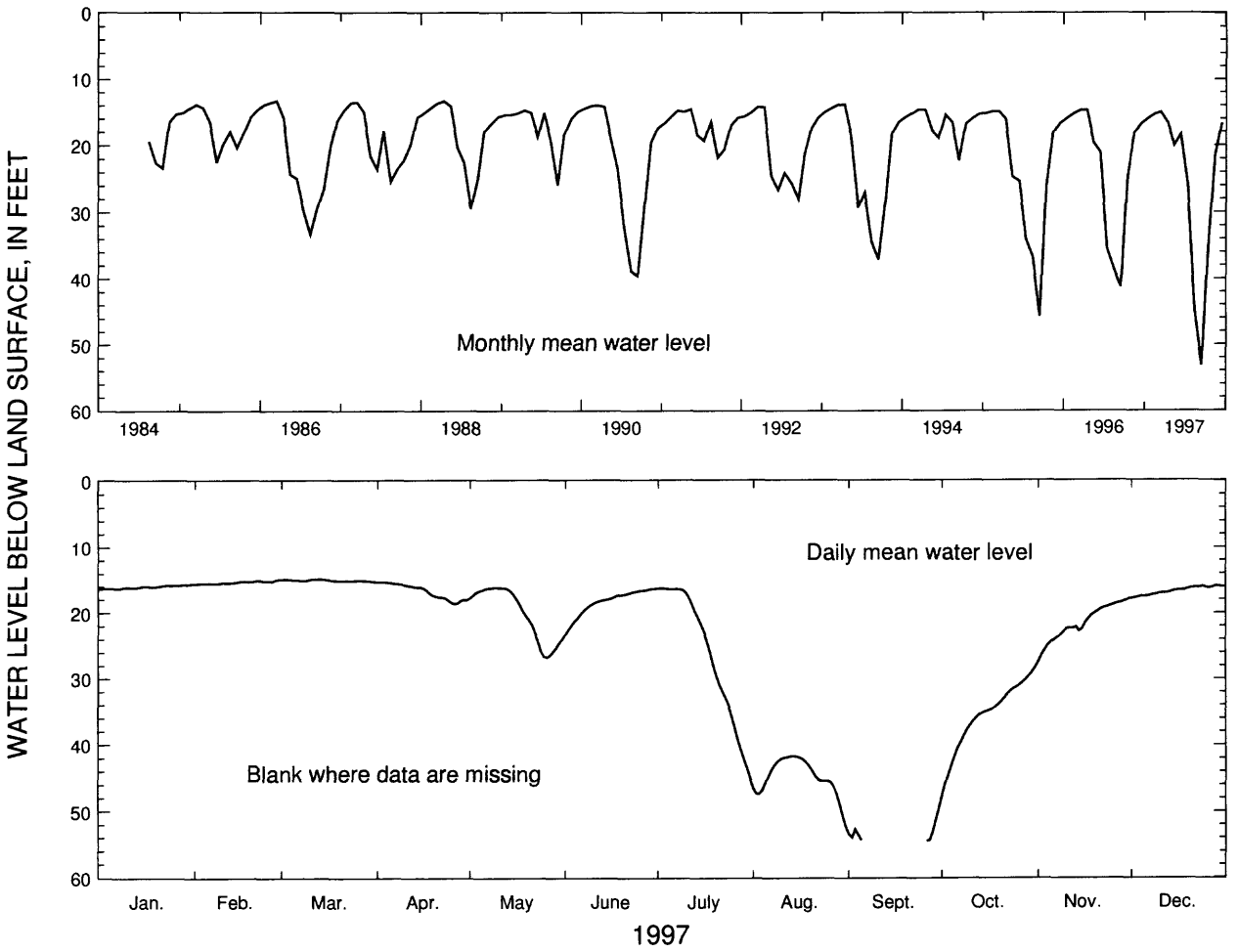


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	11.71	9.39	8.64	8.51	8.37	8.70	8.44	11.10	15.56	15.24	12.47	9.25
MEAN	12.77	10.63	8.90	9.27	9.62	9.19	11.27	13.96	16.37	15.89	14.02	11.02
LOW	13.79	11.62	9.37	10.91	12.52	11.33	15.73	18.54	18.27	16.18	15.13	12.41

SUMMARY FOR 1997 HIGH 8.37 (May 4, 1997) MEAN 11.92 LOW 18.54 (Aug. 31, 1997)

Figure 57. Water level in observation well 13M005, Worth County.

IDENTIFICATION NUMBER.—14P015.
LOCATION.—Lat 31°57′31″, long 83°54′23″, Hydrologic Unit 03130006.
SITE NAME.—Georgia Geologic Survey, Veterans Memorial State Park, test well 2.
INSTRUMENTATION.—Digital recorder.
AQUIFER.— Claiborne.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 340 ft, cased to 240 ft, screen to 340 ft.
DATUM.—Altitude of land-surface datum is 252 ft.
REMARKS.—Water-level data for period, September 6-25, 1997, are missing.
PERIOD OF RECORD.—August 1984 to current year. Continuous record since August 1984.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 11.13 ft below land-surface datum, July 10, 1994; lowest, 54.47 ft below land-surface datum, September 26, 1997, but may have been lower during period of missing record, September 6-25, 1997.



1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	15.59	14.92	14.81	15.28	16.16	16.34	16.27	41.74	------	28.24	17.89	15.92
MEAN	16.00	15.31	15.01	16.67	20.02	18.36	26.07	44.85	------	35.62	21.54	16.71
LOW	16.31	15.58	15.24	18.61	26.74	23.20	45.11	52.39	------	47.66	27.42	17.81

SUMMARY FOR 1997 HIGH 14.81 (Mar. 14, 1997) MEAN 23.36 LOW 54.47 (Sept. 26, 1997)

Figure 58. Water level in observation well 14P015, Crisp County.

Clayton Aquifer

The water level in the Clayton aquifer was monitored in 12 wells in 1997 and data from 7 of these wells (fig. 59) are summarized in figures 60-66. Water levels in wells tapping the aquifer are affected by seasonal variations in local and regional pumping (Hicks and others, 1981).

Annual mean water levels in the seven wells summarized in this report (figs. 60-66) ranged from 5.9 ft lower to 1.8 ft higher in 1997 than in 1996. Record-low daily mean water levels were recorded in wells 07N001(fig. 61) and 11K005 (fig. 65) that were 1.2 and 1.8 ft lower than the previous record lows. Record collection was discontinued on well 09N001 (fig. 62) on July 23, 1997.

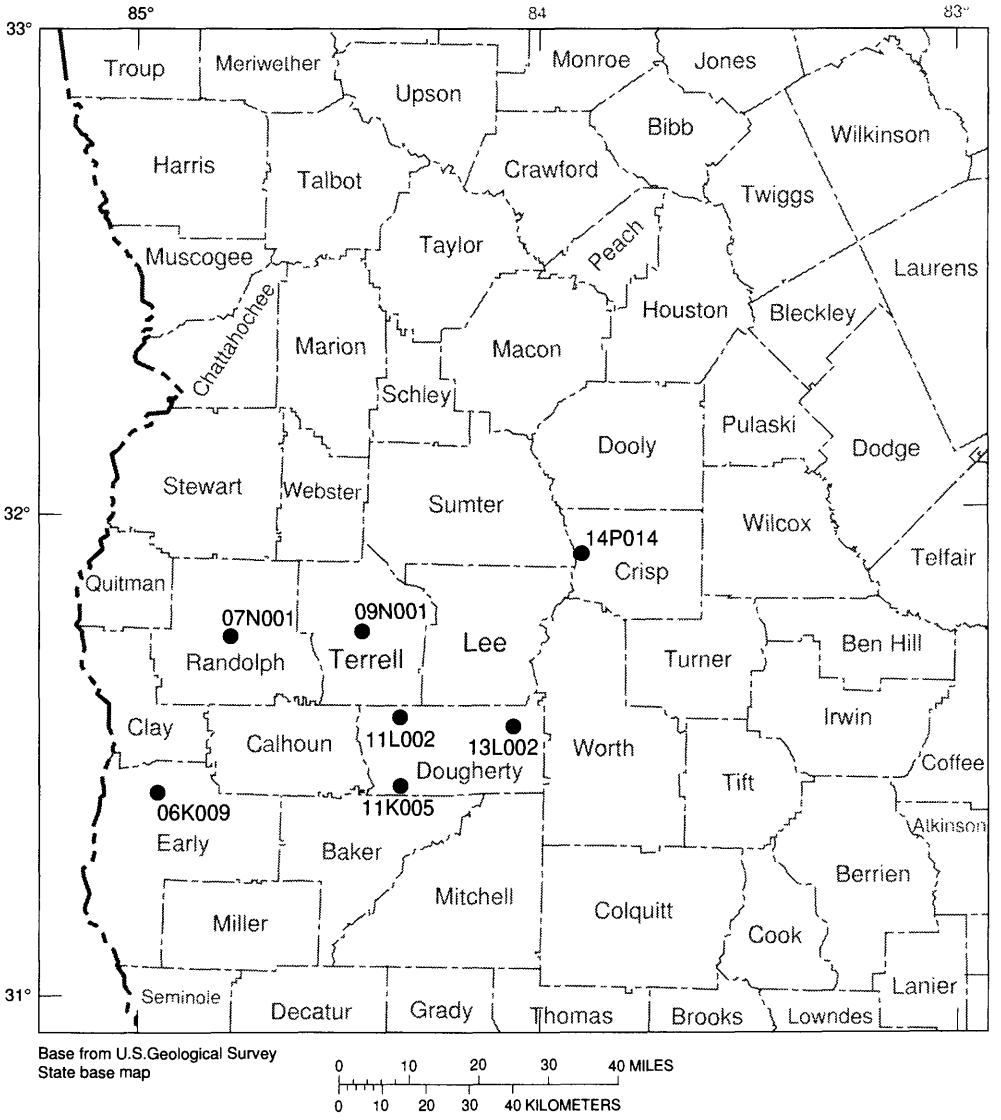
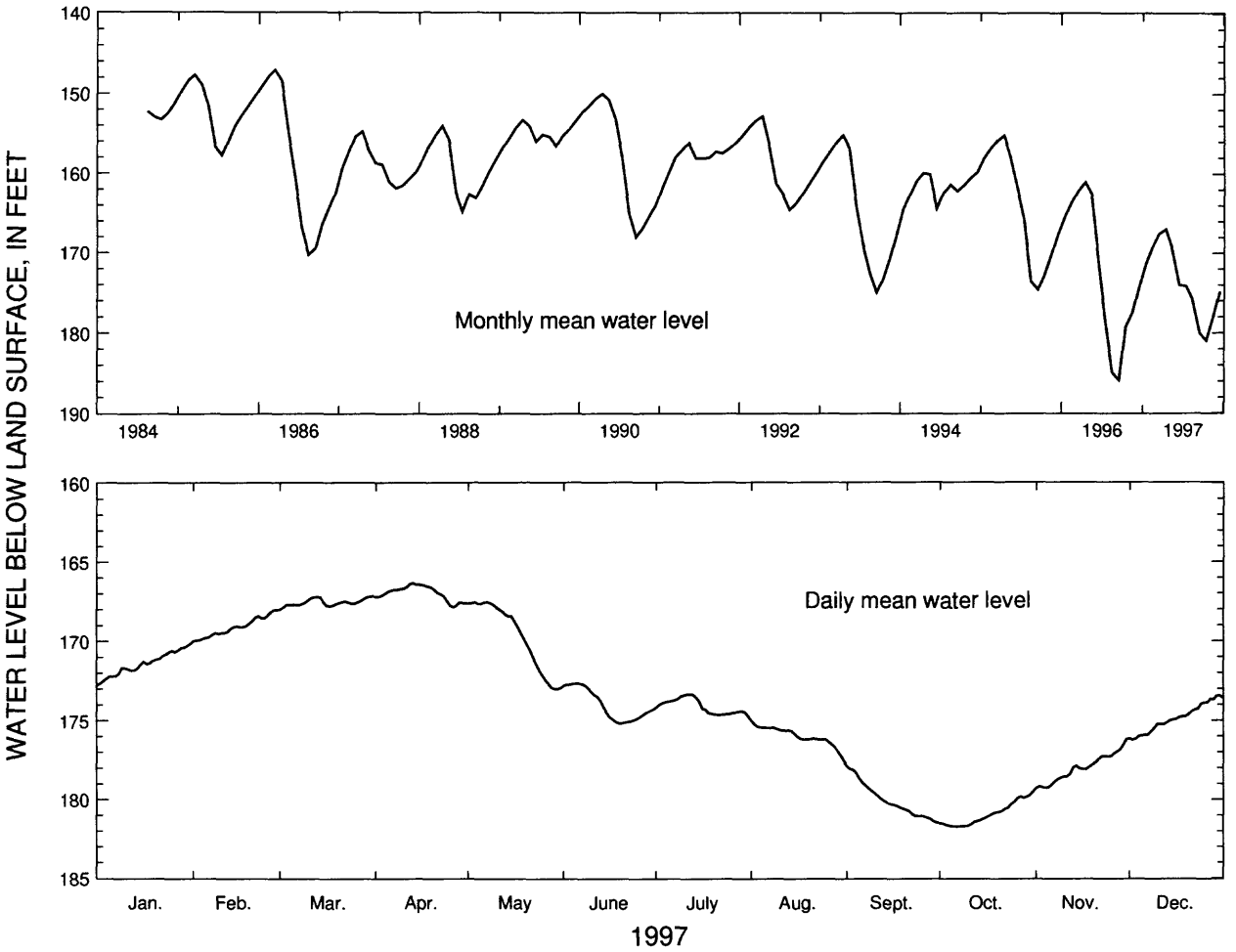


Figure 59. Locations of observation wells completed in the Clayton aquifer.

IDENTIFICATION NUMBER.—06K009.
LOCATION.—Lat 31°28′24″, long 84°55′12″, Hydrologic Unit 03130004.
SITE NAME.—Georgia Geologic Survey, Kolomoki Mounds State Park, test well 1.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Clayton.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 612 ft, cased to 491 ft, open hole.
DATUM.—Altitude of land-surface datum is 310 ft.
REMARK.—None.
PERIOD OF RECORD.—August 1984 to current year. Continuous record since August 1984.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 146.62 ft below land-surface datum, April 3, 1986; lowest,186.76 ft below land-surface datum, September 5, 1996.

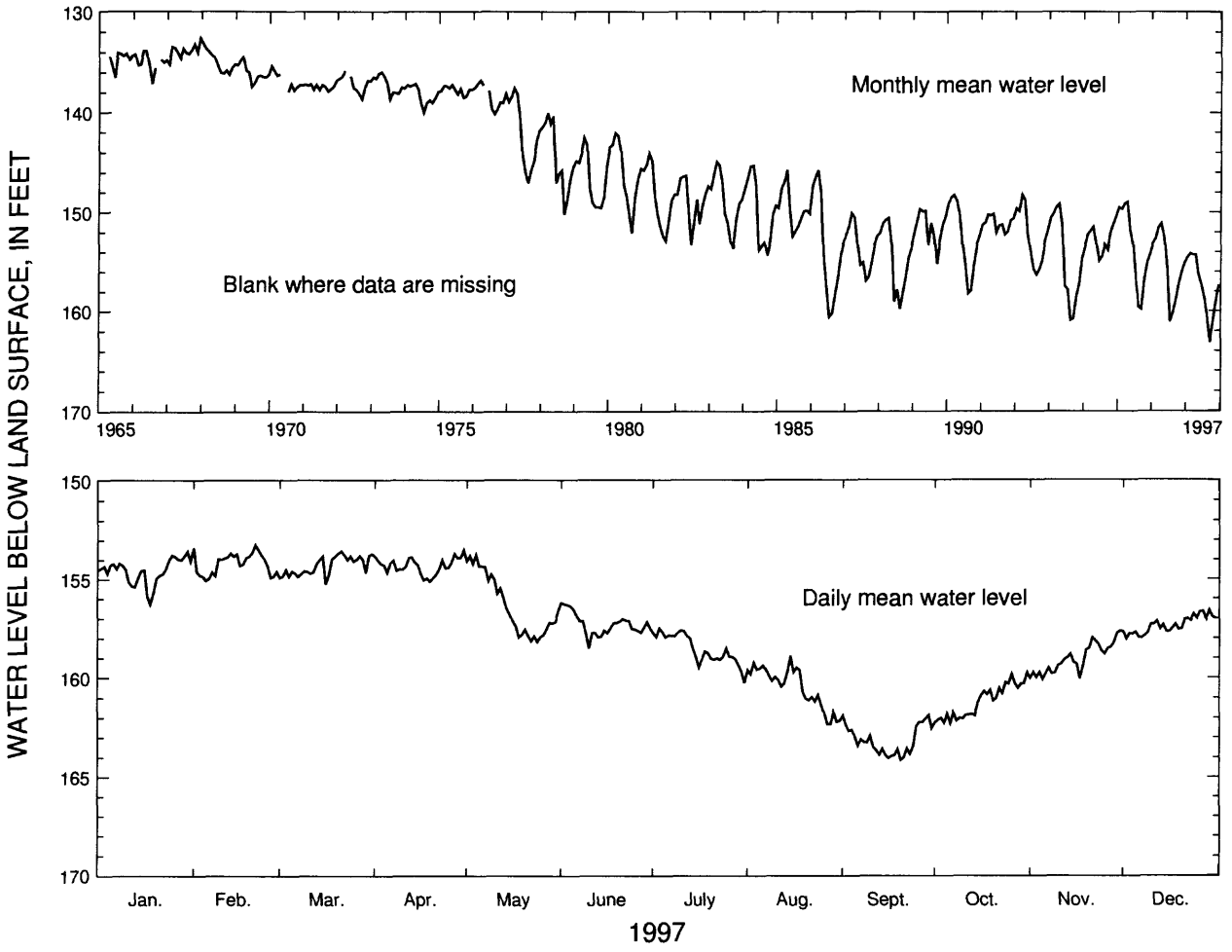


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	170.15	168.04	167.18	166.35	167.54	172.67	173.35	175.01	177.88	179.50	176.19	173.45
MEAN	171.42	169.11	167.56	166.97	169.65	174.01	174.13	175.98	180.04	180.93	178.03	174.87
LOW	172.77	169.99	168.01	167.86	173.00	175.18	174.74	177.59	181.47	181.71	179.28	176.24

SUMMARY FOR 1997 HIGH 166.35 (Apr. 13, 1997) MEAN 173.58 LOW 181.71 (Oct. 6-7, 1997)

Figure 60. Water level in observation well 06K009, Early County.

IDENTIFICATION NUMBER.—07N001.
LOCATION.—Lat 31°46'09", long 84°47'43", Hydrologic Unit 03110204.
SITE NAME.—City of Cuthbert.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Clayton.
WELL CHARACTERISTICS.—Drilled unused municipal well, diameter 8 in., depth 372 ft, casing depth unknown.
DATUM.—Altitude of land-surface datum is 460 ft.
REMARKS.—Located near city supply wells.
PERIOD OF RECORD.—January 1965 to current year. Continuous record since January 1965.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 132.00 ft below land-surface datum, December 10, 31, 1967; lowest, 164.15 ft below land-surface datum, September 20, 1997.

