

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION



FLOOD OF MARCH 3, 1970, ON
OLD MANS CREEK,
JOHNSON COUNTY, IOWA

By

Harlan H. Schwob, Hydraulic Engineer
United States Geological Survey

Prepared in cooperation with the

IOWA STATE HIGHWAY COMMISSION

Open-file Report

70-1

Iowa City, Iowa
July 1970

U.S. GEOLOGICAL SURVEY
P.O. BOX 1230
IOWA CITY, IA 52244

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Flood of March 3, 1970, on Old Mans Creek,
Johnson County, Iowa

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The purpose of this report is to provide information on a large flood on an 18-mile reach at the lower end of Old Mans Creek in Johnson County, Iowa, (see figure 1). The flood resulted from a combination of rain and snowmelt with rainfall totals at surrounding points as shown in the following table:

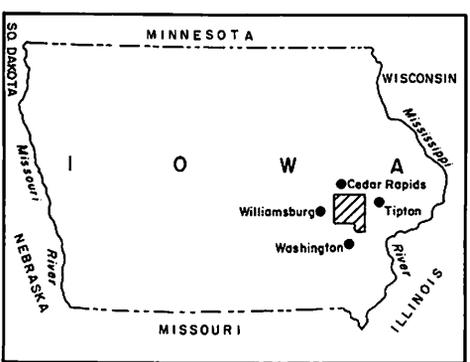
Rainfall reported in Climatological Data for Iowa (March Issue)

<u>Rain gage</u>	<u>Inches of precipitation for</u>	
	<u>March 2</u>	<u>March 3</u>
Williamsburg	(1)	2.80
Iowa City	1.32	.82
Cedar Rapids FAA Airport	1.21	1.22
Washington	(1)	1.10
Tipton	.50	1.33

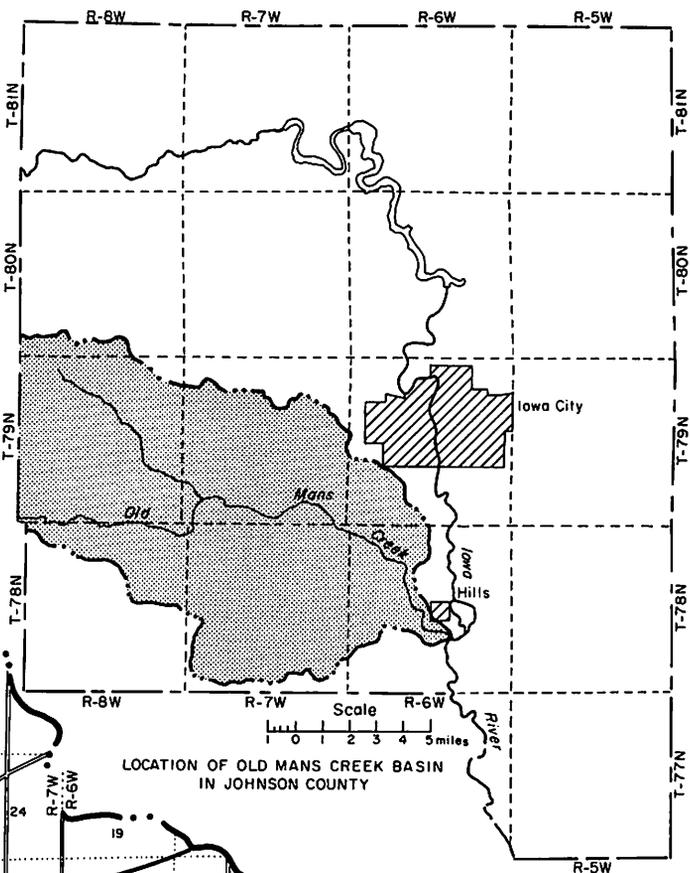
(1) Maximum day on March 3 -- Other dailies will be available in "Hourly Precipitation Data Iowa" by ESSA.

The resultant flood generally exceeded a 50-year flood and a considerable portion of the creek valley was flooded. Many roads were temporarily closed when overtopped by the flood water and some damage to road surface and bridge approaches was observed. Agricultural damages were probably small since the flood preceded the active cultivation season.

