

## STATE OF TEXAS BOARD OF WATER ENGINEERS

and

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
DIVISION OF IRRIGATION AND WATER CONSERVATION

PROGRESS REPORT NO. 13

of

SILT LOAD OF TEXAS STREAMS

(1950 - 1951)

(The silt data contained in this report were obtained under a cooperative agreement between the Board of Water Engineers and U. S. Department of Agriculture, Soil Conservation Service, Division of Irrigation and Water Conservation.)

Austin, Texas August, 1952

#### ORGANIZATION

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UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
DIVISION OF IRRIGATION ENGINEERING AND WATER CONSERVATION

Cooperating in Studies on Silt of Texas Streams

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## $\underline{\mathbf{T}} \ \underline{\mathbf{A}} \ \underline{\mathbf{B}} \ \underline{\mathbf{L}} \ \underline{\mathbf{E}} \qquad \underline{\mathbf{O}} \ \underline{\mathbf{F}} \qquad \underline{\mathbf{C}} \ \underline{\mathbf{O}} \ \underline{\mathbf{N}} \ \underline{\mathbf{T}} \ \underline{\mathbf{E}} \ \underline{\mathbf{N}} \ \underline{\mathbf{T}} \ \underline{\mathbf{S}}$

	Page
INTRODUCTION	1
COOPERATION	2
SUSPENDED SILT LOAD DETERMINATIONS	
Brazos River Watershed	
Easterly Station (Navasota River)	3-4
South Bend Station	5-6
Possum Kingdom Dam Station	7-8
Richmond Station	9-10
Colorado River Watershed	
Llano Station (Llano River)	11-12
Johnson City Station (Pedernales River)	13-14
San Saba Station	15-16
Inks Dam Station	17-18
Buchanan Dam Station	19-20
Austin Station	21-22
Guadalupe River Watershed	
Spring Branch Station	23-24
Victoria Station	25-26

## $\underline{\underline{T}} \ \underline{\underline{A}} \ \underline{\underline{B}} \ \underline{\underline{L}} \ \underline{\underline{E}} \quad \underline{\underline{O}} \ \underline{\underline{F}} \quad \underline{\underline{C}} \ \underline{\underline{O}} \ \underline{\underline{N}} \ \underline{\underline{T}} \ \underline{\underline{E}} \ \underline{\underline{N}} \ \underline{\underline{T}} \ \underline{\underline{S}} \quad \text{(Cont'd)}$

			Page
Lavaca River Watershed			
Edna Station	•	D	27-28
Neches River Watershed			
Horger Station (Angelina River)	•	•	29-30
Rockland Station	•	•	31-32
Nueces River Watershed			
Cotulla Station	•	•	33-34
Three Rivers Station	٠	•	35-36
Corpus Christi Dam Station		•	37-38
Sabine River Watershed			
Logansport, La. Station	•	•	39-40
San Antonio River Watershed			
Goliad Station	•		41-42
San Jacinto River Watershed			
Huffman Station		•	43-44
Humble Station (West Fork San Jacinto River)	•	•	45-46
Trinity River Watershed			
Romayor Station	•	•	47-48
MMARY OF ALL TEXAS SILT STATIONS, ACTIVE AND DISCONTINUED		•	49-50

#### Progress Report No. 13 of THE SILT LOAD OF TEXAS STREAMS, 1950-1951

bу

Dean W. Bloodgood, Irrigation Engineer
Division of Irrigation Engineering and Water Conservation
Soil Conservation Service
U. S. Department of Agriculture

and

James E. Mortensen, Testing Engineer Texas Board of Water Engineers

#### INTRODUCTION

During the water year of October 1, 1950 to September 30, 1951, the silt load of Texas streams was the lowest of most previous years' records. The average annual silt load for 19 active stations located on 10 of the principal watersheds of Texas over record periods ranging from 9 to 27 years is 36,309 acre feet. This amount is exclusive of any silt by-passing Possum Kingdom, Buchanan, Inks, and Corpus Christi Dams. For the water year ending September 30, 1951, the silt load for the same number of stations was 5,648 acre feet, about 16 percent of normal. The normal annual discharge of most of the silt-carrying streams is 27,703,689 acre feet, while for the water year ending September 30, 1951, the total flow was 7,833,840 acre feet, which is about 28 percent of the normal flow. These subnormal conditions are due mostly to the continued drouth and lack of hard or torrential rains on the upper portions of the watersheds.

The silt load by-passing the four dams for the 1951 water year was 135 acre feet, which is 49 percent of the normal load of 277 acre feet. The amount of water released from the dams for the water year was 2,452,720 acre feet, 11 percent above the normal release of 2,318,142 acre feet. The large release of the stored water for this water year is due mostly to the increased rice acreage being irrigated in the lower portions of the Brazos and Colorado watersheds.

During the water year, the cooperative silt laboratory received 9,367 water samples from 23 stations for silt determinations. The number of water samples also included those received from the stations located at the four dams.

The thirteenth progress silt report is one of a series of such reports that has been published annually since 1939 through a cooperative agreement between the Texas Board of Water Engineers and the Division of Irrigation Engineering and Water Conservation, Soil Conservation Service, United States Department of Agriculture.

Some of the silt determinations are made possible through the cooperation of several agencies in Texas which are interested in the silt pollution of streams and reservoirs. These cooperating agencies are the Lower Colorado River Authority, Brazos River Conservation and Reclamation District, and the water departments of the Cities of Houston and Corpus Christi. The Surface Water Division, United States Geological Survey, has also offered helpful and congenial cooperation in furnishing river discharge data and other information.