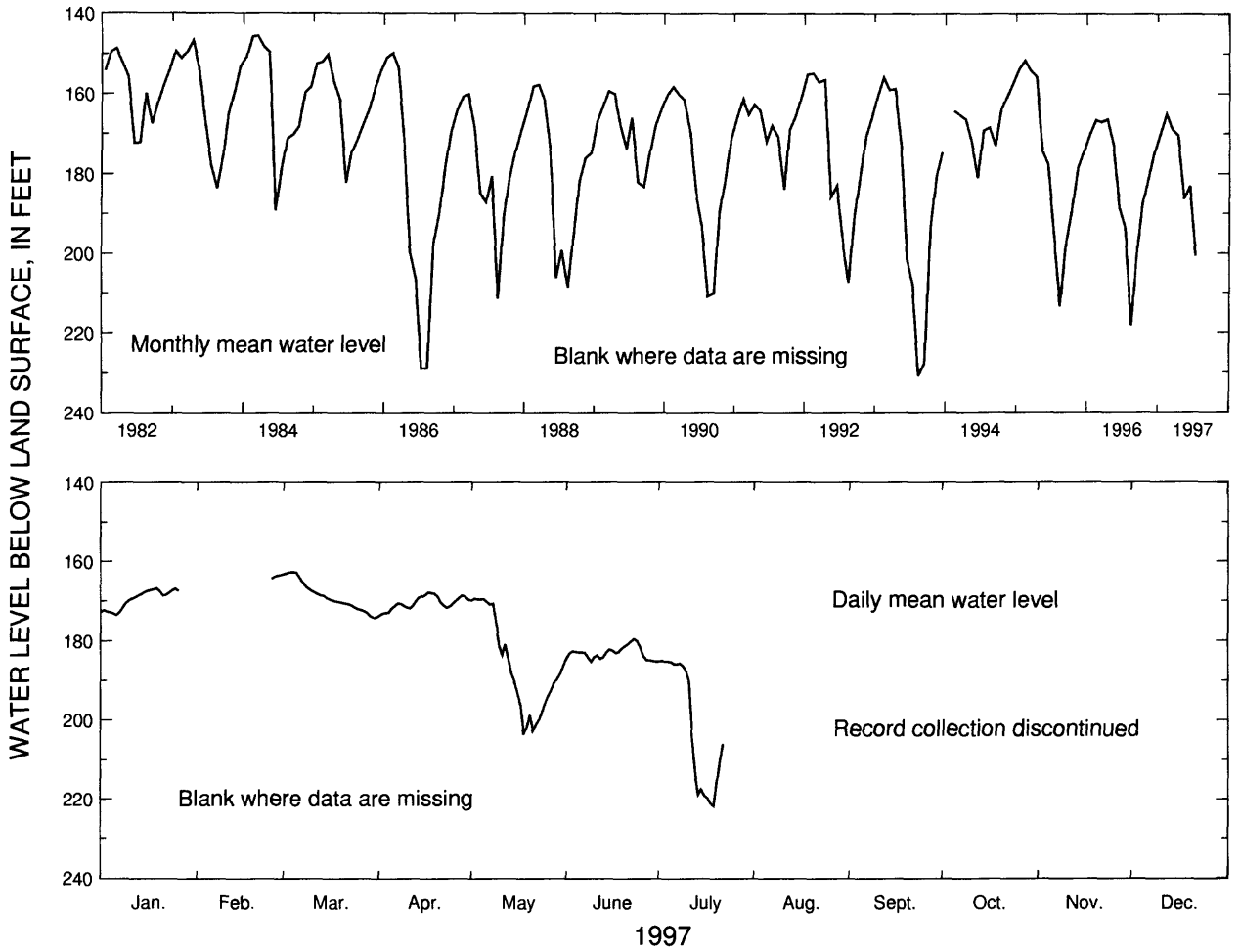


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	153.56	153.23	153.56	153.50	153.74	156.20	157.50	158.90	161.88	159.74	157.64	156.60
MEAN	154.56	154.17	154.29	154.31	156.31	157.29	158.54	160.47	163.16	161.21	159.05	157.37
LOW	156.26	155.06	155.24	155.11	158.18	158.51	160.26	162.33	164.15	162.28	160.08	158.05

SUMMARY FOR 1997 HIGH 153.23 (Feb. 21, 1997) MEAN 157.58 LOW 164.15 (Sept. 20, 1997)

Figure 61. Water level in observation well 07N001, Randolph County.

IDENTIFICATION NUMBER.—09N001.
LOCATION.—Lat 31°46'09", long 84°31'07", Hydrologic Unit 03130009.
SITE NAME.—Bill Newman.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Clayton.
WELL CHARACTERISTICS.—Drilled unused supply well, diameter 6 in., depth 433 ft, cased to 333 ft, open hole.
DATUM.—Altitude of land-surface datum is 348 ft.
REMARKS.—Water-level data for period, January 27 to February 24, 1997, are missing. Record collection discontinued, July 23, 1997.
PERIOD OF RECORD.—January 1982 to July 23, 1997. Continuous record January 1982 to July 23, 1997.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 142.54 ft below land-surface datum, February 10, 1992; lowest, 248.83 ft below land-surface datum, August 31, 1993.

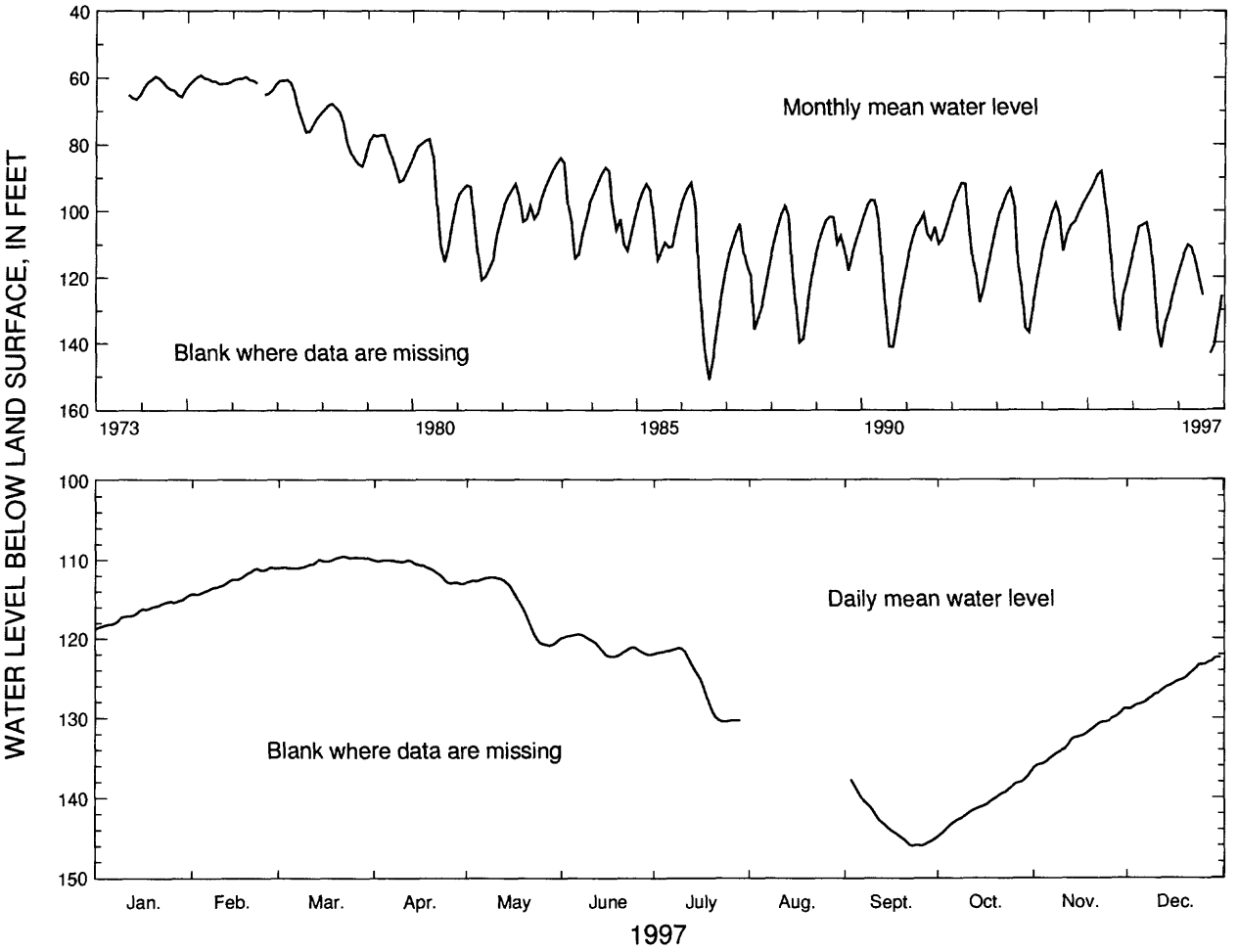


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	166.84	------	162.76	167.89	169.41	179.54	------	------	------	------	------	------
MEAN	169.63	------	168.83	170.49	186.32	183.02	------	------	------	------	------	------
LOW	173.49	------	174.21	173.66	203.56	185.25	------	------	------	------	------	------

SUMMARY FOR 1997 HIGH 162.76 (Mar. 4, 1997) MEAN 178.47 LOW 221.80 (July 19, 1997)

Figure 62. Water level in observation well 09N001, Terrell County.

IDENTIFICATION NUMBER.—11L002.
LOCATION.—Lat 31°35'32", long 84°20'35", Hydrologic Unit 03130008.
SITE NAME.—Georgia Geologic Survey, Albany Nursery.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Clayton.
WELL CHARACTERISTICS.—Drilled observation well, diameter 3 in., depth 656 ft, cased to 542 ft, open hole.
DATUM.—Altitude of land-surface datum is 222 ft.
REMARKS.—Water-level data for period, July 30 to September 2, 1997, are missing.
PERIOD OF RECORD.—September 1973 to current year. Continuous record since September 1973.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 58.90 ft below land-surface datum, April 29, 1975; lowest,152.61 ft below land-surface datum, August 23, 1986.

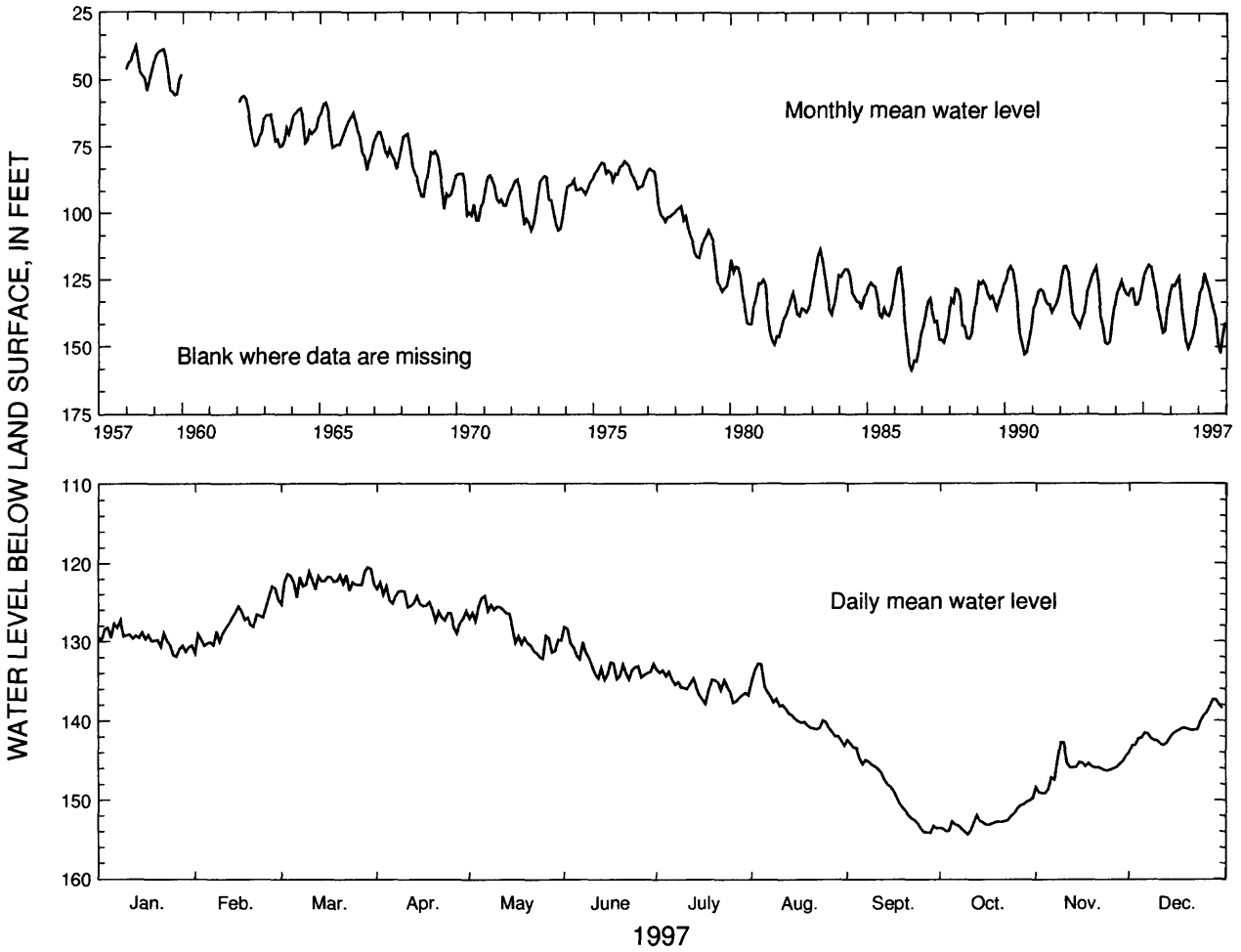


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	114.46	110.99	109.53	110.00	112.17	119.40	121.16	------	137.67	136.72	128.84	122.37
MEAN	116.55	112.56	110.25	111.08	115.62	120.93	125.44	------	143.34	140.82	132.53	125.61
LOW	118.70	114.35	111.04	112.99	120.82	122.22	130.40	------	145.98	144.84	136.19	128.86

SUMMARY FOR 1997 HIGH 109.53 (Mar. 22, 1997) MEAN 123.07 LOW 145.98 (Sept. 23, 1997)

Figure 63. Water level in observation well 11L002, Dougherty County.

IDENTIFICATION NUMBER.—13L002.
LOCATION.—Lat 31°35′51″, long 84°06′24″, Hydrologic Unit 03130008.
SITE NAME.—Albany Water, Gas, and Light Commission, Turner City 2.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Clayton.
WELL CHARACTERISTICS.—Drilled unused supply well, diameter 12 in., depth 760 ft, cased to 713 ft, open hole.
DATUM.—Altitude of land-surface datum is 212.84 ft.
REMARKS.—None.
PERIOD OF RECORD.—December 1957 to current year. Continuous record December 1957 to December 1959, and since January 1962.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 38.19 ft below land-surface datum, April 1, 1959; lowest, 160.88 ft below land-surface datum, July 26, 1986.

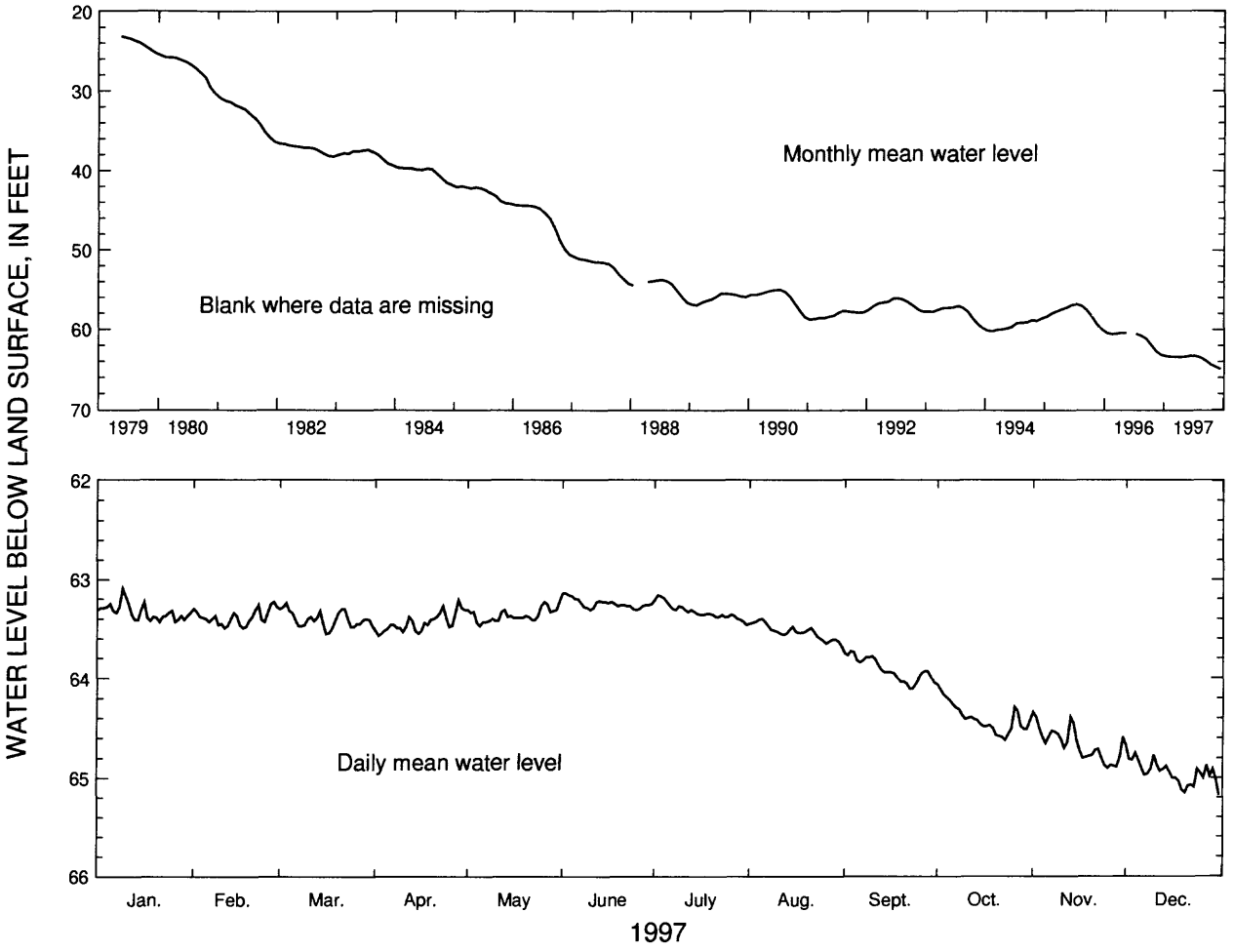


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	127.28	123.00	120.45	122.43	124.21	128.17	133.56	132.79	142.37	149.73	142.76	137.33
MEAN	129.67	127.55	122.25	125.47	128.36	132.84	135.71	138.93	148.80	152.54	146.12	141.11
LOW	131.91	131.49	125.26	129.02	132.18	134.84	137.91	143.10	154.17	154.38	149.14	144.07

SUMMARY FOR 1997 HIGH 120.45 (Mar. 29, 1997) MEAN 135.82 LOW 154.38 (Oct. 10, 1997)

Figure 64. Water level in observation well 13L002, Dougherty County.

IDENTIFICATION NUMBER.—11K005.
LOCATION.—Lat 31°26'54", long 84°21'01", Hydrologic Unit 03130008.
SITE NAME.—U.S. Geological Survey, test well 12.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Clayton.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 690 ft, cased to 630 ft, open hole.
DATUM.—Altitude of land-surface datum is 183 ft.
REMARKS.—None.
PERIOD OF RECORD.—May 1979 to current year. Continuous record since May 1979.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 23.03 ft below land-surface datum, May 24, 1979; lowest, 65.18 ft below land-surface datum, December 31, 1997.