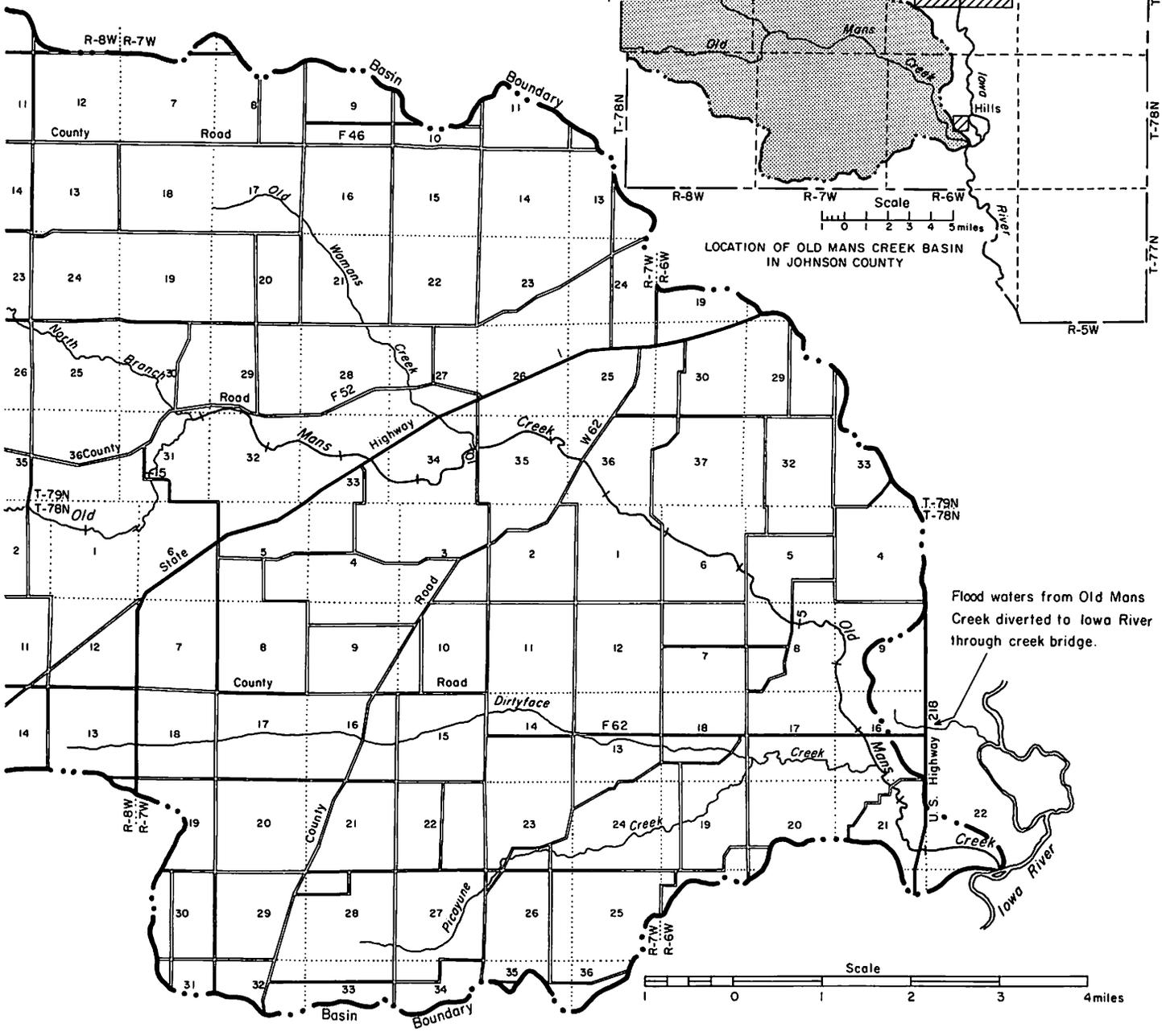
The flood data collected are shown in table 1. Low-water profile elevations obtained on April 28, 1970, are shown for the purpose of indicating the approximate range in water surface elevations along the stream. Sufficient information is furnished to enable the user to plot the profiles for the flood and low-water flow. The peak discharge information available at the gage and near the mouth is also indicated in the table. Descriptions and elevations of temporary bench marks established along the reach are in an appendix to this report.