### Brazos River Watershed at EASTERLY STATION ON NAVASOTA RIVER

for

Month	Discharge of Stream	Silt Load	d of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	ácft.	pct.
October	150	10	0	.005
November	460	70	0	.011
December	280	30	0	.008
1951				
January	380	30	0	.006
February	740	70	0	.007
March	1,630	870	ı	.039
April	1,240	330	0	.020
May	4,710	2,200	ı	.034
June	3,180	950	1	.022
July	60	20	0	.024
August	0	0	0	.000
September	4,080	3,190	2	.057
Totals	16,910	7,770	5	
U.S.G.S. yea	rly discharge in	n acre-feet -		- 16,910
Total silt f	or year in acre-	-feet		<b>-</b> 5
	silt per year p			005
Average perc	ent of silt by w	weight for year		034
Drainage are	a in square mile	es (net)	P 69 40 60 40 60	<del>-</del> 949

for

#### Brazos River Watershed

Stream: NAVASOTA
Station: EASTERLY (Samples were taken from bridge on U. S. Highway No. 79)

Water Year	Discharge of Stream	Silt Load	d of Stream	Average Percentage of Dry Silt by Weight
	acft.	tons	acft.	pet.
1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	199,750 84,820 592,670 556,120 617,980 441,190 99,160 105,970 256,050 16,910 2,970,620	142,600 59,600 889,340 607,980 513,050 193,110 79,980 89,010 137,000 7,770 2,719,440	94 39 584 400 337 127 53 58 88 5	.052 .052 .110 .080 .061 .032 .059 .062 .039

## For period of 9.748 years

Average discharge in acre-feet per year					304,741
Average acre-feet of silt per year	•	<b>E3</b>	•		183
Average acre-feet of silt per year per square mile					J
of contributing watershed	_	-	•	-	.192
Average tons of silt per year					278,974
Average percent of silt by weight					.067
Drainage area in square miles (net)	-	-	•	-	949

 $<sup>\</sup>frac{1}{2}$  Station was established January 1, 1942.

# Brazos River Watershed at SOUTH BEND STATION ON BRAZOS RIVER

Month	Discharge of Stream	Silt Los	nd of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	13,360	72,830	52	.400
November	2,240	810	1	.027
December	2,520	370	0	.011
1951				
January	2,270	140	0	. 005
February	2,940	1,970	1	.049
March	1,920	110	0	.004
April	1,480	100	0	.005
May	81,960	835,890	548	•749
June	126,900	1,139,350	747	. 660
July	19,200	73,150	48	.280
August	16,620	422,500	277	.187
September	11,930	122,220	80	•753
Totals	283,340	2,669,440	1,754	
U.S.G.S. yes	arly discharge	in acre-feet -		- 283,340
Total silt	for year in acr	e-feet		1,754
		per square mile		.142
Average per	cent of silt by	weight for year	? <b></b>	692
Drainage ar	ea in square mi	les (net)		- 12,360

for

#### Brazos River Watershed

Stream: BRAZOS
Station: SOUTH BEND
Sampler: O. W. Hill

(Samples taken from bridge on State Highway No. 67)

Water Year	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Weight
	acft.	tons	ac.∽ft.	pct.
1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	672,230 491,060 171,360 394,460 363,890 747,030 391,140 514,710 688,230 283,340	4,581,930 3,846,100 1,071,620 2,258,250 3,116,920 4,414,900 2,718,220 6,193,420 7,234,440 2,669,440 38,105,240	3,005 2,523 703 1,482 2,044 2,897 1,783 4,062 4,746 1,754	.501 .575 .459 .421 .629 .434 .510 .884 .772

## For period of 9.710 years

Average discharge in acre-feet per year		-	- 485,834
Average acre-feet of silt per year			<b>-</b> 2,575
Average acre-feet of silt per year per square mile			
of contributing watershed			208
Average tons of silt per year	-		-3,924,330
Average percent of silt by weight		-	- •593
Drainage area in square miles (net)			- 12,360

<sup>1/</sup> Station was established January 15, 1942.

## Brazos River Watershed at POSSUM KINGDOM DAM STATION ON BRAZOS RIVER

for

Month	Discharge of Stream	Silt Los	ad of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	88,070	8,320	5	.007
November	31,120	1,840	1	.004
December	43,870	1,920	1	.003
1951				
January	81,840	3,260	2	.003
February	42,880	2,960	2	.005
March	9,280	310	0	.002
April	42,530	1,510	1 .	.003
May	30,620	870	1	.002
June	78,150	2,580	2	.002
July	154,950	4,830	3	.002
August	127,360	9,280	6	.005
September	63,650	4,450	3	.005
otals	794,320	42,130	27	
Yearly discha	arge in acre-fe	et =		- 794,320
Cotal silt fo	or year in acre	-feet		<b>-</b> 27
	silt per year contributing w	per square mile		
lverage perce	ent of silt by	weight for year		004
rainage area	a in square mil	es (net)		

 $<sup>\</sup>underline{\mathbf{1}}/$  Discharge figures for this station obtained from Brazos River Conservation and Reclamation District

for

#### Brazos River Watershed

Stream: BRAZOS

Station: POSSUM KINGDOM DAM

(Samples taken in tailrace

109,063

.015

Sampler: J. P. Cochran and over spillway)