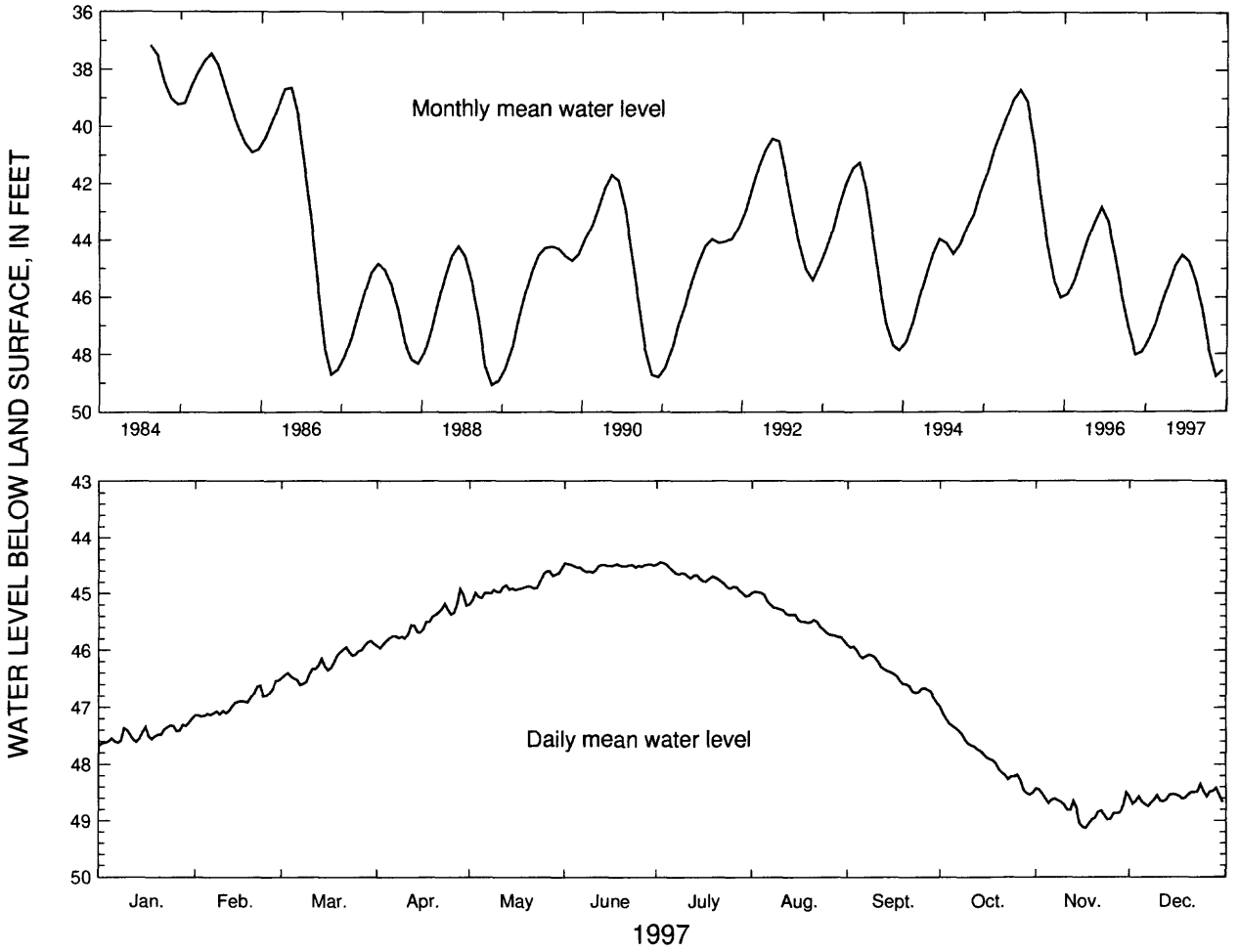


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	63.09	63.23	63.24	63.21	63.22	63.14	63.16	63.40	63.73	64.06	64.34	64.67
MEAN	63.33	63.38	63.40	63.44	63.36	63.24	63.33	63.53	63.91	64.40	64.67	64.94
LOW	63.43	63.49	63.55	63.57	63.47	63.31	63.46	63.68	64.10	64.62	64.90	65.18

SUMMARY FOR 1997 HIGH 63.09 (Jan. 9, 1997) MEAN 63.75 LOW 65.18 (Dec. 31, 1997)

Figure 65. Water level in observation well 11K005, Dougherty County.

IDENTIFICATION NUMBER.—14P014.
LOCATION.—Lat 31°57′31″, long 83°54′23″, Hydrologic Unit 03130006.
SITE NAME.—Georgia Geologic Survey, Veterans Memorial State Park, test well 1.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Clayton.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 550 ft, cased to 500 ft, open hole.
DATUM.—Altitude of land-surface datum is 252 ft.
REMARKS.—None.
PERIOD OF RECORD.—August 1984 to current year. Continuous record since August 1984.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 37.16 ft below land-surface datum, September 2, 1984; lowest, 49.26 ft below land-surface datum, November 29, 1988.



1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	47.20	46.53	45.84	44.92	44.55	44.46	44.45	44.97	45.91	46.99	48.43	48.35
MEAN	47.47	46.92	46.23	45.53	44.88	44.52	44.74	45.42	46.40	47.85	48.79	48.57
LOW	47.67	47.16	46.61	45.96	45.19	44.63	45.05	45.84	46.92	48.54	49.13	48.74

SUMMARY FOR 1997 HIGH 44.45 (July 2, 1997) MEAN 46.44 LOW 49.13 (Nov. 17, 1997)

Figure 66. Water level in observation well 14P014, Crisp County.

Cretaceous Aquifers and Aquifer Systems

Water levels in Cretaceous aquifers and aquifer systems were monitored in 14 wells in 1997 and data from 7 of these wells (fig. 67) are summarized in figures 68-74. The Cretaceous aquifers and aquifer systems include the Providence aquifer in southwestern Georgia and the Dublin, Midville, and the Dublin-Midville aquifer systems in the northeastern part of the Coastal Plain. Water levels in these aquifers and aquifer systems are influenced by variations in precipitation and pumping (Clark and others, 1983, 1985).

In Chattahoochee County near Columbus, the annual mean water level in well 06S001 (fig. 68) was 0.2 ft lower in 1997 than in 1996. A record-low daily mean water level was recorded in this well that was 0.2 ft lower than the previous low.

Providence aquifer

The water level in the Providence aquifer in the Albany area, Dougherty County (fig. 67) was monitored in one well in 1996. The water level in the aquifer is influenced by variations in precipitation and pumping (Clarke and others, 1983). In 1997, the annual mean water level in well 12L021 (fig. 69) was 6.2 ft lower than in 1996.

Dublin aquifer system

The water level was monitored in two wells in the Dublin aquifer system in 1997 and data from one of these wells (fig. 67) are summarized in figure 70. In the eastern Houston County and western Twiggs County area, water levels in wells tapping the aquifer are affected by precipitation and pumping (Clarke and others, 1985). The annual mean water level in well 18U001 (fig. 70) was 0.4 ft lower in 1997 than in 1996.

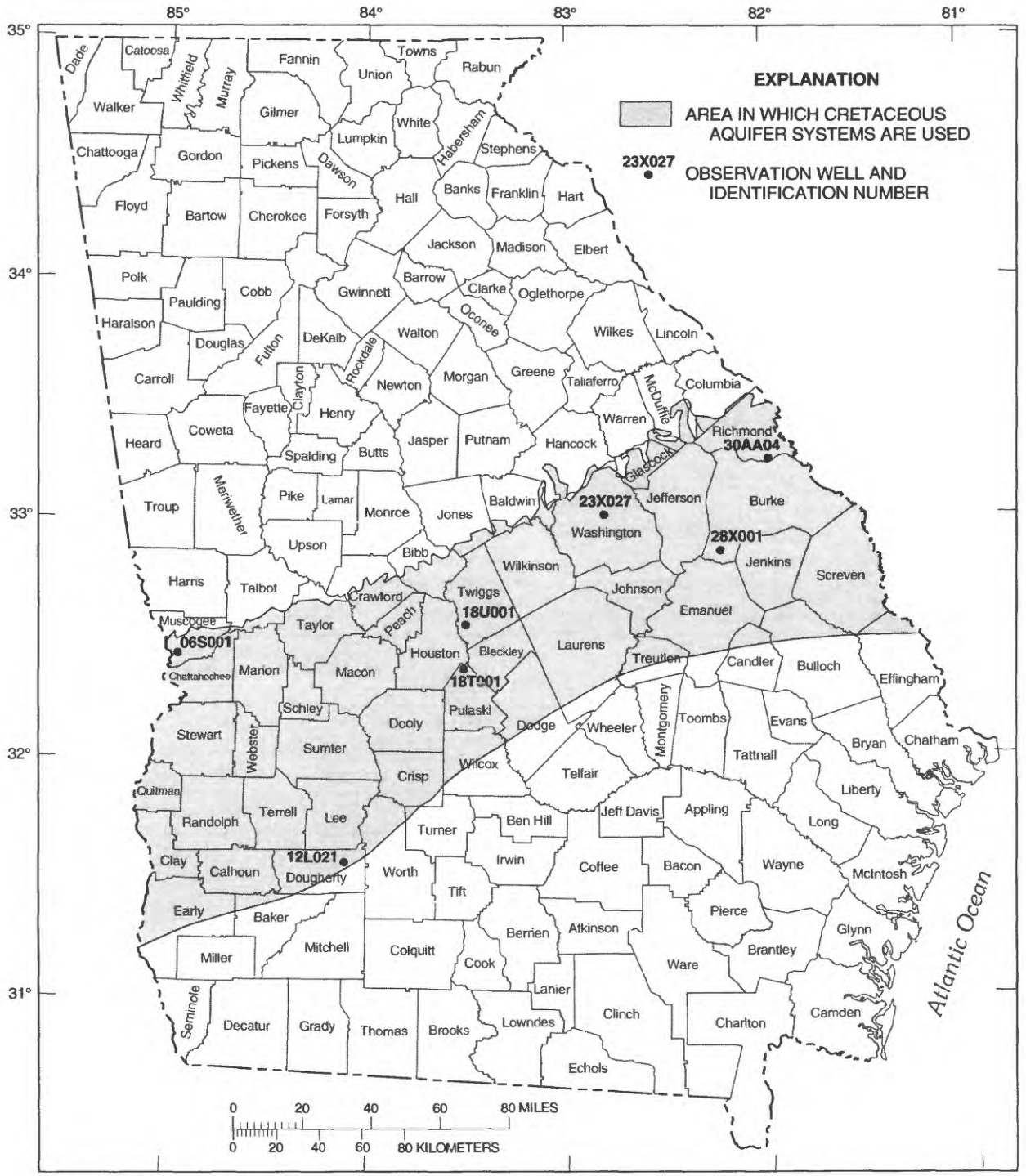
Midville aquifer system

The water level was monitored in six wells in the Midville aquifer system in 1997. Data from two of these wells (fig. 67) are summarized in figures 71 and 72. The water level in the Midville aquifer system is affected mainly by regional pumping (Clarke and others, 1985). In 1997, the annual mean water level in these wells, 18T001 (fig. 71) and 28X001 (fig. 72), was 0.2 and 0.4 ft lower than in 1996. A record-low daily mean water level was recorded in well 28X001 (fig. 72) that was 0.4 ft lower than the previous low.

Dublin-Midville aquifer system

The water level in the Dublin-Midville aquifer system (fig. 67) was monitored in two wells in 1997 and data from these wells are summarized in figures 73 and 74. Water levels in wells tapping the Dublin-Midville aquifer system in Richmond County are influenced mainly by precipitation and by local pumping (Gorday, 1985, p. 28). The recorder on well 30AA04 (fig. 73) near McBean in southern Richmond County was vandalized on February 5, 1997 and not reinstalled until December 11, 1997. The annual mean water level was not calculated because of excessive missing record.

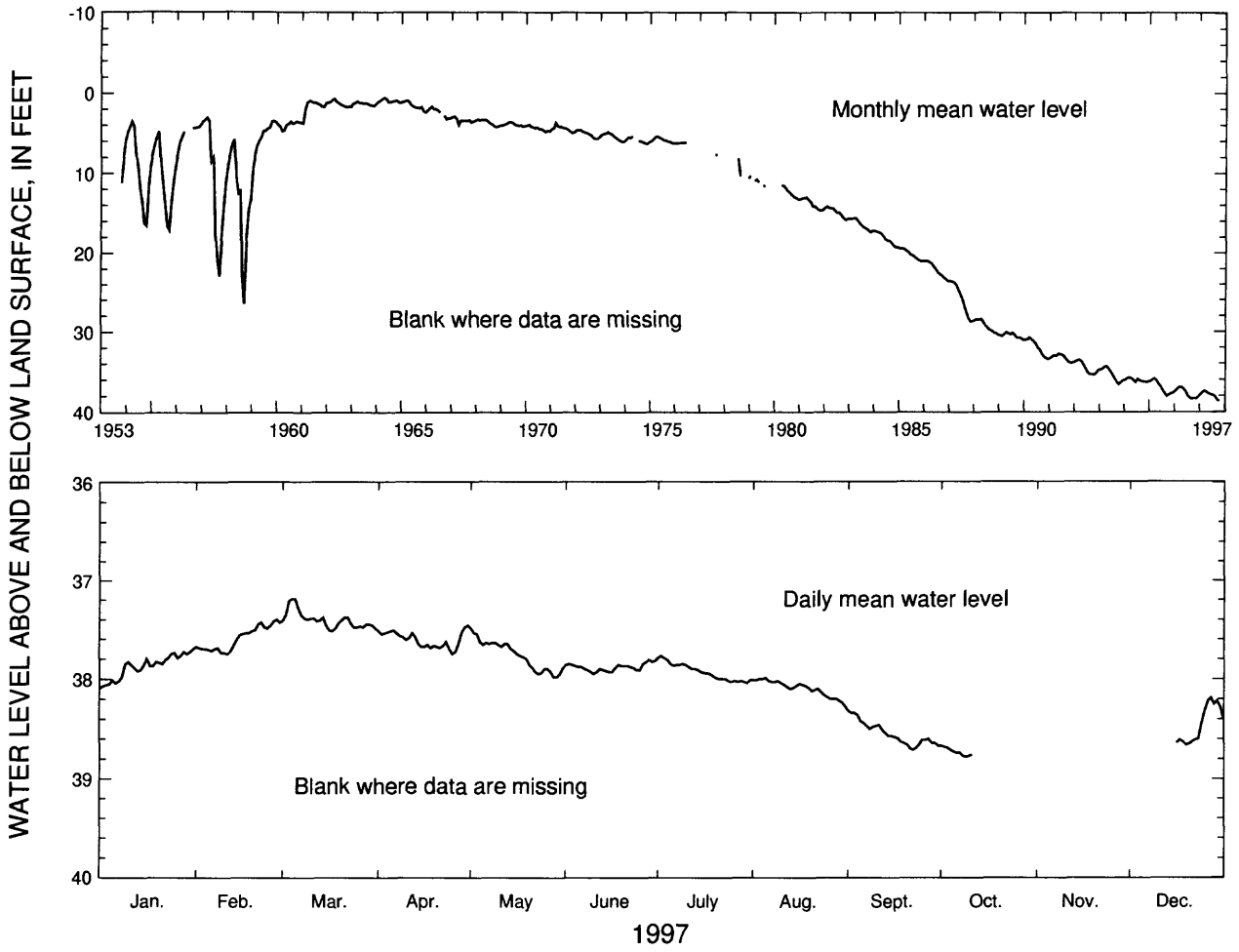
The water level in the Dublin-Midville aquifer system, at Sandersville, Washington County, is influenced mainly by local pumping. During 1997, the annual mean water level in well 23X027 (fig. 74) was 1.2 ft lower than in 1996. A record-low daily mean water level was recorded in well 23X027(fig. 74) that was 1.8 ft lower than the previous low.



Base modified from U.S.Geological Survey
State base map

Figure 67. Locations of observation wells completed in Cretaceous aquifers and aquifer systems.

IDENTIFICATION NUMBER.—06S001.
LOCATION.—Lat 32°20'31", long 84°59'10", Hydrologic Unit 03130003.
SITE NAME.—U.S. Army, Fort Benning.
INSTRUMENTATION.—Digital recorder.
AQUIFER.— Cretaceous (Blufftown, Eutaw, and Tuscaloosa Formations).
WELL CHARACTERISTICS.—Drilled unused supply well, diameter 12 in., depth 568 ft, screened intervals 215-220 ft, 230-235 ft, 280-290 ft, and 540-550 ft.
DATUM.—Altitude of land-surface datum is 255 ft.
REMARKS.—Water-level data for period, October 12 to December 15, 1997, are missing.
PERIOD OF RECORD.—August 1953 to current year. Continuous record since August 1953.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 0.37 ft below land-surface datum, April 10, 1964; lowest, 38.78 ft below land-surface datum, October 9, 1997, but may have been lower during period of missing record, October 12 to December 15, 1997.

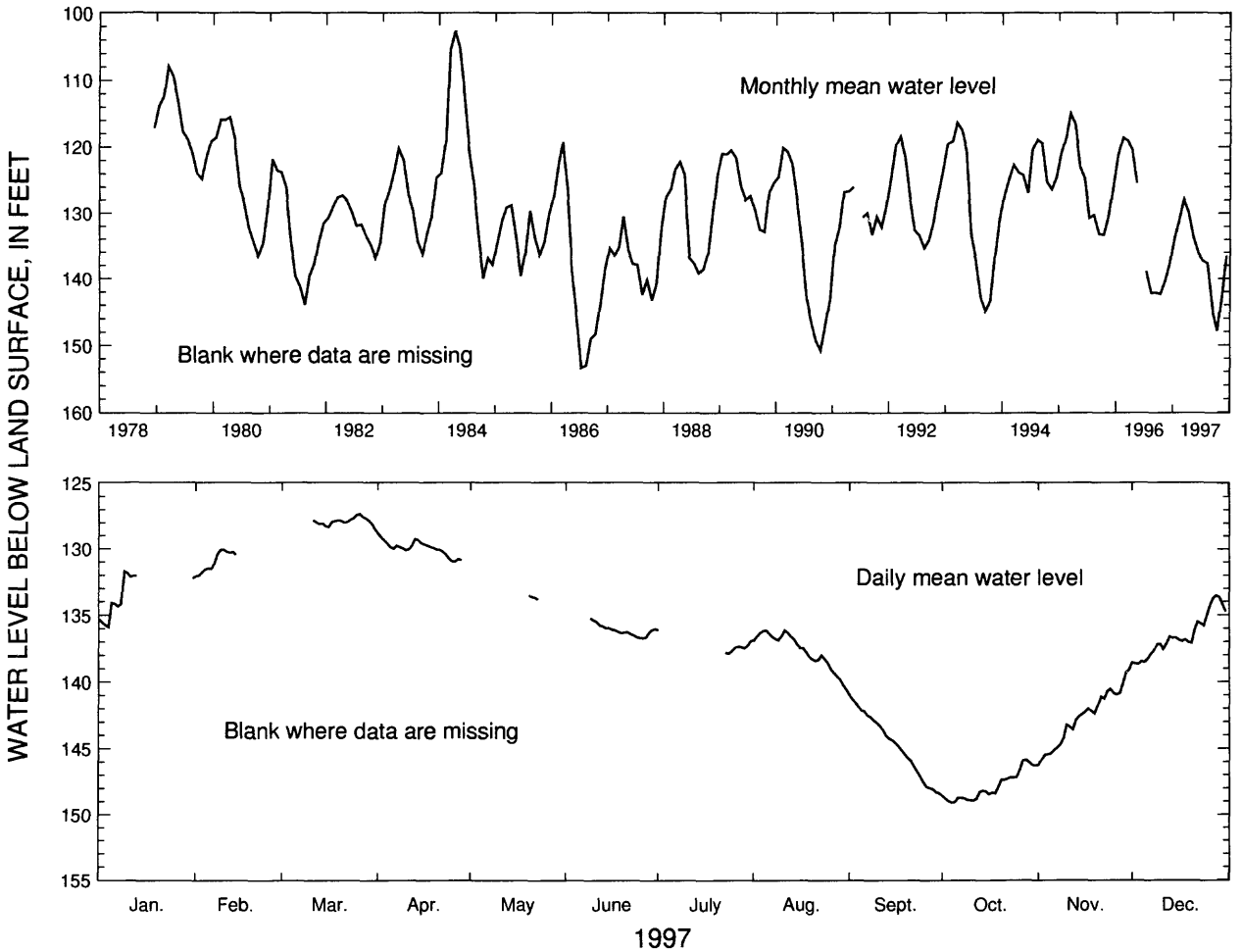


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	37.70	37.40	37.19	37.46	37.49	37.81	37.77	37.99	38.32	------	------	------
MEAN	37.87	37.59	37.41	37.61	37.76	37.88	37.93	38.10	38.55	------	------	------
LOW	38.09	37.75	37.52	37.75	37.98	37.95	38.04	38.28	38.71	------	------	------

SUMMARY FOR 1997 HIGH 37.19 (Mar. 4-5, 1997) MEAN 37.92 LOW 38.78 (Oct. 9, 1997)

Figure 68. Water level in observation well 06S001, Chattahoochee County.