LOCATION OF JOHNSON COUNTY AND SELECTED CITIES



LOCATION OF OLD MANS CREEK BASIN IN JOHNSON COUNTY



Flood waters from Old Mans Creek diverted to Iowa River through creek bridge.

Figure 1. Map of Old Mans Creek basin in Johnson County, Iowa.

Table 1. Data pertaining to Old Mans Creek at flood and low-water elevations

Mile	Drain area sq.mi.	Location		3-3-70 Flood elevation		3-3-70 Peak flow cfs	.4-28-70 Low-water		50-year flood cfs	Remarks
		Feature	Landline	^b Downst ft	^b Upst ft		^b Elw ft	Flow cfs		
0	248	Mouth	7806-27 NE	--	--	--	--	--	6,700	Mile 61.3 Iowa River
.73	247	C.R.I. & P. RR	7806-22 SW	--	--	--	--	--	6,700	
1.07	247	Hwy. 218 bridge	7806-21 SE	628.2	628.3	--	616.6	--	6,700	
2.22	246	County bridge	7806-21 NE	632.0	632.1	--	622.3	--	6,650	Road overtopped
2.62	246	Dirty Face Cr.	7806-16 SW	--	--	--	--	--	6,650	Below right bank tributary
	220								6,100	
2.97	219	County F62 bridge	7806-16 SW	634.6	635.2	^c 4,300	624.9	--	6,100	
5.04	212	County bridge	7806-8 NE	641.7	642.3	--	632.3	--	5,950	Road overtopped L. bank
5.91	209	County bridge	7806-5 SW	645.5	645.9	--	634.4	--	5,890	Road overtopped both banks
7.02	204	County bridge	7806-6 NW	649.2	649.6	--	638.4	--	5,800	Road overtopped L. bank
8.40	201	County W62 bridge	7907-36 SW	654.0	654.6	^d 7,400	642.3	93	5,750	Corps of Engineers wire-weight gage
9.93	194	County bridge	7907-35 NW	659.7	660.5	--	646.8	--	5,620	Road overtopped L. bank

Table 1. Data pertaining to Old Mans Creek at flood and low-water elevations.--Continued

Mile	Drain area sq.mi.	Location		3-3-70 Flood elevation ^b		3-3-70 Peak flow cfs	4-28-70 Low water ^b		50-year flood cfs	Remarks
		Feature	Landline	Downst ft	Upst ft		Elev ft	Flow cfs		
9.97	194	Old Woman Cr.	7907-34 NE	--	--	--	--	--	5,620	Below left bank tributary Above left bank tributary
	182								5,410	
11.60	180	Hwy. 1 bridge	7907-33 SE	665.6	666.6	--	653.2	--	5,390	
13.70	174	Abandoned bridge	7907-29 SW	673.4	673.8	--	661.8	--	5,300	
14.11	173	North Branch	7907-31 NE	--	--	--	--	--	5,260	Below left bank tributary Above left bank tributary
	137								4,720	
15.06	136	County bridge	7907-31 SW	677.9	677.9	--	667.4	--	4,700	Road overtopped both banks
17.56	130	County bridge	7808-2 NE	684.7	684.7	--	674.8	--	4,620	Road overtopped both banks

a - Landline location shown as index number; for example mouth at mile 0 is in the NE $\frac{1}{4}$, section 27, T.78 N., R.6 W., the index number is 7806-27 NE.

b - In feet above mean sea level, 1929 General Adjustment.

c - An additional 2,600 cfs were diverted upstream of bridge to creek bridge on Highway 218 and then down creek north of Hills to Iowa River.

d - About, from rating curve poorly defined at this elevation.