Water Year	Discharge of Stream	Silt Los	ad of Stream	Average Percentage of Dry Silt by Weight
<del> </del>	acft.	tons	acft.	pct.
1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	588,030 851,290 92,040 307,410 293,110 946,860 323,380 531,620 632,520 794,320	55,070 625,770 15,590 51,350 41,250 75,280 31,060 61,470 60,030 42,130	36 410 10 32 27 49 22 40 39 27	.007 .054 .012 .012 .010 .006 .007 .008 .007
TOTALS	5,360,580	1,059,000	692	
Average acre	e-feet of silt	feet per year -	9.710 years	- 552,068 - 71

Average tons of silt per year - - - Average percent of silt by weight - - Drainage area in square miles (net) -

of contributing watershed - -

<sup>1/2</sup> Station was established January 15, 1942.

## Brazos River Watershed at RICHMOND STATION ON BRAZOS RIVER

for

Month	Discharge of Stream	Silt Loa	d of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	açft.	pct.
October	149,100	39,970	26	.020
November	54,070	3,710	2	.005
December	52,900	7,310	5	.010
1951				
January	56,340	3,540	2	.005
February	66,900	5 <b>,</b> 650	4	.006
March	61,220	29,000	19	.035
April	74,640	129,650	85	.128
May	73,860	30,150	20	.030
June	248,000	778,600	511	.231
July	59,300	8,800	, 6	.011
August	51,910	5,650	4	.008
September	78,360	37,140	24	.035
Totals	1,026,600	1,079,170	708	
U.S.G.S. yea	rly discharge	in acre-feet -		- 1,026,600
Total silt f	or year in acr	e-feet		<b></b> 708
	silt per year contributing	per square mil watershed	Le 	020
Average perc	ent of silt by	weight for yea	ar	077
Drainage are	ea in square mi	les (net)		34,810

#### for

#### Brazos River Watershed

Stream: BRAZOS
Station: RICHMOND
Sampler: S. J. Butler

(Samples taken from bridge on U. S. Highway No. 90)

Discharge Average Water Year ofSilt Load of Stream Percentage of Stream Dry Silt by Weight ac.-ft. tons ac.-ft. pct. 1923-24 494,900 468 .106 714,220 1924-25 1,237,300 12,676,710 8,314 **.**753 1925**-**26 8,762,800 44,939,350 29,476 - 377 1926-27 5,562,600 34,377,320 21,739 .454 3,318,400 1927-28 28,163,890 18,472 •623 1928-29 32,284,200 6,000,000 21,174 · 395 38,686,330 1929-30 5,218,900 25,373 .545 1930-31 5,639,000 27,766,660 18,212 .362 1931-32 2-3/ 8,041,000 63,649,510 41,749 .582 1932-33 2,563,100 15,175,520 9,954 •435 1933-34 23,318,780 3,372,670 15,294 .508 7,334,480 1934-35 63,472,990 41,633 •636 1935-36 6,031,540 40,330,500 26,453 .491 1936-37 5,405,790 25,531,710 16,747 347 1937-38 7,203,600 55,656,280 36,544 •568 1938-39 1,966,110 14,742,470 9,668 .551 1939-40 3,161,120 23,679,220 15,531 •550 1940-41 16,124,370 97,306,510 63,824 .443 1941-42 8,522,910 71,490,110 46,891 .616 1942-43 3,255,310 11,426,360 7,496 .258 1943-44 7,626,500 46,735,630 30,654 .450 1944-45 9,804,730 57,254,020 .429 37,555 1945-46 35,484,230 7,399,590 23,275 .352 1946-47 21,011,530 6,345,770 13,783 .243 1947-48 1,950,620 3,950,720 2,591 .149 1948-49 3,362,850 .316 14,456,500 9,482 1949-50 4,186,500 9,543,800 6,259 .167 1950-51 1,026,600 1,079,170 708 .077 TOTALS 150,919,060 914,904,240 599,319

For	period	of	27	. 306	vears
101		-		. 100	A C GT D

Average discharge in acre-feet per year				
Average acre-feet of silt per year	-	-	6	21,948
Average acre-feet of silt per year per square mile				_
of contributing watershed				.631
Average tons of silt per year				
Average percent of silt by weight				.445
Drainage area in square miles (net)	-	_	-	34,810

<sup>1/</sup> Station was established at Rosenberg June 11, 1924.

<sup>2/</sup> Station was discontinued at Rosenberg April 12, 1932. 3/ Station was established at Richmond April 13, 1932.

# Colorado River Watershed at LLANO STATION ON LLANO RIVER

for

Month	Discharge of Stream	Silt Loa	d of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	4,600	240	0	.004
November	3,900	200	0	.004
December	4,360	240	0	.004
1951				
January	4,210	400	0	.007
February	4,430	480	0	.008
March	4,330	530	0	.009
April	3,870	430	0	.008
May	12,380	5,710	. 4	.034
June	5,330	470	0	.006
July	530	130	0	.018
August	2,580	520	0	.015
September	3,630	1,000	1	.020
Totals	54,150	10,350	7 *	
U.S.G.S. year	rly discharge in	n acre-feet -		54,150
Total silt fo	or year in acre-	-feet		7
	silt per year p		e 	.002
Average perce	ent of silt by w	weight for year	:	.014
Drainage area	in square mile	es (net)		4,000
* Includes mo	onths of small a	silt tons		