IDENTIFICATION NUMBER.—12L021.
LOCATION.—Lat 31°35'37", long 84°10'29", Hydrologic Unit 03130008.
SITE NAME.—U.S. Geological Survey, test well 10.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Providence.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 834 ft, cased to 810 ft, screen to 830 ft.
DATUM.—Altitude of land-surface datum is 198 ft.
REMARKS.—Water-level data for periods, January 14-30, February 15 to March 10, April 29 to May 19, May 24 to June 8, and July 2-22, 1997, are missing.
PERIOD OF RECORD.—December 1978 to current year. Continuous record since December 1978.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 101.59 ft below land-surface datum, April 26, 1984; lowest, 156.36 ft below land-surface datum, July 26, 1986.

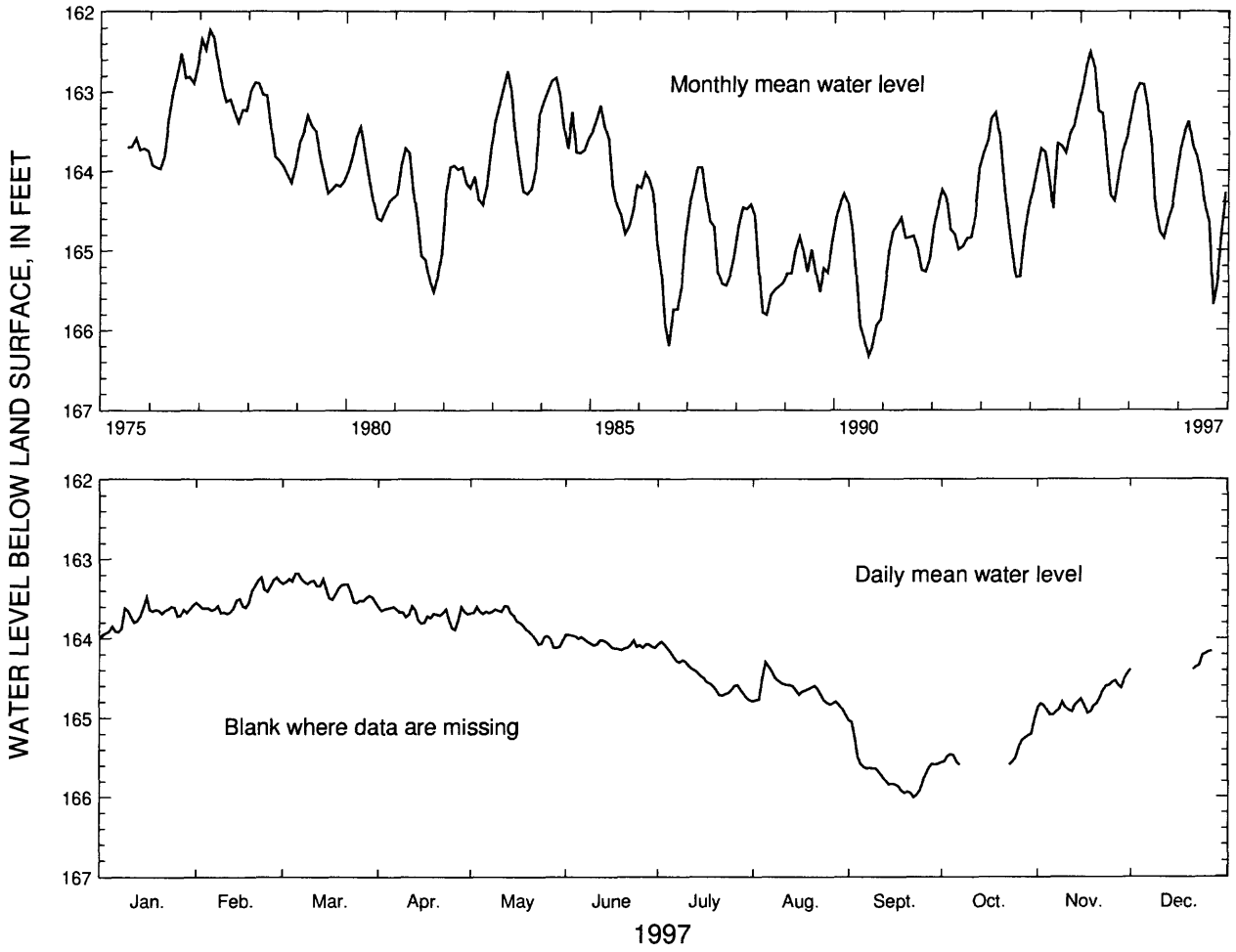


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	------	------	------	128.84	------	------	------	136.12	140.99	145.89	139.07	133.54
MEAN	------	------	------	129.94	------	------	------	137.67	144.70	147.90	142.68	136.53
LOW	------	------	------	130.96	------	------	------	140.57	148.38	149.10	146.26	138.65

SUMMARY FOR 1997 HIGH 127.35 (Mar. 26, 1997) MEAN 137.74 LOW 149.10 (Oct. 4, 1997)

Figure 69. Water level in observation well 12L021, Dougherty County.

IDENTIFICATION NUMBER.—18U001.
LOCATION.—Lat 32°33'02", long 83°26'34", Hydrologic Unit 03070104.
SITE NAME.—Georgia Kraft, U.S. Geological Survey, test well 3.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Dublin aquifer system.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 616 ft, cased to 586 ft, screen to 616 ft.
DATUM.—Altitude of land-surface datum is 442 ft.
REMARKS.—Water-level data for periods, October 8-22, December 2-20, and December 28-31, 1997, are missing.
PERIOD OF RECORD.—July 1975 to current year. Continuous record since July 1975.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 162.00 ft below land-surface datum, April 4, 1977; lowest, 166.44 ft below land-surface datum, October 3, 1990.

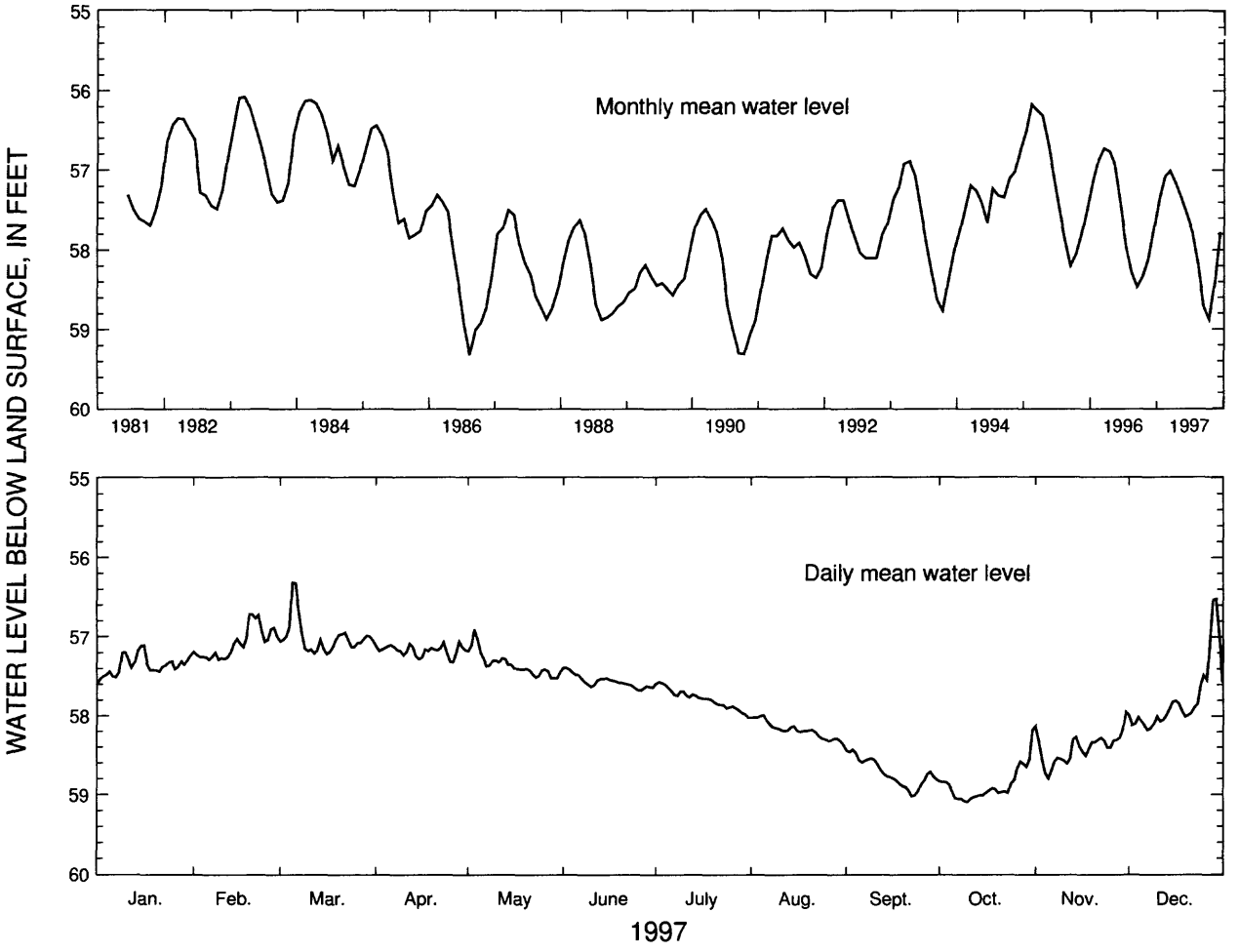


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	163.48	163.23	163.18	163.59	163.59	163.95	164.04	164.30	165.03	------	164.44	------
MEAN	163.72	163.50	163.37	163.69	163.82	164.06	164.46	164.66	165.69	------	164.78	------
LOW	164.00	163.69	163.55	163.89	164.11	164.14	164.78	164.96	166.01	------	164.96	------

SUMMARY FOR 1997 HIGH 163.18 (Mar. 5-6, 1997) MEAN 164.24 LOW 166.01 (Sept. 22, 1997)

Figure 70. Water level in observation well 18U001, Twiggs County.

IDENTIFICATION NUMBER.—18T001.
LOCATION.—Lat 32°22'45", long 83°29'01", Hydrologic Unit 03070104.
SITE NAME.—U.S. Geological Survey, Arrowhead, test well 1.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Midville aquifer system.
WELL CHARACTERISTICS.—Drilled observation well, diameter 6 in., depth 1,555 ft, cased to 970 ft, screened intervals, 970-980 ft, 1,110-1,130 ft, and 1,270-1,280 ft.
DATUM.—Altitude of land-surface datum is 334 ft.
REMARKS.—None.
PERIOD OF RECORD.— June 1981 to current year. Continuous record since June 1981.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 53.90 ft below land-surface datum, July 9, 1994; lowest, 59.52 ft below land-surface datum, October 7-8, 1990.

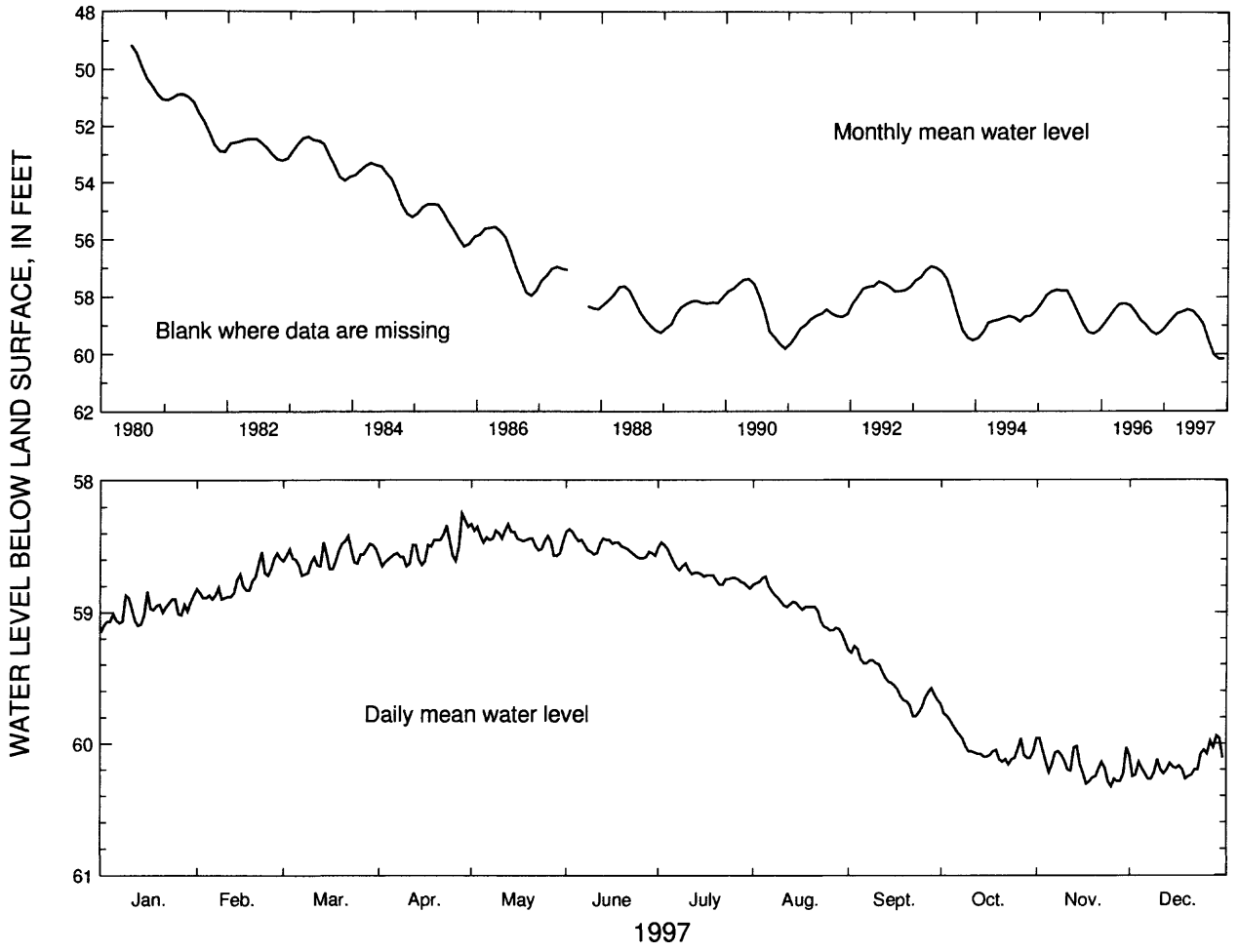


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	57.11	56.72	56.32	57.06	56.91	57.39	57.57	57.99	58.43	58.18	57.95	56.52
MEAN	57.36	57.08	57.01	57.17	57.35	57.56	57.78	58.18	58.72	58.88	58.41	57.78
LOW	57.59	57.29	57.22	57.32	57.52	57.68	58.02	58.37	59.02	59.09	58.80	58.18

SUMMARY FOR 1997 HIGH 56.32 (Mar. 5, 1997) MEAN 57.78 LOW 59.09 (Oct. 10, 1997)

Figure 71. Water level in observation well 18T001, Pulaski County.

IDENTIFICATION NUMBER.—28X001.
LOCATION.—Lat 32°52′32″, long 82°13′15″, Hydrologic Unit 03060201.
SITE NAME.—U.S. Geological Survey, Midville, test well 1.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Midville aquifer system.
WELL CHARACTERISTICS.—Drilled observation well, diameter 4 in., depth 1,045 ft, cased to 1,025 ft, screen to 1,045 ft.
DATUM.—Altitude of land-surface datum is 269 ft.
REMARKS.—None.
PERIOD OF RECORD.—June 1980 to current year. Continuous record since June 1980.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 49.07 ft below land-surface datum, June 4, 1980; lowest, 60.33 ft below land-surface datum, November 25, 1997.

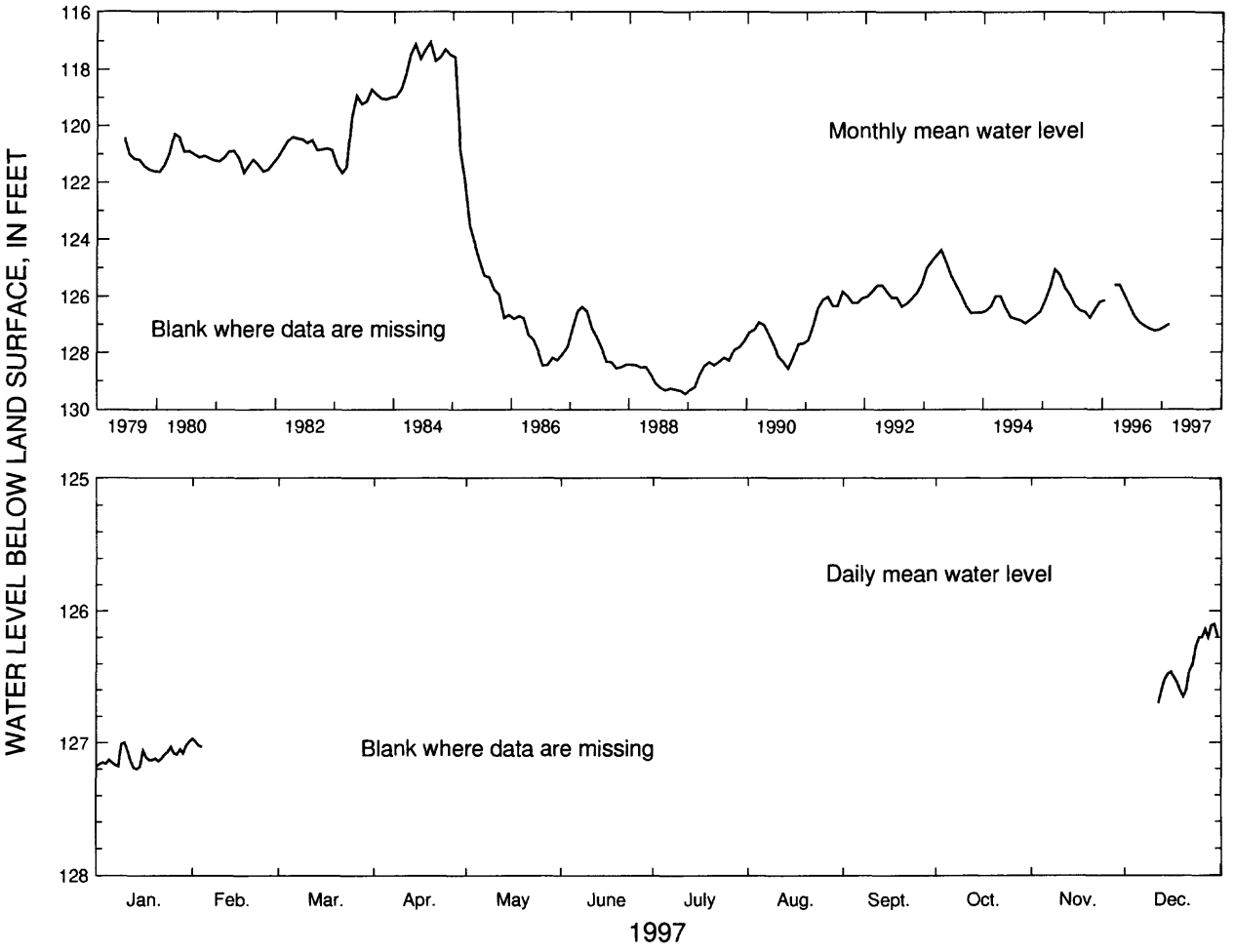


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	58.84	58.54	58.42	58.25	58.33	58.37	58.47	58.73	59.26	59.70	59.96	59.94
MEAN	58.99	58.77	58.58	58.52	58.44	58.50	58.69	58.96	59.53	60.02	60.17	60.16
LOW	59.15	58.90	58.72	58.65	58.57	58.59	58.82	59.23	59.79	60.16	60.33	60.27

SUMMARY FOR 1997 HIGH 58.25 (Apr. 28, 1997) MEAN 59.11 LOW 60.33 (Nov. 25, 1997)

Figure 72. Water level in observation well 28X001, Burke County.