APPENDIX

The following temporary bench marks were established and elevations determined to provide vertical control for elevations of high-water marks. Levels consisted of a single run starting and ending at USC & GS and USGS (Topographic Branch) adjusted bench marks. Levels are of third order accuracy. An index number such as 7806-5 SW (1) is used to identify marks and the preceding number indicates a mark in the southwest quarter of section 5, Township 78 North, Range 6 West. The number in parentheses indicates the order of marks established in that quarter section:

- 7806-5 SW (1) (Old Mans Creek) - About 3.5 miles northwest of Hills, at county road bridge over Old Mans Creek, on top of right downstream steel caisson pier; chiseled arrow. Elev. 645.18
- 7806-6 NW (1) (Old Mans Creek) - About 4.5 miles northwest of Hills, at county road bridge over Old Mans Creek, on top of right downstream steel caisson pier; chiseled cross on bolt. Elev. 650.53
- 7806-6 NW (2) (Old Mans Creek) - (REFERENCE POINT) - About 4.5 miles northwest of Hills, at county road bridge over Old Mans Creek, on first steel vertical box girder from right downstream side of bridge; filed notch at handrail height. Elev. 654.89
- 7806-8 NE (1) (Old Mans Creek) - About 2.5 miles northwest of Hills, 500 feet northeast of county road bridge over Old Mans Creek, on top of southwest concrete base of power line tower; chiseled cross. Elev. 641.41
- 7806-8 NE (2) (Old Mans Creek) - (REFERENCE POINT) - About 2.5 miles northwest of Hills, at county road bridge over Old Mans Creek, on top of downstream tension member near center of bridge; chiseled arrow. Elev. 642.57
- 7806-16 NE (1) (Old Mans Creek) - About 0.6 mile north of Hills, at bridge on Highway 218, on top of right upstream wingwall; disk stamped 52-201. Elev. 636.49
- 7806-16 SW (1) (Old Mans Creek) - About 1 mile northwest of Hills, at blacktop county road bridge over Old Mans Creek, on top of curb at right downstream end of bridge; chiseled cross. Elev. 641.22
- 7806-16 SW (2) (Old Mans Creek) - (REFERENCE POINT) - About 1 mile northwest of Hills, at blacktop county road bridge over Old Mans Creek, on top of downstream handrail near center of bridge; chiseled arrow. Elev. 643.66
- 7806-21 NE (1) (Old Mans Creek) - About 0.5 mile west of Hills, at intersection of county road west and Highway 218, in southwest corner of intersection in power pole about 1 foot above ground; pole spike and collar. Elev. 634.99
- 7806-21 NE (2) (Old Mans Creek) - About 1 mile west of Hills at county road bridge over Old Mans Creek, on top of the left downstream steel caisson pier; chiseled + in top of bolt. Elev. 633.37
- 7806-21 NE (3) (Old Mans Creek) - (REFERENCE POINT) - About 1 mile west of Hills, at county road bridge over Old Mans Creek, on downstream steel tension member near center of bridge; chiseled arrow. Elev. 634.09
- 7806-21 SE (1) (Old Mans Creek) - About 1 mile southwest of Hills, at Highway 218 bridge over Old Mans Creek, on end of right upstream wingwall; chiseled cross. Elev. 633.10