<sup>- 11 -</sup>

#### for

### Colorado River Watershed

Stream:

LLANO

Station: LLANO

Sampler: Mrs. Tracy M. Ward

(Samples were taken at U.S. Gaging Station  $\frac{1}{2}$  mile downstream from bridge on State Highway No. 16)

Water Year	Discharge of Stream	Silt Load	l of Stream	Average Percentage of Dry Silt by Weight
	acft.	tons	acft.	pct.
1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	65,990 235,470 196,070 156,920 142,740 141,550 327,420 187,600 113,980 54,150	252,700 381,560 120,450 90,120 249,740 28,750 1,471,400 82,260 14,300 10,350	166 250 79 60 164 18 965 53 8	.281 .119 .045 .042 .129 .015 .330 .032 .009
TOTALS	1,621,890	2,701,630	1,770	

Average discharge in acre-feet per year	176,927
Average acre-feet of silt per year	193
Average acre-feet of silt per year per square mile	
of contributing watershed	.048
Average tons of silt per year	294,713
Average percent of silt by weight	.122
Drainage area in square miles (net)	4,000
	·

<sup>1/</sup> Station was established August 1, 1942.

## Colorado River Watershed at JOHNSON CITY STATION ON PEDERNALES RIVER

for

Month	Discharge of Stream	Silt Load	of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	190	0	0	.000
November	230	20	0	.006
December	510	20	0	.003
1951				
January	510	10	0	.001
February	650	40	<b>0</b> .)	.005
March	1,940	5,850	4	.221
April	990	110	0	.008
May	2,620	900	1	.025
June	8,360	13,270	9	.117
July	40	0	0	.000
August	0	0	0	.000
September	1,420	3,190	2	.165
Totals	17,460	23,410	16	
U.S.G.S. year	rly discharge i	n acre-feet -		17,460
Total silt fo	or year in acre	-feet		16
	silt per year contributing w		·	017
Average perce	ent of silt by	weight for year	:	098
Drainage area	a in square mil	es (net)		947

for

#### Colorado River Watershed

Stream:	PEDERNALES	(Samples were taken from highway
Station:	JOHNSON CITY	bridge on U. S. Hwy. 281, about
Sampler:	John W. Grisham	$1\frac{1}{2}$ miles north of Johnson City)

Water Year	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Weight	
1/	acft.	tons	acft.	pct.	
1941-42	22,630	107,030	70	· 347	
1942-43	79,850	150,740	99	.139	
1943-44	167,700	724,550	476	•317	
1944-45	187,000	191,740	126	۰ 075	
1945-46	94,140	132,430	88	.103	
1946-47	128,460	107,670	71	.062	
1947-48	31,690	42,340	27	.098	
1948-49	37,660	54,560	35	.106	
1949-50	18,290	9,100	5	.037	
1950-51	17,460	23,410	<u> </u>	.098	
TOTALS	784,880	1,543,570	1,013		

## For period of 9.167 years

Average discharge in acre-feet per year	85,620
Average acre-feet of silt per year	111
Average acre-feet of silt per year per square mile	
of contributing watershed	.117
Average tons of silt per year	
Average percent of silt by weight	.144
Drainage area in square miles (net)	947

<sup>1/</sup> Station was established August 1, 1942.

## Colorado River Watershed at SAN SABA STATION ON COLORADO RIVER

for

Month	Discharge of Stream	Silt Lo	ad of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	8,090	1,030	1	.009
November	3,110	250	0	.006
December	3,590	190	0	.004
<u>1951</u> .				
January	3,900	270	0	.005
February	4,640	360	0	.006
March	4,140	280	0	.005
April	6,670	1,310	1	.O14
May	118,200	1,014,400	665	.630
June	219,500	833,650	547	.279
July	14,800	20,670	14	.103
August	30,290	255,710	168	.620
September	6,530	1,370	1	.015
Totals	423,460	2,129,490	1,397	
U.S.G.S. year	rly discharge	in acre-feet -		- 423,460
Total silt fo	or year in ac	re-feet		1,397
		r per square mi watershed		075
Average perce	ent of silt by	y weight for ye	ar	369
Drainage are	a in square m	iles (net)	. <b></b> .	- 18,700

#### for

#### Colorado River Watershed

Stream: COLORADO (Samples were taken from Red Station: NEAR SAN SABA Bluff bridge about midway be-Sampler: Robert A. Broyles tween San Saba and Lometa) 2/

<del></del>	Discharge			Average
Water Year	of Silt Load of Stream		Percentage of	
	Stream			Dry Silt
				by Wei <b>gh</b> t
,	acft.	tons	acft.	pct.
1929-30 1/	24,000	143,140	94	.439
1930-31	1,373,750	5,136,520	3,369	.275
1931-32	2,223,900	9,934,850	6,516	.328
1932-33	475,300	1,303,620	855	.201
1933-34	504,380	2,121,550	1,391	.309
1934-35	2,564,290	14,423,520	9,459	.413
1935-36	2,276,400	7,520,550	4,933	.243
1936-37	1,197,100	2,688,230	1,764	.165
1937-38	2,809,340	8,923,940	5,853	.233
1938-39	819,430	3,709,100	2,432	·333
1939-40	773,690	3,191,810	2,094	• 303
1940-41	2,052,980	8,613,430	5,650	.308
1941-42	1,285,920	4,571,140	2,998	.261
1942-43	475,090	703,520	461	.109
1943-44	592,790	2,129,300	1,397	.264
1944-45	870,370	2,655,490	1,743	.224
1945-46	416,390	1,511,040	992	.267
1946-47	517,540	2,588,150	1,696	. 367
1947-48	604,200	3,389,580	2,222	.412
1948-49	947,390	4,641,420	3,043	. 360
1949-50	367,430	1,709,240	1,120	. 342
1950-51	423,460	2,129,490	<u>1,397</u>	. 369
TOTALS	23,595,140	93,738,630	61,479	