IDENTIFICATION NUMBER.—30AA04.
LOCATION.—Lat 33°15′25″, long 81°57′47″, Hydrologic Unit 03060106.
SITE NAME.—Richmond County water system, U.S. Geological Survey, McBean 2.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Dublin-Midville aquifer system.
WELL CHARACTERISTICS.—Drilled unused municipal well, diameter 6 in., depth 496 ft, cased to 174 ft, screened intervals, 174-192 ft, 299-319 ft, 341-372 ft, and 393-434 ft.
DATUM.—Altitude of land-surface datum is 293 ft.
REMARKS.—Water-level data for period, February 5 to December 11, 1997, are missing. Installation was vandalized on February 5, 1997.
PERIOD OF RECORD.—June 1979 to current year. Continuous record since June 1979.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 116.70 ft below land-surface datum, May 30, 1984; lowest, 129.61 ft below land-surface datum, August 28, 1988.

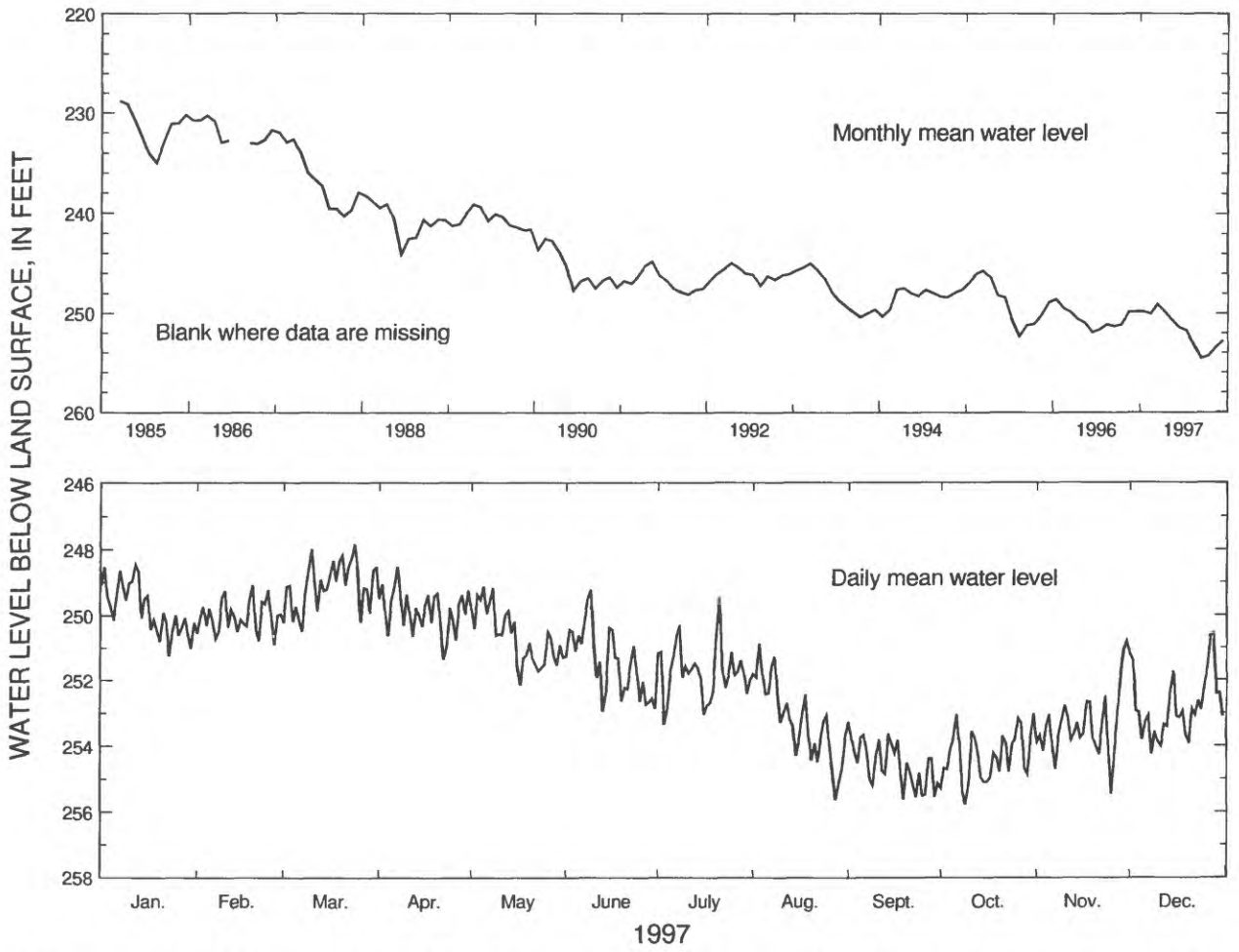


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	126.99	------	------	------	------	------	------	------	------	------	------	------
MEAN	127.11	------	------	------	------	------	------	------	------	------	------	------
LOW	127.20	------	------	------	------	------	------	------	------	------	------	------

SUMMARY FOR 1997 HIGH 126.10 (Dec. 30, 1997) MEAN 126.84 LOW 127.20 (Jan. 14, 1997)

Figure 73. Water level in observation well 30AA04, Richmond County.

IDENTIFICATION NUMBER.—23X027.
LOCATION.—Lat 32°58′48″, long 82°48′08″, Hydrologic Unit 03070102.
SITE NAME.—City of Sandersville, well 8.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Dublin-Midville aquifer system.
WELL CHARACTERISTICS.—Drilled unused municipal well, diameter 8 in., depth 750 ft, cased to 480 ft, screened intervals, 480-485 ft, 605-610 ft, 650-655 ft, 695-700 ft, and 740-745 ft. Lower screens probably caved.
DATUM.—Altitude of land-surface datum is 450 ft.
REMARKS.—None.
PERIOD OF RECORD.—March 1985 to current year. Continuous record since March 1985.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 227.68 ft below land-surface datum, April 9, 1985; lowest, 255.78 ft below land-surface datum, October 9,1997.



1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	248.45	249.08	247.83	248.46	249.12	249.22	249.45	250.86	253.28	253.03	250.81	250.55
MEAN	249.81	250.04	249.09	249.85	250.65	251.44	251.72	253.24	254.56	254.32	253.39	252.79
LOW	251.24	250.90	250.48	251.35	252.15	252.95	253.37	255.64	255.63	255.78	255.46	254.25

SUMMARY FOR 1997 HIGH 247.83 (Mar. 24, 1997) MEAN 251.75 LOW 255.78 (Oct. 9, 1997)

Figure 74. Water level in observation well 23X027, Washington County.

Paleozoic-Rock Aquifers

The water level in an unconfined Paleozoic-rock aquifer in Walker County (fig. 75) was monitored in well 03PP01 in 1997 (fig. 76). In this area, water levels in wells tapping the Paleozoic-rock aquifers are affected mainly by precipitation and local pumping (Cressler, 1964). Precipitation can cause a rapid rise in water levels in wells tapping aquifers overlain by thin regolith. The effect is illustrated in the hydrograph of daily mean water levels for well 03PP01 (fig. 76). The annual mean water level in this well was about the same in 1997 as in 1996.

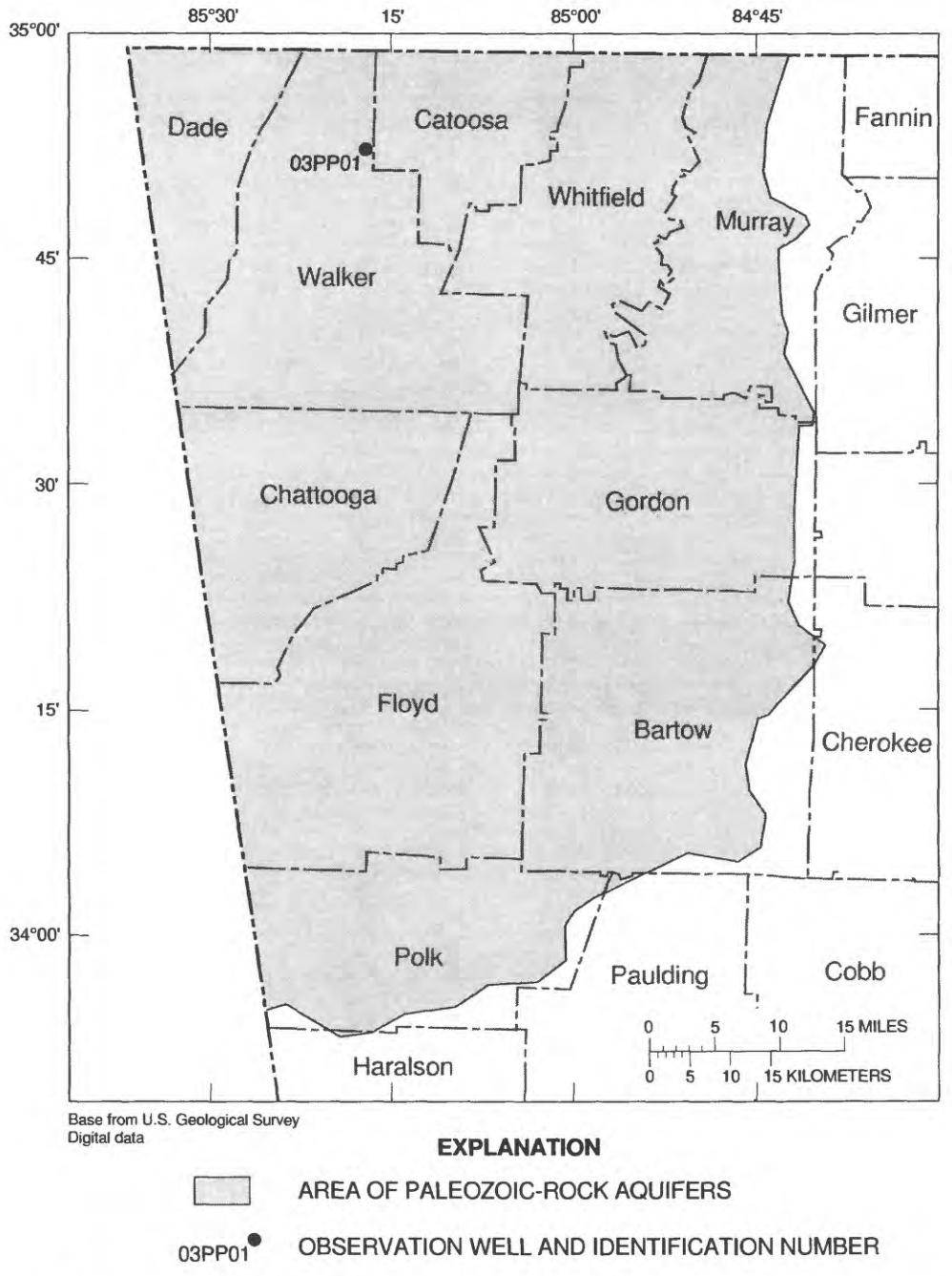
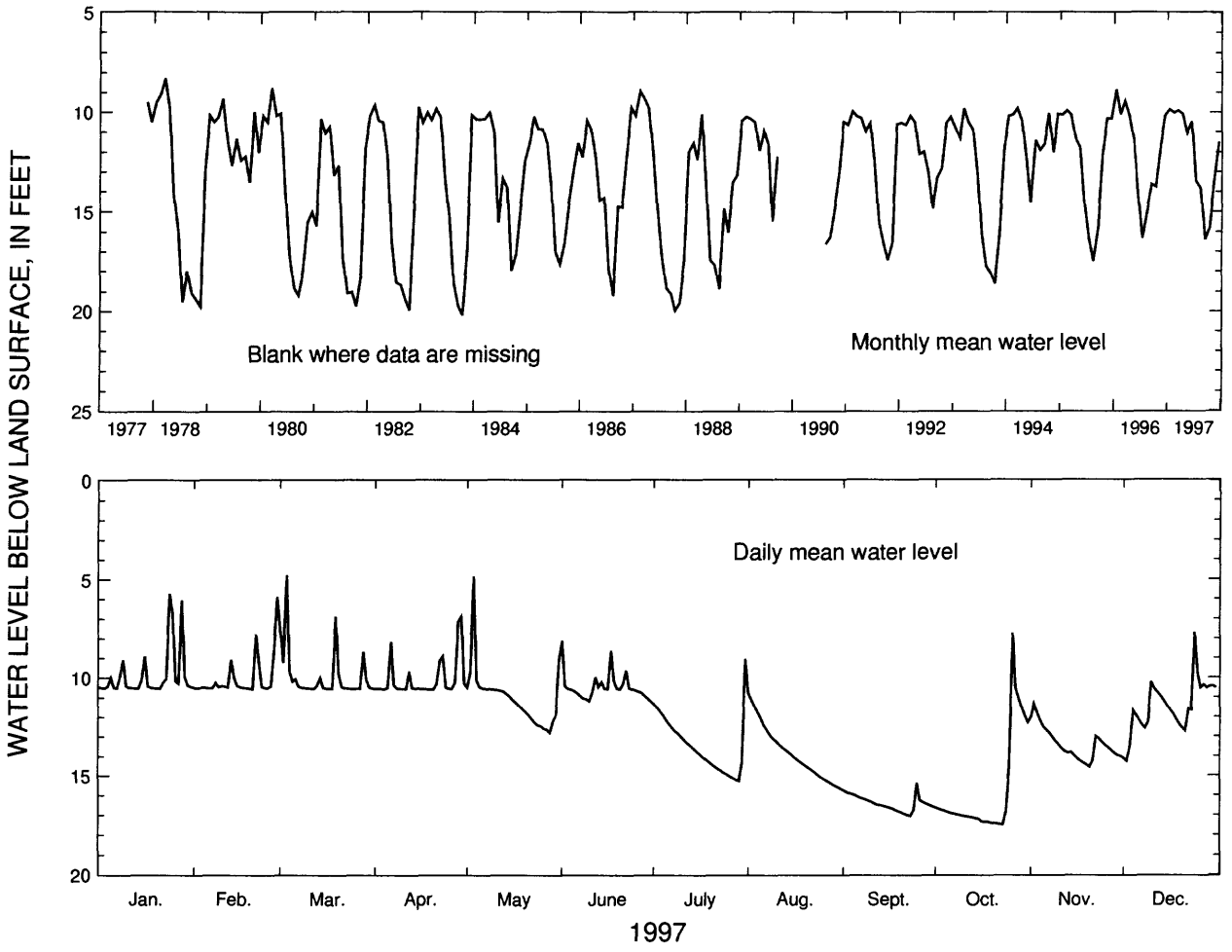


Figure 75. Location of observation well completed in a Paleozoic-rock aquifer.

IDENTIFICATION NUMBER.—03PP01.
LOCATION.—Lat 34°54′08″, long 85°16′00″, Hydrologic Unit 06020001.
SITE NAME.—National Park Service, Chickamauga Battlefield Park.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Paleozoic rock (Chickamauga Limestone).
WELL CHARACTERISTICS.—Cable-tooled, observation well, diameter 8 in., depth 72 ft, cased to 11 ft, open hole.
DATUM.—Altitude of land-surface datum is 730 ft.
REMARKS.—None.
PERIOD OF RECORD.—November 1977 to current year. Continuous record since November 1977.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 1.52 ft below land-surface datum, February 16,1995; lowest, 21.70 ft below land-surface datum, August 5, 1978.



1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	5.69	5.87	4.78	6.87	4.84	8.11	9.03	10.76	15.38	7.74	11.34	7.70
MEAN	9.86	10.02	9.91	10.07	11.03	10.47	13.48	13.81	16.40	15.80	13.40	11.50
LOW	10.53	10.55	10.56	10.59	12.80	11.20	15.28	15.66	17.04	17.48	14.57	14.27

SUMMARY FOR 1997 HIGH 4.78 (Mar. 3, 1997) MEAN 12.16 LOW 17.48 (Oct. 23, 1997)

Figure 76. Water level in observation well 03PP01, Walker County.

Crystalline-Rock Aquifers

Water levels in the crystalline-rock aquifers (fig. 77) were monitored in twelve wells in 1997, five of which are summarized in figures 78-82. Water levels in wells tapping the crystalline-rock aquifers are affected mainly by precipitation and evapotranspiration, and locally by pumping (Cressler and others, 1983). Precipitation can cause a rapid rise in water levels in wells tapping aquifers overlain by thin regolith. The effect is illustrated in the hydrograph for well 11FF04 (fig. 80). The annual mean water levels in these wells (figs. 78-82) ranged from 1.6 ft lower to 0.9 ft higher in 1997 than in 1996.