- 7806-21 SE (2) (Old Mans Creek) - (REFERENCE POINT) - About 1 mile southwest of Hills, at Highway 218 bridge over Old Mans Creek, on top of downstream handrail near center of right span; chiseled arrow. Elev. 635.49
- 7808-2 NE (1) (Old Mans Creek) - About 1.25 miles southeast of Windham, at county road bridge over Old Mans Creek, on left upstream steel caisson pier; chiseled cross on rivet. Elev. 684.31
- 7808-2 NE (3) (Old Mans Creek) - (REFERENCE POINT) - About 1.25 miles southeast of Windham, at county road bridge over Old Mans Creek, on top of upper bridge girder downstream truss near center of bridge; chiseled arrow. Elev. 691.77
- 7808-12 NW (1) (Old Mans Creek) - One mile north of Williamstown, at southeast corner of "T" road south intersection, 20 feet south of old basement, on northwest corner of 3 x 3 foot abandoned concrete well curb; chiseled square. Elev. 708.39
- 7907-29 SE (1) (Old Mans Creek) - About 4 miles east of Windham, at culvert on county road near southeast corner of section 29, on north end of culvert headwall; top of bolt head. Elev. 676.56
- 7907-29 SW (1) (Old Mans Creek) - About 3 miles east of Windham, at abandoned bridge over Old Mans Creek, 300 feet south of county road, on left downstream steel caisson pier; chiseled cross on bolt. Elev. 672.91
- 7907-29 SW (2) (Old Mans Creek) - (REFERENCE POINT) - About 3 miles east of Windham, at abandoned bridge over Old Mans Creek, 300 feet south of county road, on downstream tension member near center of bridge; chiseled arrow. Elev. 673.33
- 7907-29 SW (3) (Old Mans Creek) - About 3 miles east of Windham, about 0.5 mile east of bridge over North Branch, at culvert on county road, on top of north headwall; top of bolt head. Elev. 675.41
- 7907-30 SE (1) (North Branch) - About 2.5 miles east of Windham, at county road bridge over North Branch Old Mans Creek, on top of right upstream wingwall post; brass plug. Elev. 680.56
- 7907-30 SE (2) (North Branch) - (REFERENCE POINT) - About 2.5 miles east of Windham, at county road bridge over North Branch Old Mans Creek, on top of downstream handrail near center of bridge; chiseled arrow. Elev. 680.67
- 7907-31 SW (1) (Old Mans Creek) - About 2 miles east of Windham, at county road bridge over Old Mans Creek, on top edge of left downstream steel caisson pier; chiseled arrow. Elev. 675.75
- 7907-31 NW (1) (Old Mans Creek) - About 2 miles east of Windham, at intersection county "T" road south, on north culvert headwall; top of bolt head. Elev. 680.17

- 7907-32 NE (1) (Old Mans Creek) - About 3.5 miles east of Windham, .25 mile east of "T" road north, near entrance to farm with barn and silo (without top), in power pole on south side of county road, about 1 foot above ground; pole spike and collar. Elev. 670.11
- 7907-33 SE (1) (Old Mans Creek) - About 5 miles east of Windham, at Highway 1 bridge over Old Mans Creek, on top of right upstream wingwall at curb level; chiseled square. Elev. 673.14
- 7907-33 SE (2) (Old Mans Creek) - (REFERENCE POINT) - About 5 miles east of Windham, at Highway 1 bridge over Old Mans Creek, on top of downstream handrail near center of bridge; chiseled arrow. Elev. 675.87
- 7907-34 NE (1) (Old Mans Creek) - About 7 miles northwest of Hills, at county road bridge over Old Mans Creek, on top of right upstream steel caisson pier; chiseled cross on rivet. Elev. 659.93
- 7907-35 NW (1) (Old Mans Creek) - (REFERENCE POINT) - About 7 miles northwest of Hills, at county road bridge over Old Mans Creek, on downstream tension member near center of bridge; chiseled arrow. Elev. 660.24
- 7907-36 NE (1) (Old Mans Creek) - About 5 miles southwest of Iowa City, .5 mile northeast of county road bridge over Old Mans Creek, at entrance to cemetery on west side of road, 10 feet south of concrete retaining wall and about 4 feet east of south gate post; standard USGS tablet stamped B1 1930. Elev. 731.585
- 7907-36 SW (1) (Old Mans Creek) - About 5.5 miles northwest of Hills, at county road bridge over Old Mans Creek, on top of right upstream wingwall; chiseled square. Elev. 659.88
- 7907-36 SW (2) (Old Mans Creek) - (REFERENCE POINT) - About 5.5 miles northwest of Hills, at county road bridge over Old Mans Creek, on top of downstream handrail near left end of bridge; two file marks. Elev. 662.61
- 7908-36 SW (1) (Old Mans Creek) - About 1 mile east of Windham, about 750 feet east of county road intersection, on north end of culvert headwall, top of bolt head. Elev. 695.86