#### For period of 21.055 years

Average discharge in acre-feet per year	1,120,643
Average acre-feet of silt per year	2,920
Average acre-feet of silt per year per square mile	
of contributing watershed	.156
Average tons of silt per year	
Average percent of silt by weight	.186
Drainage area in square miles (net)	18,700

<sup>1/</sup> Station was established September 11, 1930.
2/ Water samples were discontinued at old Red Bluff bridge and started one-half mile upstream at the new Red Bluff bridge on May 24, 1940.

### SILT-DATA

## Colorado River Watershed at INKS DAM STATION ON COLORADO RIVER

for

Water Year 1950-1951 (October 1, 1950 to September 30, 1951)

Month	Discharge of Stream	Silt	Load of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
O <b>c</b> tober	8,120	400	0	.004
November	23,080	1,040	1	.003
December	9,480	260	ý	.002
1951			}	
January	4,230	120		.002
February	25,910	700	) ,	.002
March	6,840	280	<b>'</b>	.003
April	23,890	860	1	.003
May	88,450	3,700	2	.003
June	113,800	3,490	2	٥٥٥2
July	99,000	5,430	4	.004
August	134,520	7,970	5	。004
September	80,810	2,200	2	.002
Totals	618,130	26,450	18	
Yearly disch	arge in acre-fe	et		618,130
Total silt f	or year in acre	e-feet	8 9 8 9 9 8	26,450
	silt per year contributing v			e e ese
Average perc	ent of silt by	weight for	year	003
l/ Dischar	a in square mil ge figures for colorado River	this stati	on obtained from	

<u>1</u>/

for

#### Colorado River Watershed

Stream: COLORADO Station: INKS DAM Sampler: Lloyd Myers

(Samples were taken from tailrace)

Water Year	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Weight
· · · · · · · · · · · · · · · · · · ·	acft.	tons	acft.	pct.
<u> </u>		•		
1941-42	285,200	41,270	27	。011
1942-43	662,460	67,090	44	。007
1943-44	768,040	127,980	84	.012
1944-45	751,950	157,540	104	.015
1945-46	678,460	134,030	88	.015
1946-47	498,980	27,870	20	.004
1947-48	580,500	56,700	38	.007
1948-49	582,660	30,170	18	.004
1949-50	319,340	14,240	9	.003
1950-51	618,130	26,450	<u> 18</u>	.003
TOTALS	5,745,720	683,340	450	

## For period of 9.167 years

Average discharge in acre-feet per year	626,783
Average acre-feet of silt per year	49
Average acre-feet of silt per year per square mile	
of contributing watershed	
Average tons of silt per year	74,543
Average percent of silt by weight	.009
Drainage area in square miles (net)	

 $<sup>\</sup>frac{1}{}$  Station was established August 1, 1942.

## Colorado River Watershed at BUCHANAN DAM STATION ON COLORADO RIVER

for

Water Year 1950-1951 (October 1, 1950 to September 30, 1951)

Month	Discharge of Stream	Silt Loa	d of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	8,120	300	0	.003
November	23,080	690	0	.002
December	9,470	260	0	.002
1951				
January	4,230	120	0	.002
February	25,910	1,020	1	.003
March	6,840	210	0	.002
April	23,890	1,050	1	.003
May	88,450	4,390	3	.004
June	113,790	6,830	4	.004
July	99,000	6,420	4	.005
August	134,520	7,230	5	.004
September	80,810	2,910	2	.003
Totals	618,110	31,430	20	
Yearly discha	arge in acre-fe	et		618,110
Total silt fo	or year in acre-	-feet		20
	silt per year p			
Average perce	ent of silt by	weight for year		.004
Drainage area	a in square mile	es (net)		

Discharge figures for this station obtained from Lower Colorado River Authority.

1/

for

#### Colorado River Watershed

Stream: COLORADO Station: BUCHANAN DAM Sampler: Lloyd Myers

(Samples taken at power house)

Water Year  1947-48 1948-49 1949-50 1950-51	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Weight
	acft.	tons	acft.	pct.
	576,440 563,730 319,340 618,110	46,530 35,300 16,910 31,430	30 24 13 20	.006 .005 .004 .004
TOTALS	2,077,620	130,170	87	

## For period of 4.000 years

Average discharge in acre-feet per year	519,405
Average acre-feet of silt per year	. 22
Average acre-feet of silt per year per square mile	
of contributing watershed	
Average tons of silt per year	32,543
Average percent of silt by weight	.005
Drainage area in square miles (net)	

<sup>1/</sup> Station was established October 1, 1947.