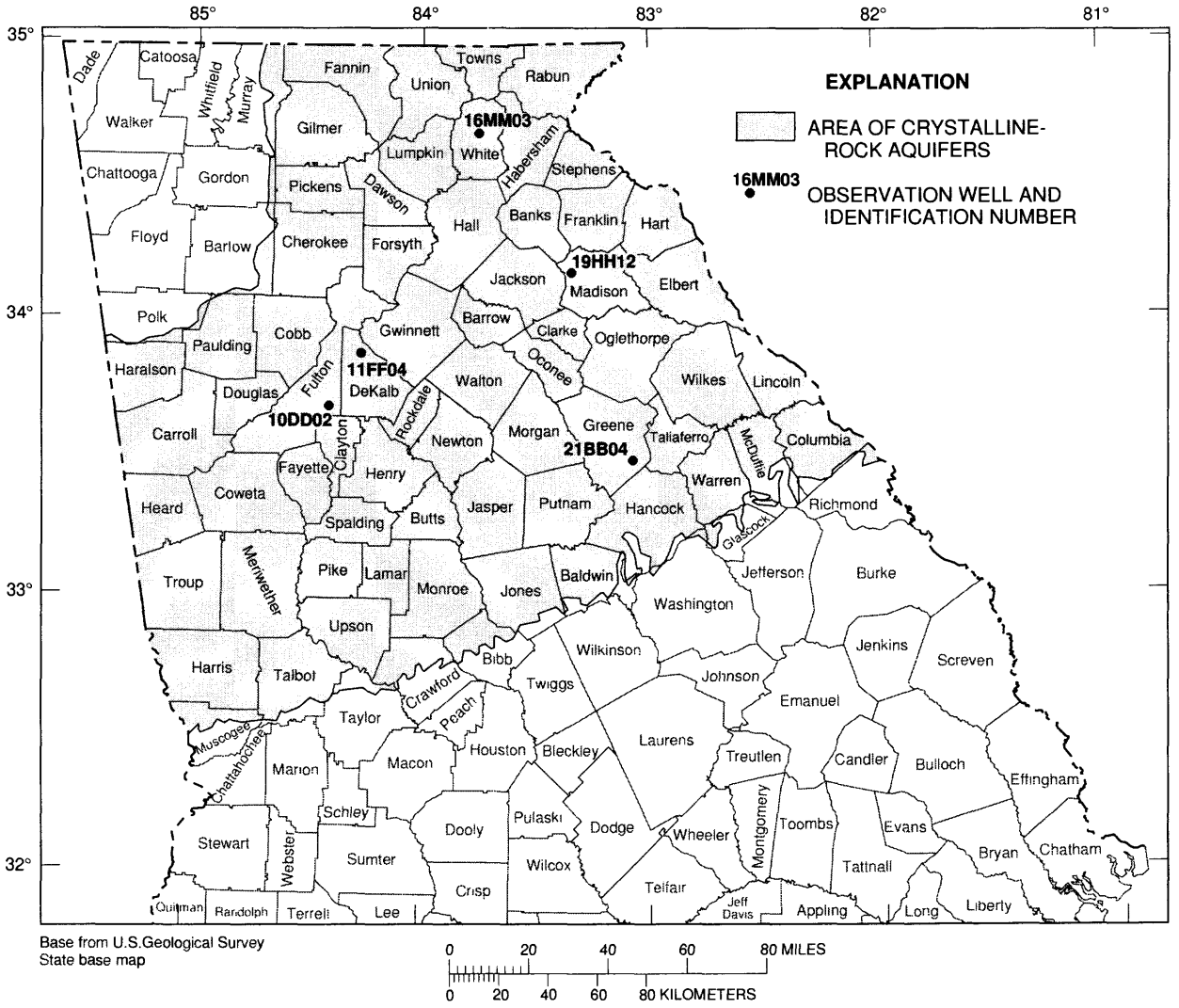
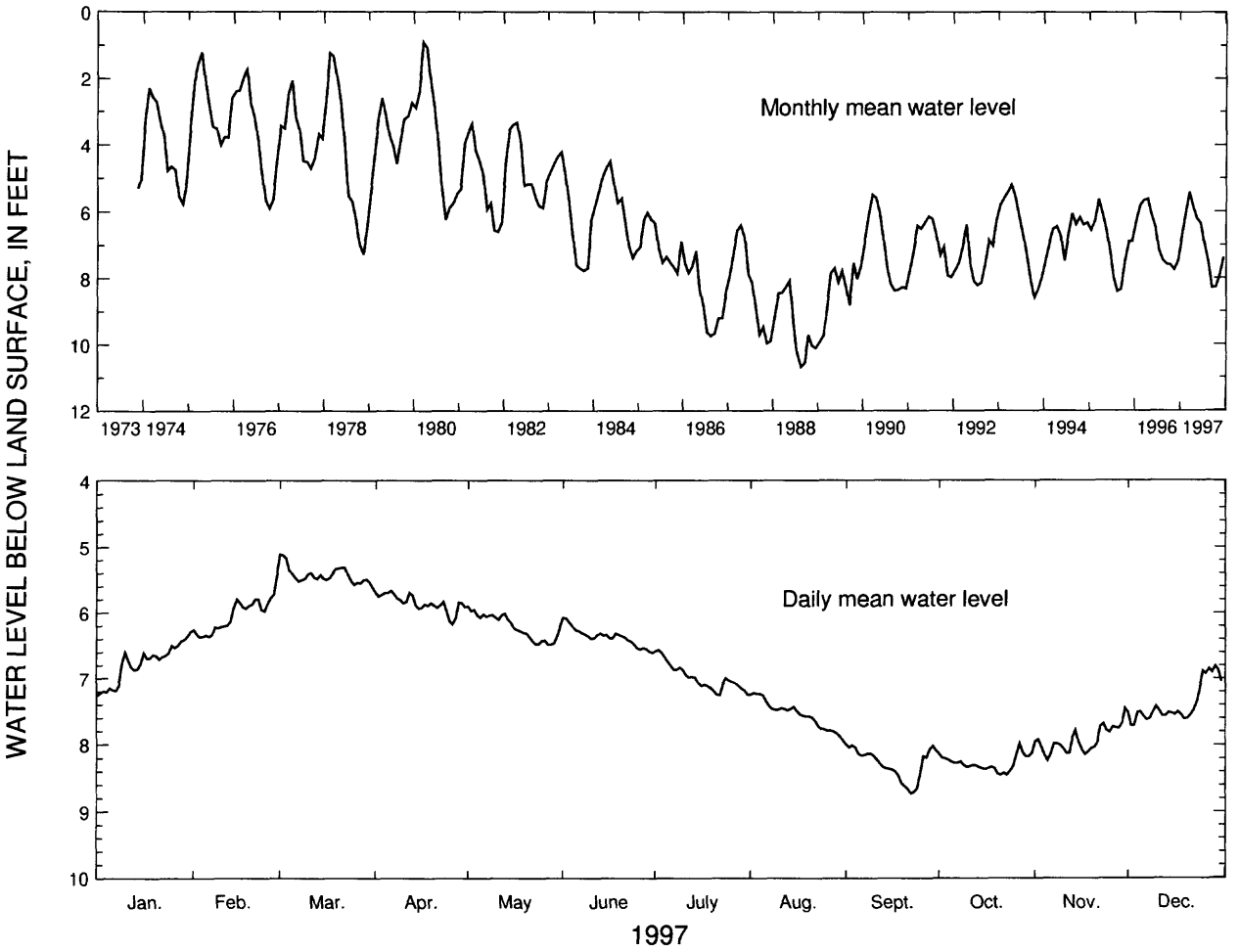


Figure 77. Locations of observation wells completed in crystalline-rock aquifers.

IDENTIFICATION NUMBER.—10DD02.
LOCATION.—Lat 33°42'07", long 84°25'48", Hydrologic Unit 03130002.
SITE NAME.—U.S. Army, Fort McPherson.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Crystalline rock (biotite gneiss).
WELL CHARACTERISTICS.—Drilled, unused supply well, diameter 12 in., depth 338 ft, cased to 41 ft, open hole.
DATUM.—Altitude of land-surface datum is 1,013 ft.
REMARKS.—None.
PERIOD OF RECORD.—November 1973 to current year. Continuous record since November 1973.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 0.10 ft below land-surface datum, March 30, 1980; lowest, 10.95 ft below land-surface datum, September 2, 1988.

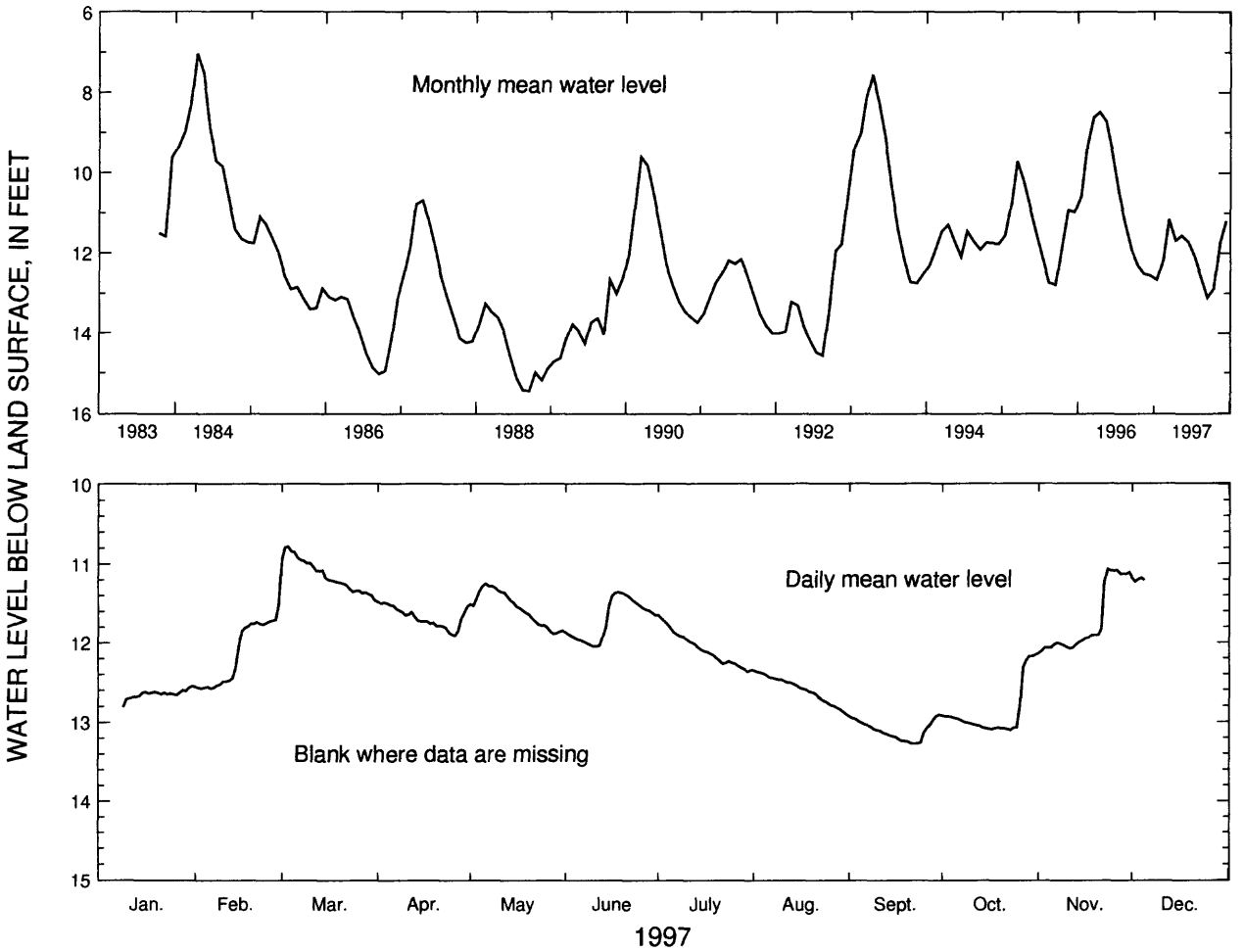


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	6.29	5.43	5.11	5.66	5.90	6.07	6.56	7.22	8.00	7.98	7.45	6.81
MEAN	6.77	6.03	5.42	5.85	6.21	6.36	6.98	7.54	8.29	8.28	7.93	7.38
LOW	7.26	6.37	5.62	6.17	6.48	6.60	7.25	7.94	8.73	8.45	8.23	7.71

SUMMARY FOR 1997 HIGH 5.11 (Mar. 1, 1997) MEAN 6.93 LOW 8.73 (Sept. 22, 1997)

Figure 78. Water level in observation well 10DD02, Fulton County.

IDENTIFICATION NUMBER.—19HH12.
LOCATION.—Lat 34°10'20", long 83°20'17", Hydrologic Unit 03060104.
SITE NAME.—Meadowlake Estates.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Crystalline rock.
WELL CHARACTERISTICS.—Drilled, unused supply well, diameter 6 in., depth 185 ft, cased to 50 ft, open hole.
DATUM.—Altitude of land-surface datum is 800 ft.
REMARKS.—Water-level data for periods, January 1-8 and December 6-31, 1997, are missing.
PERIOD OF RECORD.—October 1983 to current year. Continuous record since October 1983.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 6.69 ft below land-surface datum, April 14, 1984; lowest, 15.56 ft below land-surface datum, September 2-3, 1988.

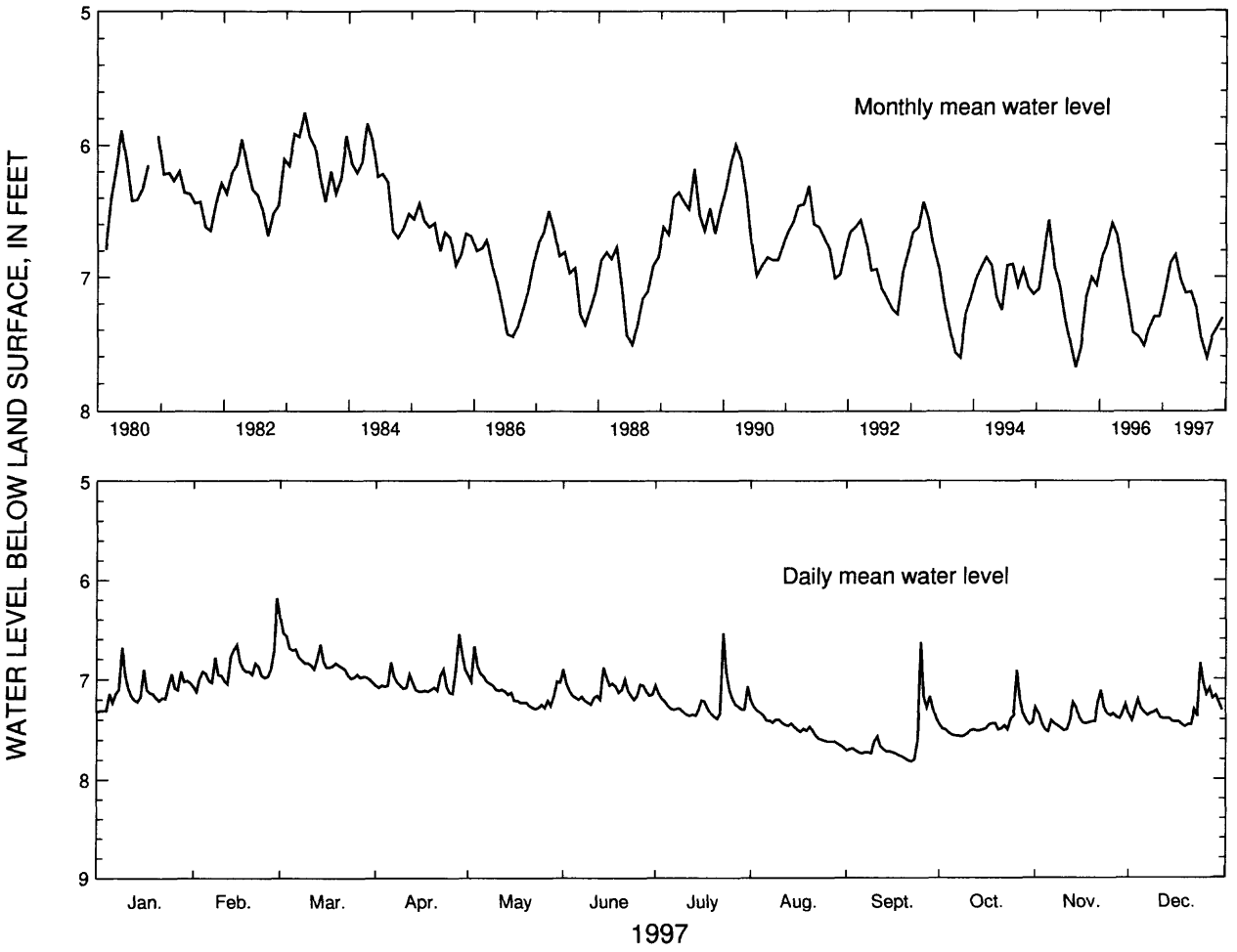


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	------	11.52	10.78	11.48	11.25	11.36	11.65	12.35	12.91	12.16	11.07	------
MEAN	------	12.14	11.14	11.68	11.56	11.71	12.07	12.59	13.11	12.89	11.74	------
LOW	------	12.58	11.46	11.91	11.89	12.05	12.37	12.90	13.27	13.10	12.14	------

SUMMARY FOR 1997 HIGH 10.78 (Mar. 3, 1997) MEAN 12.09 LOW 13.27 (Sept. 21-23, 1997)

Figure 79. Water level in observation well 19HH12, Madison County.

IDENTIFICATION NUMBER.—11FF04.
LOCATION.—Lat 33°55'17", long 84°16'40", Hydrologic Unit 03130001.
SITE NAME.—U.S. Geological Survey, test well 5.
INSTRUMENTATION.—Electronic data recorder.
AQUIFER.—Crystalline rock.
WELL CHARACTERISTICS.—Drilled, observation well, diameter 6 in., depth 620 ft, cased to 36 ft, open hole.
DATUM.—Altitude of land-surface datum is 950 ft.
REMARKS.—None.
PERIOD OF RECORD.—February 1980 to current year. Continuous record since February 1980.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 4.98 ft below land-surface datum, March 17, 1990; lowest, 7.85 ft below land-surface datum, August 18, 1995.

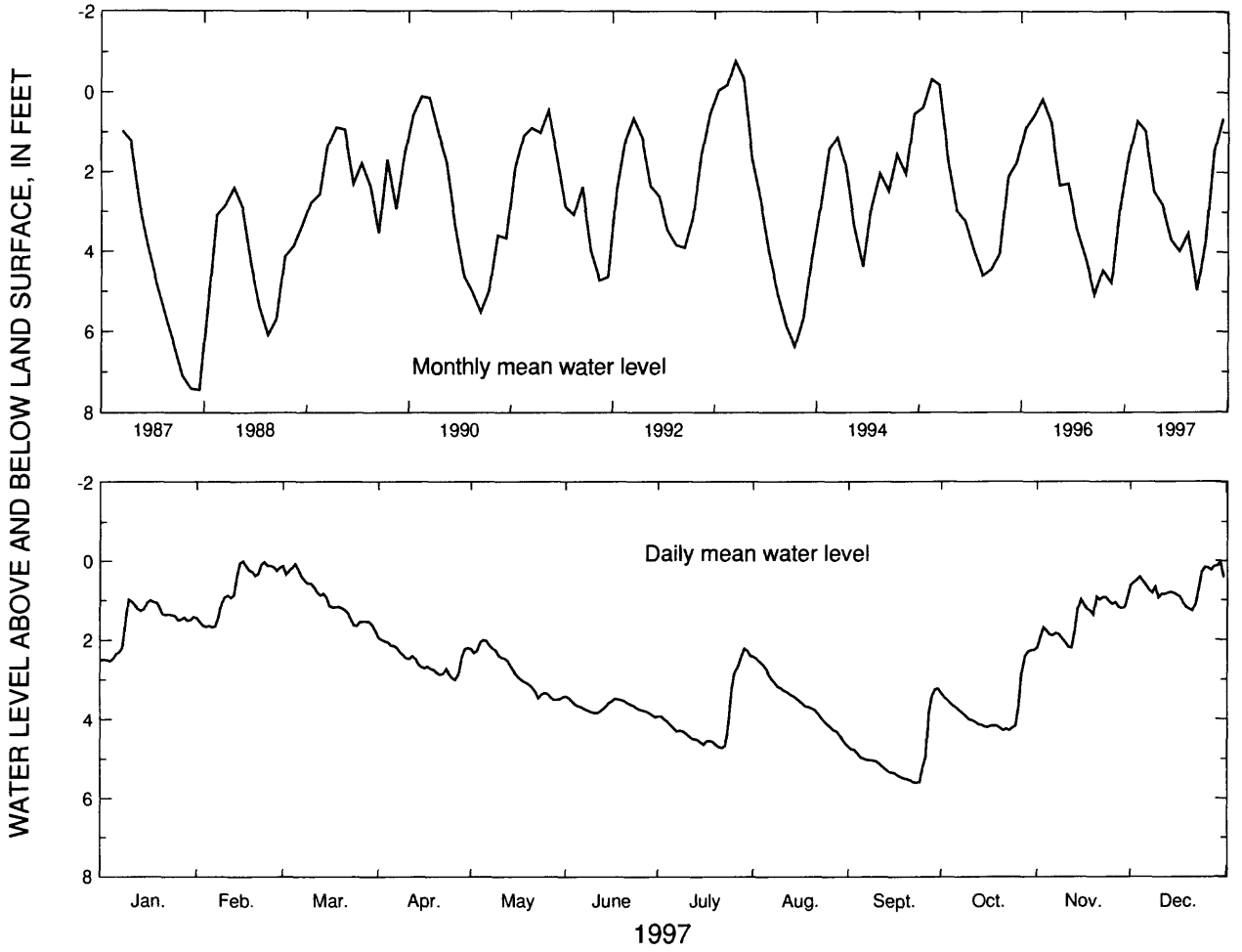


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	6.68	6.18	6.38	6.55	6.67	6.88	6.54	7.21	6.63	6.91	7.11	6.84
MEAN	7.11	6.89	6.83	7.02	7.12	7.11	7.23	7.48	7.61	7.45	7.38	7.31
LOW	7.32	7.12	7.03	7.14	7.29	7.25	7.39	7.68	7.82	7.57	7.52	7.47

SUMMARY FOR 1997 HIGH 6.18 (Feb. 28, 1997) MEAN 7.21 LOW 7.82 (Sept. 22, 1997)

Figure 80. Water level in observation well 11FF04, DeKalb County.