# Colorado River Watershed at AUSTIN STATION ON COLORADO RIVER

for

Month	Discharge of Stream	Silt Loa	d of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	35,410	1,800	1	. 004
November	41,490	3,450	2	.006
December	45,120	10,350	7	.017
1951				
January	50,790	2,750	2	.004
February	35,710	2,780	2	.006
March	14,470	480	0	.002
April	44,890	2,830	2	.005
May	107,600	7,530	5	.005
June	98,330	8,460	6	.006
July	120,900	7,790	5	.005
August	121,900	9,480	6	.006
September	47,950	2,700	2	.004
Totals	764,560	60,400	40	
U.S.G.S. year	rly discharge i	n acre-feet -		764,560
Total silt fo	or year in acre-	-feet		40
	silt per year p		e 	
Average perce	ent of silt by	weight for yea	r	006
Drainage are	a in square mile	es (net)		

for

#### Colorado River Watershed

Stream: COLORADO

Station: AUSTIN (Samples taken from Montopolis

Sampler: Mrs. G. L. Pliler Bridge)

Water Year	Discharge of Silt Load of Stream Stream		Average Percentage of Dry Silt by Weight	
	acft.	tons	acft.	pct.
1/ 1936-37 1937-38* 1938-39 2/ 1939-40* 1940-41 1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	48,040 3,609,570 986,630 1,334,120 3,869,250 986,440 1,787,770 1,392,380 1,750,770 1,554,930 1,523,070 957,750 878,750 914,530 764,560 22,358,560	1,830 8,881,220 735,150 906,750 979,240 121,570 328,050 186,590 444,540 256,770 234,770 122,060 104,440 71,700 60,400	1 5,826 481 596 642 80 215 122 292 170 155 82 67 49 40	.003 .181 .055 .050 .019 .009 .013 .010 .019 .012 .011 .009 .009

#### For period of 14.164 years

Average discharge in acre-feet per year	
Average acre-feet of silt per year	623
Average acre-feet of silt per year per square mile	
of contributing watershed	.024
Average tons of silt per year	948,537
Average percent of silt by weight	•044
Drainage area in square miles (net)	26,260

<sup>1/</sup> Station was established August 2, 1937, and samples taken from Congress Avenue bridge.

<sup>2/</sup> Samples taken from Montopolis Bridge.

<sup>\*</sup> Rehabilitation of the old Austin Dam (now termed Tom Miller Dam) was started August 1, 1938. This construction at times doubtless distorted the silt load of samples which were taken from  $1\frac{1}{2}$  to 4 miles downstream therefrom. Rehabilitation was completed and the impounding of water was begun on January 7, 1940.

## Guadalupe River Watershed at SPRING BRANCH STATION ON GUADALUPE RIVER

Month	Discharge of Stream	Silt Load	i of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	2,010	190	0	.007
November	2,140	160	0	.005
December	2,960	160	0	.004
1951				
January	2,950	150	0	.004
February	2,980	190	0	، 005
March	5,070	900	1	.013
April	3,930	520	0	.010
May	11,170	10,250	7	.067
June	7,090	2,220	1	.023
July	820	90	0	.008
August	60	0	0	.000
September	50	0	0	. öoo
Totals	41,230	14,830	9	•
U.S.G.S. year	ly discharge in	acre-feet -		- 41,230
Total silt fo	r year in acre-	·feet	,	- 9
	silt per year p			006
Average perce	nt of silt by w	eight for year		026
Drainage area	. in square mile	es (net) -		- 1,432

for

#### Guadalupe River Watershed

Stream: **GUADALUPE** Station: SPRING BRANCH Sampler: Alfred Beierle (Samples taken 4 miles southeast of Spring Branch from bridge on old Highway No. 46)

Water Year	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Weight
	acft.	tons	acft.	pct.
1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	167,150 145,610 272,850 304,860 185,080 307,960 59,460 119,610 63,680 41,230	164,150 79,630 401,650 190,830 148,700 128,040 60,110 50,240 34,430 14,830	108 52 262 126 96 84 38 33 20	.072 .040 .108 .046 .059 .031 .074 .031
TOTALS	1,667,490	1,272,610	828	

## For period of 9.748 years

Average discharge in acre-feet per year	171,060
Average acre-feet of silt per year	85
Average acre-feet of silt per year per square mile	
of contributing watershed	.059
Average tons of silt per year	130,551
Average percent of silt by weight	.056
Drainage area in square miles (net)	1,432

 $<sup>\</sup>frac{1}{2}$  Station was established January 1, 1942.

## Guadalupe River Watershed at VICTORIA STATION ON GUADALUPE RIVER

for

Month	Discharge of Stream	Silt Load	d of Stream	Percentage of Dry Silt by Weight		
1950	acft.	tons	acft.	pct.		
October	21,800	1,700	1	.006		
November	21,040	1,960	1	.007		
December	25,120	1,590	1	.005		
1951						
January	24,170	1,390	1	.004		
February	23,530	1,380	.1	.004		
March	26,280	1,160	1	.003		
April	27,090	1,480	1	.004		
May	34,690	4,580	3	.010		
June	135,600	193,980	127	.105		
July	19,060	2,260	1	.009		
August	11,430	680	1	.004		
September	22,340	2,970	2	.010		
Totals	392,150	215,130	141			
U.S.G.S. yea	rly discharge i	n acre-feet -		392,150		
Total silt f	or year in acre	-feet		215,130		
	silt per year contributing w	per square mile atershed		027		
Average percent of silt by weight for year040						
Drainage are	a in square mil	es (net)		5,311		

for

### Guadalupe River Watershed

Stream: GUADALUPE

Station: VICTORIA

Sampler: A. E. Anders

(Samples taken from bridge on

U. S. Highway No. 59)

Water Year	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Weight
	acft.	tons	acft.	pct.
1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	38,430 1,319,520 1,595,300 509,960 871,660 767,750 392,150	19,480 949,130 777,690 169,560 607,450 430,030 215,130	13 624 511 111 398 282 141	.037 .053 .036 .024 .051 .041
TOTALS	5,494,770	3,168,470	2,080	