IDENTIFICATION NUMBER.—21BB04.
LOCATION.—Lat 33°28'08", long 83°01'02", Hydrologic Unit 03070101.
SITE NAME.—Charles Veazey.
INSTRUMENTATION.—Analog recorder.
AQUIFER.—Crystalline rock.
WELL CHARACTERISTICS.—Drilled, unused supply well, diameter 6 in., depth 497 ft, cased to 15 ft, open hole.
DATUM.—Altitude of land-surface datum is 675 ft.
REMARKS.—None.
PERIOD OF RECORD.—March 1987 to current year. Continuous record since March 1987.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 1.25 ft above land-surface datum, March 28, 1993; lowest, 7.58 ft below land-surface datum, December 7, 1987.

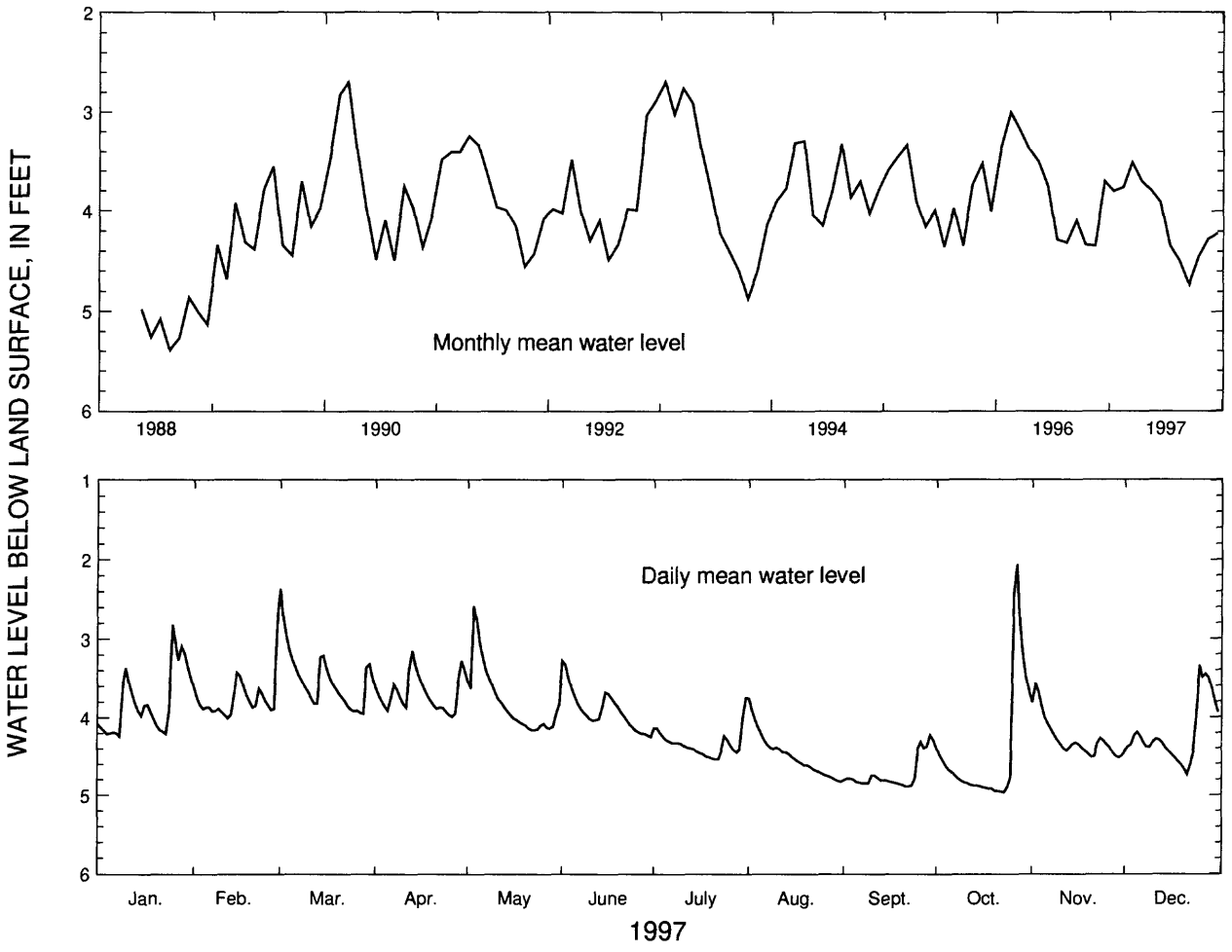


1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	0.98	0.00	0.08	1.94	2.00	3.42	2.22	2.43	3.23	2.25	0.91	0.03
MEAN	1.57	0.72	0.97	2.49	2.81	3.68	3.97	3.53	4.97	3.72	1.46	0.66
LOW	2.53	1.67	1.77	3.00	3.51	3.95	4.72	4.61	5.61	4.28	2.20	1.27

SUMMARY FOR 1997 HIGH 0.00 (Feb. 16, 1997) MEAN 2.56 LOW 5.61 (Sept. 23, 1997)

Figure 81. Water level in observation well 21BB04, Greene County.

IDENTIFICATION NUMBER.—16MM03.
LOCATION.—Lat 34°43'14", long 83°43'32", Hydrologic Unit 03130001.
SITE NAME.—Unicoi State Park, well 4.
INSTRUMENTATION.—Digital recorder.
AQUIFER.—Crystalline rock.
WELL CHARACTERISTICS.—Drilled, unused supply well, diameter 6.25 in., depth 400 ft, cased to 72 ft, open hole.
DATUM.—Altitude of land-surface datum is 1550 ft.
REMARKS.—None.
PERIOD OF RECORD.—May 1988 to current year. Continuous record since May 1988.
EXTREMES FOR PERIOD OF RECORD.—Highest water level, 0.74 ft above land-surface datum, March 17, 1989; lowest, 5.59 ft below land-surface datum, September 2, 1988.



1997	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
HIGH	2.82	2.81	2.36	3.15	2.58	3.28	3.75	3.76	4.23	2.06	3.57	3.34
MEAN	3.80	3.76	3.51	3.70	3.79	3.91	4.34	4.49	4.73	4.45	4.27	4.22
LOW	4.24	4.01	3.95	3.99	4.16	4.25	4.54	4.83	4.89	4.97	4.52	4.74

SUMMARY FOR 1997 HIGH 2.06 (Oct. 27, 1997) MEAN 4.08 LOW 4.97 (Oct. 23, 1997)

Figure 82. Water level in observation well 16MM03, White County.

CHLORIDE CONCENTRATION IN WATER FROM THE FLORIDAN AQUIFER SYSTEM

Chloride concentration in water from the Floridan aquifer system has been monitored in coastal Georgia since the 1950's. During 1997, water samples were collected from 23 wells that tap the Floridan aquifer system in the Savannah and Brunswick areas and analyzed for chloride concentration. Graphs of chloride concentration in water for 14 of these wells (fig. 83; table 5) are shown in figures 84, 85, 87, 88, and 89. Although chloride concentration may fluctuate in the intervals between sample-collection periods, measured points on these plots are connected by straight lines to assist visualization. Chloride concentration in water from the Upper Floridan aquifer in most of the coastal Georgia area is less than 40 milligrams per liter (mg/L) (Clarke and others, 1990, p. 48), which is within the 250 mg/L drinking-water standard established by the Georgia Department of Natural Resources (1977) and the U.S. Environmental Protection Agency (1990). Chloride concentration in water from the Upper Floridan aquifer that exceeds the drinking-water standard has been detected in the Brunswick area. Water in the Lower Floridan aquifer generally has high chloride concentration in the Savannah and Brunswick areas. Chloride concentration in water from the Fernandina permeable zone at the base of the Lower Floridan aquifer has been measured as high as 30,000 mg/L (Krause and Randolph, 1989, p. D51).

Table 5. Observation wells for which chloride-concentration graphs are included in this report

[GGS, Georgia Geologic Survey; USGS, U.S. Geological Survey]

County	Aquifer	USGS Site Identification Number	Well Identification number	Site name	Open interval (in feet)
Chatham	Lower Floridan	320151080540403	38Q196	USGS, test well 1, point 2	870-925
Chatham	Lower Floridan	320122080510202	39Q017	USGS, test well 7, point 1	710-745
Chatham	Lower Floridan	320122080510203	39Q018	USGS, test well 7, point 2	630-670
Chatham	Lower Floridan	320151080540502	38Q004	USGS, test well 4	606-657
Chatham	Upper Floridan	320622081063701	37Q185	GGS, Hutchinson Island, test well 1	274-360
Chatham	Upper Floridan	315906081011202	37P114	Skidaway Institute, test well 2	262-400
Glynn	Lower Floridan	310750081292001	34H399	USGS, test well 19	1,075-1,218
Glynn	Lower Floridan	310818081294201	34H391	USGS, test well 16	1,070-1,159
Glynn	Upper Floridan, lower water-bearing zone	310822081294201	34H403	USGS, test well 24	788-982
Glynn	Upper Floridan, upper water-bearing zone	311020081295205	34H469	USGS, test well 2	540-566
Glynn	Upper Floridan, upper water-bearing zone	311007081301702	33H133	USGS, test well 6	520-790
Glynn	Upper Floridan, upper water-bearing zone	311016081294202	34H427	E.M. Champion, well 2	500-640
Glynn	Upper Floridan, upper water-bearing zone	310825081294201	34H393	USGS, test well 17	615-723
Glynn	Upper Floridan, lower water-bearing zone	311007081301701	33H127	USGS, test well 3	823-925

Savannah Area

During 1997, twelve wells were pumped and sampled in Chatham County (fig. 83) six of which are summarized in figure 84 and 85. Data from these wells indicate that chloride concentration generally increases with depth below land surface and is not changing appreciably with time (fig. 84 and 85).

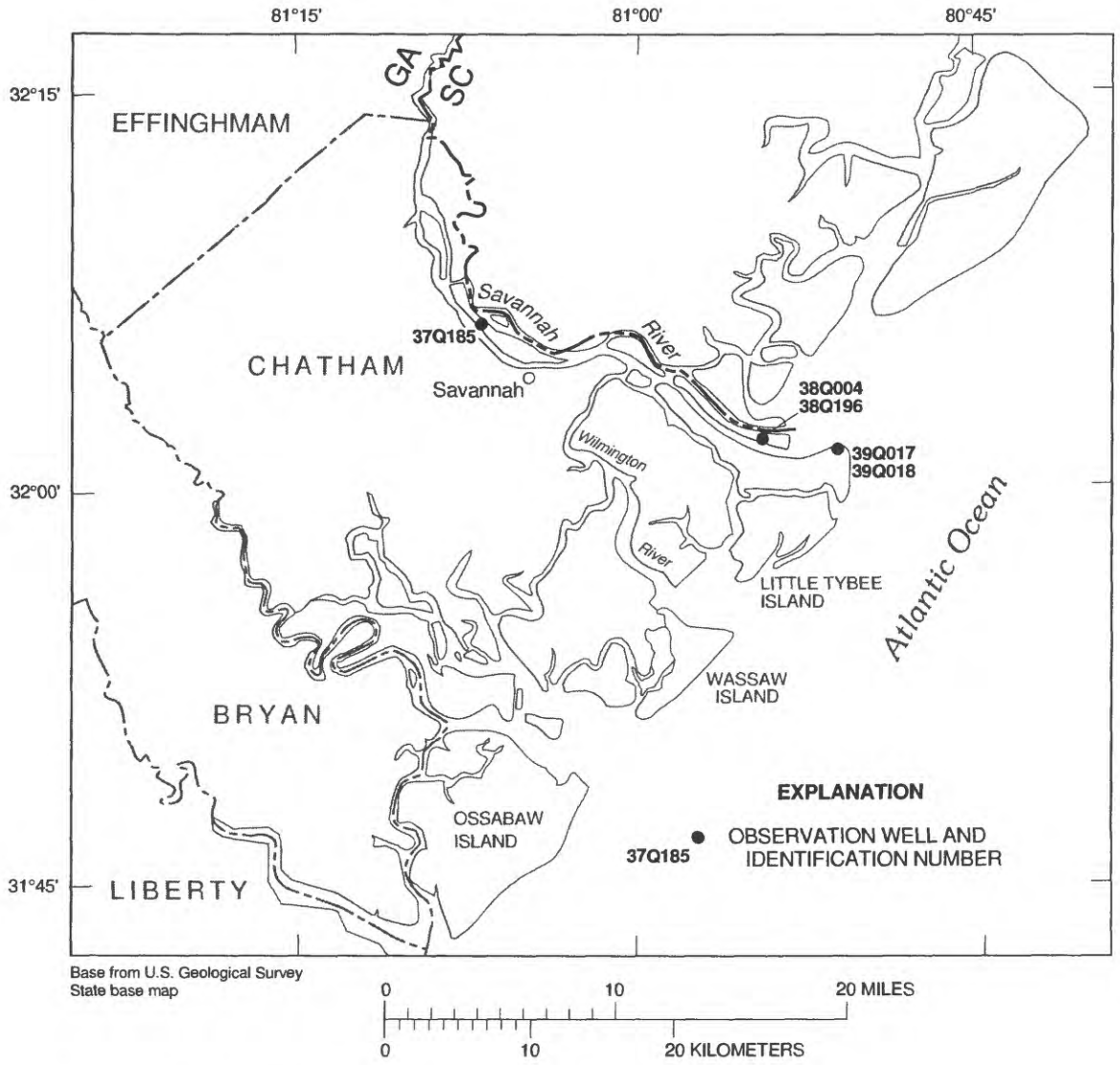


Figure 83. Locations of chloride-monitoring wells completed in the Floridan aquifer system in the Savannah area.

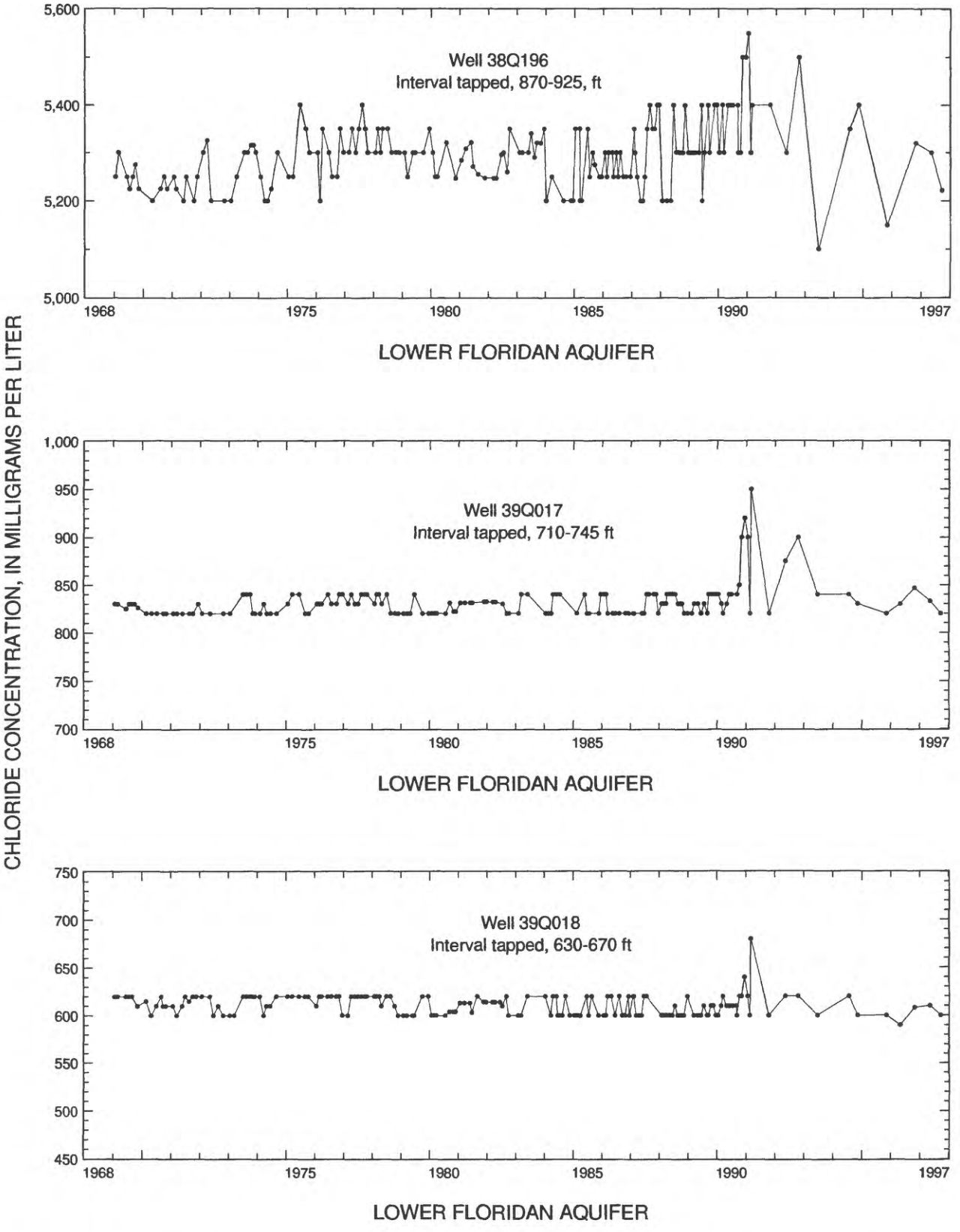


Figure 84. Chloride concentration in water from the Lower Floridan aquifer in the Savannah area.