## For period of 6.083 years

Average discharge in acre-feet per year	903,299
Average acre-feet of silt per year	342
Average acre-feèt of silt per year per square mile	
of contributing watershed	.064
Average tons of silt per year	520,873
Average percent of silt by weight	.042
Drainage area in square miles (net)	5,311

 $<sup>\</sup>frac{1}{2}$  Station was established September 1, 1945. Record for one month.

#### 

for

Month	Discharge of Stream	Silt L	oad of Stream	Percentage of Dry Silt by Weight	
1950	acft.	tons	acft.	pct.	
October	320	50	0	.011	
November	340	20	0	.004	
December	670	40	0	.004	
1951					
January	910	50	0	. 004	
February	1,000	40	0	.003	
March	1,200	110	0	.007	
April	940	650	0	.051	
May	700	90	0	.009	
June	19,170	37,580	25	.144	
July	420	40	0	.007	
August	120	10	0	.006	
September	8,420	15,550	10	.136	
Totals	34,210	54,230	35		
U.S.G.S. year	rly discharge i	in acre-feet -		34,210	
Total silt for year in acre-feet 35					
	silt per year contributing v	per square mil watershed	e 	039	
Average percent of silt by weight for year 116					
Drainage area	a in square mil	Les (net)		887	

#### for

### Lavaca River Watershed

(Samples taken from bridge on U.S. Highway No. 59 between Victoria and Edna) Stream: LAVACA Station: EDNA

Sampler: Mrs. Ida Berryhill

Water Year	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Weight	
	acft.	tons	acft.	pct.	
1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	980 266,330 250,340 114,240 105,870 90,950 34,210	570 327,240 192,850 98,200 205,400 119,490 54,230	0 215 126 66 134 78 <u>35</u>	.090 .057 .063 .143 .096	
TOTALS	862,920	997,980	654		

## For period of 6.083 years

Average discharge in acre-feet per year 141,858	}
Average acre-feet of silt per year 108	
Average acre-feet of silt per year per square mile	
of contributing watershed122	2
Average tons of silt per year 164,060	)
Average percent of silt by weight085	5
Drainage area in square miles (net) 887	1

 $<sup>\</sup>frac{1}{S}$ tation established September 1, 1945.

### Neches River Watershed at HORGER STATION ON ANGELINA RIVER

Month	Discharge of Stream	Silt Load	l of Stream		rcentage of Dry Silt by Weight
1950	acft.	tons	acft.		pct.
October	22,580	1,490	1		.005
November	27,290	3,250	2		.009
December	37,610	4,870	3		.010
1951					
January	77,020	24,300	16		، 023
February	106,900	16,050	11		.011
March	160,300	26,260	17		.012
April	166,300	27,170	18		.012
May	53,990	9,560	6		.013
June	31,680	4,310	3		.010
July	9,570	1,300	1		.010
August	2,880	310	0		.008
September	4,840	590	0		.009
Totals	700,960	119,460	78		
U.S.G.S. year	rly discharge i	n acre-feet -		<b>-</b>	700,960
Total silt for year in acre-feet 78					
	silt per year contributing w		e 		.023
Average percent of silt by weight for year013					
Drainage area	a in square mil	es (net)			3,435

#### for

#### Neches River Watershed

Stream: ANGELINA Station: HORGER Sampler: D. W. Moye (Samples taken from bridge on State Highway No. 63 between Zavalla and Jasper)

Water Year	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Weight
1/	acft.	tons	acft.	pct.
1944-45 1945-46 1946-47 1947-48 1948-49 1949-50	19,470 3,869,300 3,200,750 1,619,040 1,544,530 3,690,020	11,020 1,826,050 393,530 227,070 276,680 481,440	7 1,198 259 149 180 317	.042 .035 .009 .010 .013
1950-51 TOTALS	700,960 14,644,070	119,460 3,335,250	<u>78</u> 2,188	.017

## For period of 6.083 years

Average discharge in acre-feet per year	2,407,376
Average acre-feet of silt per year	360
Average acre-feet of silt per year per square mile	
of contributing watershed	. 105
Average tons of silt per year	548,290
Average percent of silt by weight	.017
Drainage area in square miles (net)	3,435

<sup>1/</sup> Station was established September 1, 1945.