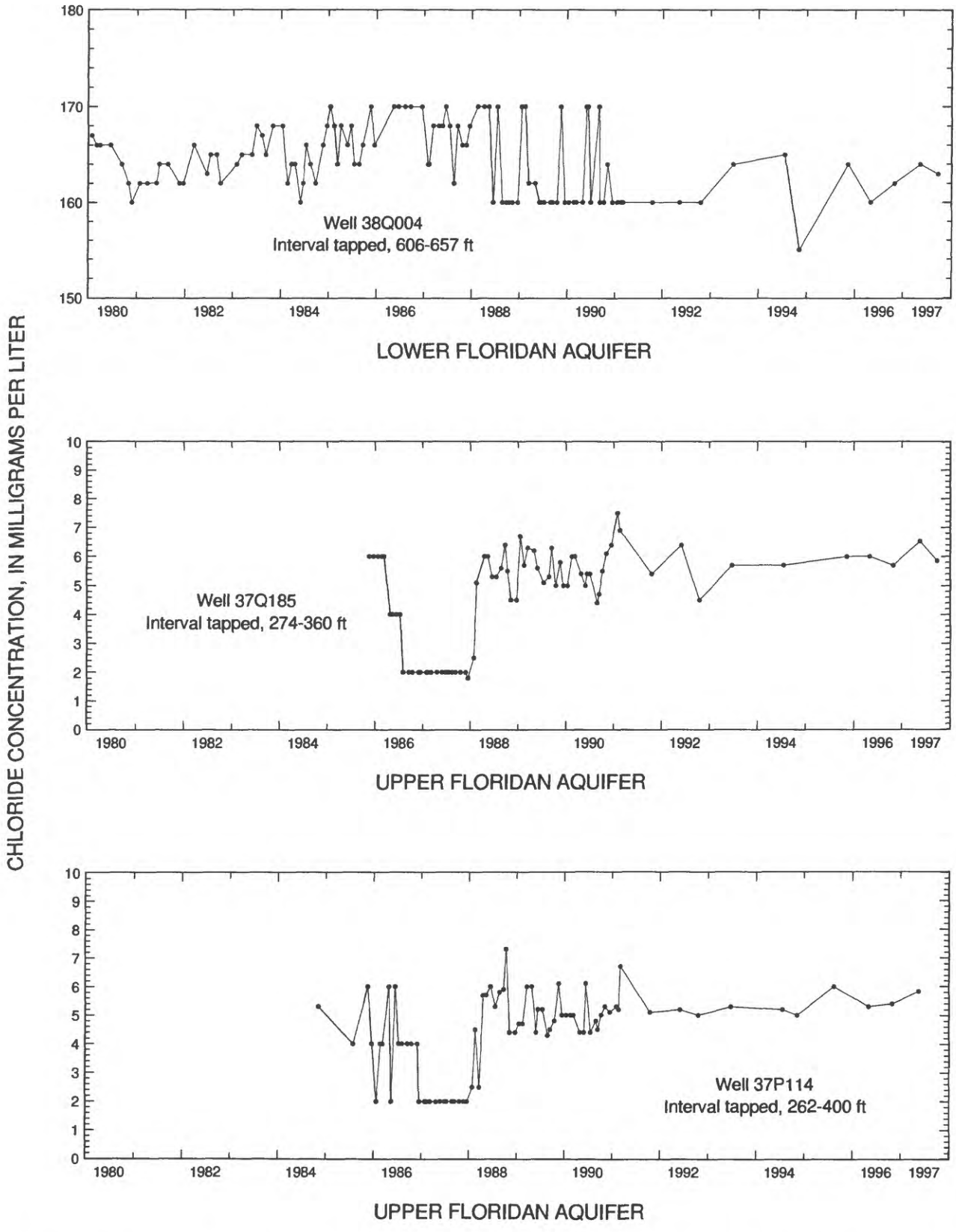


Figure 85. Chloride concentration in water from the Upper and Lower Floridan aquifers in the Savannah area.

Brunswick Area

Since pumping began in the Brunswick area in the late 1800's, ground-water withdrawal has lowered the water level in the Upper Floridan aquifer (Krause and Randolph, 1989). This water-level decline has allowed saltwater to migrate upward into the brackish-water zone of the Lower Floridan aquifer and into the Upper Floridan aquifer in Brunswick from the Fernandina permeable zone, which is at the base of the Lower Floridan aquifer (Krause and Randolph, 1989, p. D51). Chloride concentration in water from the upper water-bearing zone of the Upper Floridan aquifer is greater than 2,000 mg/L in parts of Brunswick.

In the Brunswick, Glynn County area, eight wells were pumped and sampled during 1997 for chloride analysis. Graphs of chloride concentration in water from eight wells (fig. 86) tapping various zones of the Floridan aquifer system are shown in figures 87, 88, and 89.

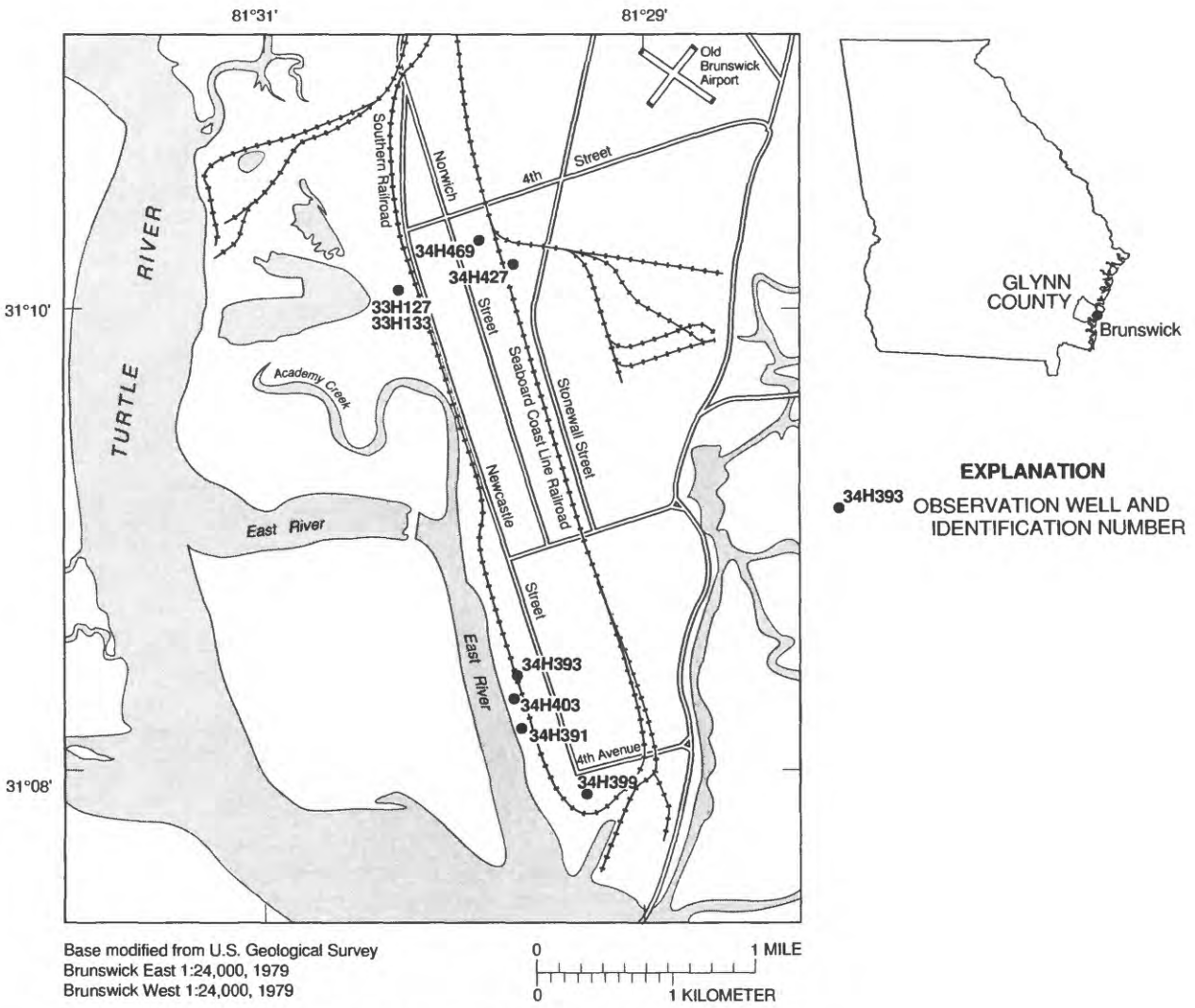


Figure 85. Locations of chloride-monitoring wells completed in the Floridan aquifer system in the Brunswick area.

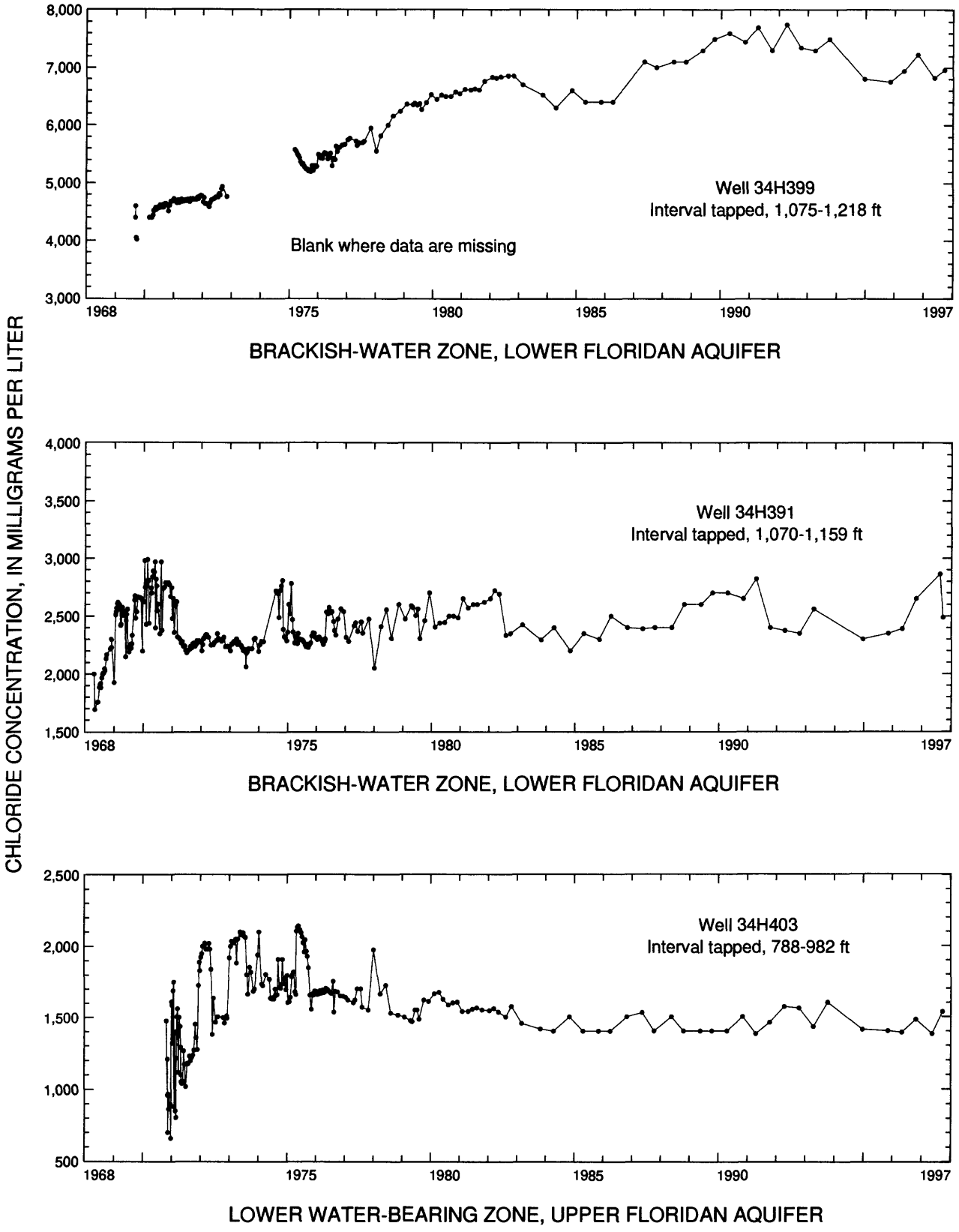


Figure 87. Chloride concentration in water from the Floridan aquifer system in the Brunswick area.

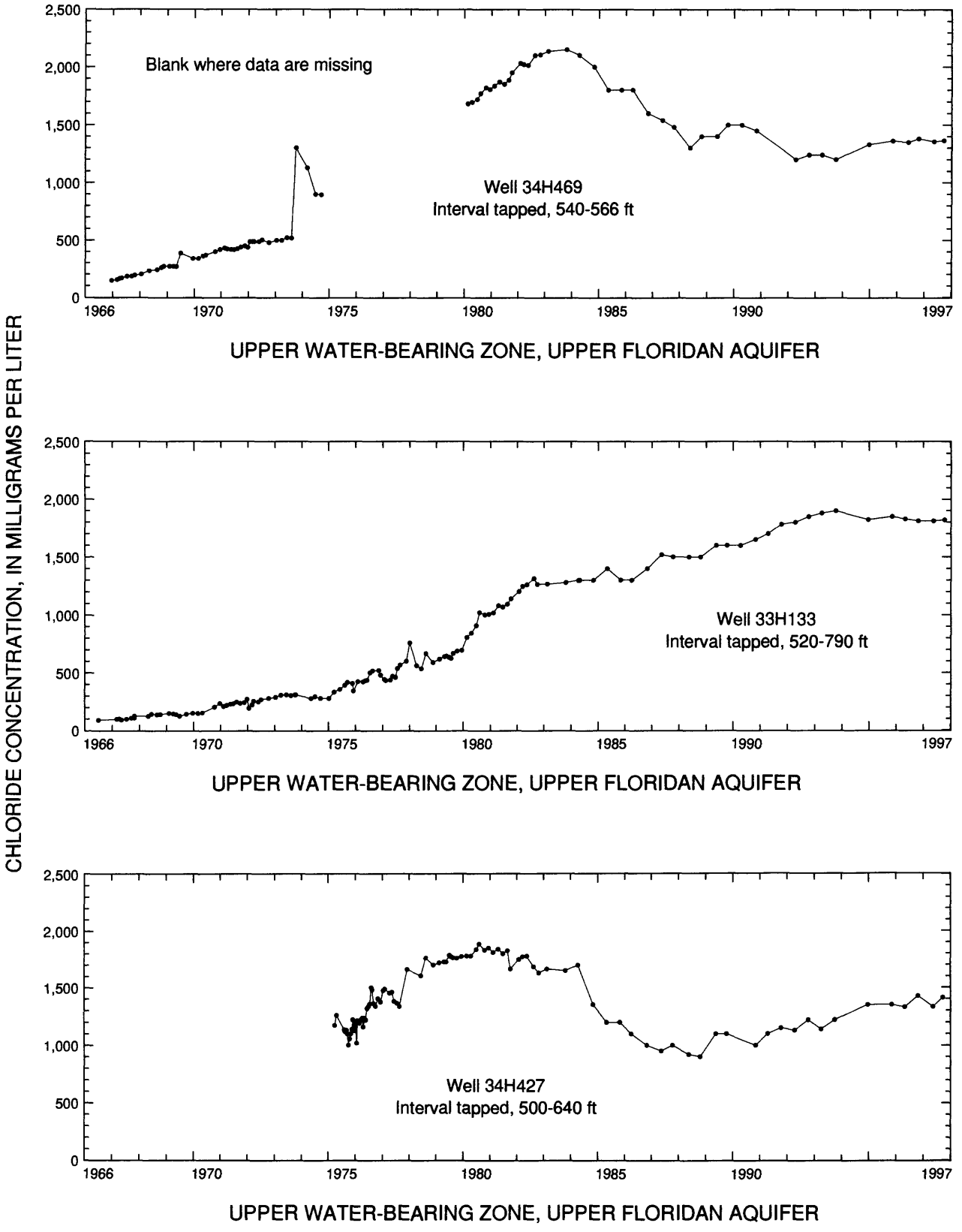


Figure 88. Chloride concentration in water from the Floridan aquifer system in the Brunswick area.

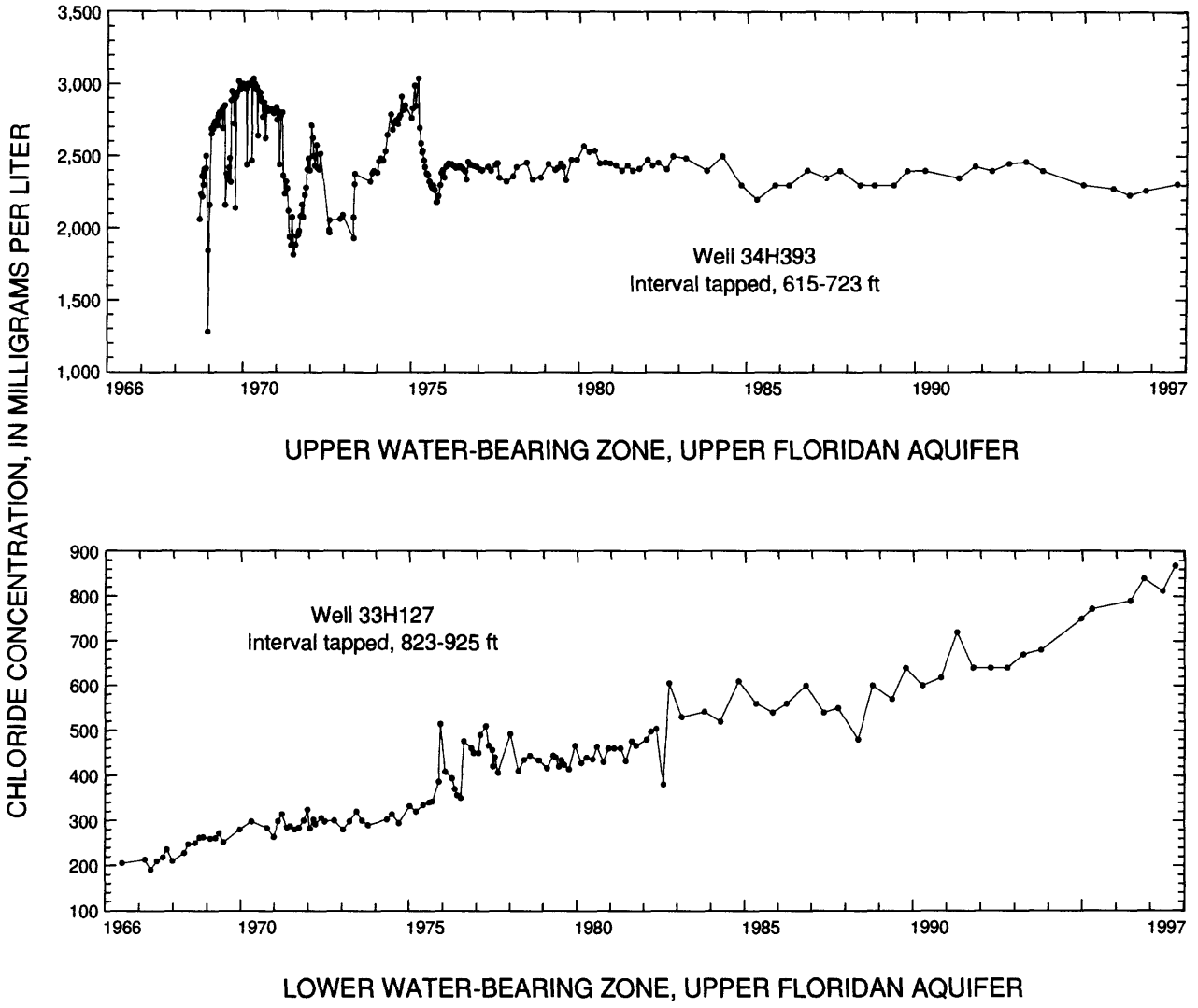


Figure 89. Chloride concentration in water from the Floridan aquifer system in the Brunswick area.

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