## Neches River Watershed at ROCKLAND STATION ON NECHES RIVER

Month	Discharge of Stream	Silt Load	l of Stream	Percentage of Dry Silt by Weight
1950	ac.\ft.	tons	acft.	pct.
October	11,480	760	ı	.005
November	11,700	810	ı	۰, 005
December	18,890	1,170	1	.005
1951				
January	29,740	2,370	2	۰ 006
February	46,600	4,640	3	. 007
March	94,600	7,750	5	, 006
April	98,550	7,710	5	.006
May	38,330	8,260	5	.016
June	24,180	3,680	2	.011
July	12,950	1,510	1	.009
August	2,520	260	0	.008
September	4,500	530	0	.009
Totals	394,040	39,450	26	
U.S.G.S. year	rly discharge i	n acre-feet -		- 394,040
Total silt fo	or year in acre	-feet		- 39,450
	silt per year contributing w		e 	007
Average perce	ent of silt by	weight for year	r	007
Drainage area	a in square mil	es (net)		- 3,539

for

### Neches River Watershed

(Samples were taken from bridge on U. S. Highway 69 between Woodville and Lufkin) Stream: NECHES Station: ROCKLAND

Sampler: George W. Jones

Water Year	Discharge of Stream	Silt L	oad of Stream	Average Percentage of Dry Silt by Weight
	acft.	tons	acft.	pct.
1/				
1929-30	10,620	290	0	.002
1930-31	1,490,250	229,220	151	.011
1931 <b>-</b> 32	2,560,930	193,940	128	.006
1932 <b>-</b> 33	1,395,940	144,700	95	.008
1933-34	1,552,630	174,070	112	.008
1934-35	2,601,910	297,100	194	.008
1935-36	1,040,600	140,280	91	.010
1936-37	928,420	110,180	71	•009
1937-38	1,400,070	225,940	147	.012
1938-39	854,380	140,590	91	.012
1939-40	1,097,590	227,590	149	.015
1940-41	3,578,370	586,140	384	.012
1941-42	2,522,390	550,920	361	.016
1942-43	748,520	316,090	207	.031
1943-44	3,230,410	1,865,580	1,223	.042
1944-45	3,396,060	1,967,220	1,290	.043
1945-46	3,534,920	1,285,240	845	.027
1946-47	3,255,520	379,210	249	•009
1947-48	1,250,360	118,760	77	.007
1948-49	1,172,870	183,820	119	.012
1949-50	3,824,440	330,240	216	•009
1950-51	<u>394,040</u>	39,450	<u>26</u>	.007
TOTALS	41,841,240	9,506,570	6,226	

### For period of 21.148 years

Average discharge in acre-feet per year	1,978,496
Average acre-feet of silt per year	294
Average acre-feet of silt per year per square mile	
of contributing watershed	.083
Average tons of silt per year	449,526
Average percent of silt by weight	.017
Drainage area in square miles (net)	3,539

<sup>1/</sup> Station was established August 8, 1930.

### Nueces River Watershed at COTULLA STATION ON NUECES RIVER

for

Month	Discharge of Stream	Silt Load	of Stream	Percentage of Dry Silt by Weight	
1950	acft.	tons	acft.	pct.	
October	1,990	370	0	.014	
November	0	0	0	٥٥٥ ،	
December	0	0	0	. 000	
1951					
January	0	0	0	000 ،	
February	0	0	0	.000	
March	0	0	0	٠,000	
April	0	0	0	000	
May	25,290	9,090	6	.026	
June	3,770	550	1	<sub>0</sub> 011	
July	0	0	0	.000	
August	0	0	0	,000	
September	0	0	0	.000	
Totals	31,050	10,010	7		
U.S.G.S. yea	rly discharge i	n acre-feet -		31,050	
Total silt fo	or year in acre	e-feet		7	
	silt per year contributing w	per square mile atershed	: 	001	
Average perce	ent of silt by	weight for year		024	
Drainage area	a in square mil	es (net)		5,260	

### for

### Nueces River Watershed

NUECES Stream:

Station: COTULLA Sampler: J. G. Jennings (Samples taken from highway bridge in Cotulla)

Water Year	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Wei <b>gh</b> t	
	acft.	tons	acft.	pct.	
1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	141,380 64,240 482,520 82,440 347,610 92,610 72,900 277,520 57,760 31,050	64,130 33,270 367,860 65,460 284,210 16,550 29,100 115,640 18,550 10,010	42 22 241 43 186 11 19 75 12	.033 .038 .056 .058 .060 .013 .029 .031 .024	
TOTALS	1,650,030	1,004,780	658		

Average discharge in acre-feet per year	
Average acre-feet of silt per year	68
Average acre-feet of silt per year per square mile	
of contributing watershed	.013
Average tons of silt per year	103,076
Average percent of silt by weight	۰045
Drainage area in square miles (net)	5,260
•	

<sup>1/</sup> Station was established January 1, 1942.

### Nueces River Watershed at THREE RIVERS STATION ON NUECES RIVER

for

Month	Discharge of Stream	Silt Loa	d of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	17,270	8,970	6	.038
November	0	0	0	.000
December	40	0	0	.000
1951				
January	240	30	0	.018
February	320	40	0	٥٥٥ ،
March	1,160	240	0	.015
April	580	50	0	。006
May	92,980	192,710	126	.152
June	139,700	210,020	138	.110
July	580	50	0	.006
August	270	40	0	.011
September	153,200	195,610	128	. 094
Totals	406,340	607,760	398	
U.S.G.S. year	ly discharge in	n acre-feet -		406,340
Total silt fo	or year in acre	-feet		398
	silt per year p		e 	026
Average perce	ent of silt by	weight for yea	r	110
Drainage area	in square mile	es (net)		15,600

for

### Nueces River Watershed

Stream: NUECES

Station: NEAR THREE RIVERS

Sampler: Carl Franze

(Samples were taken 2 miles south

of Three Rivers from railroad bridge, except at extreme low stage when samples were taken

at low dam)

Water Year	Discharge of Stream	Silt Load o		Average Percentage of Dry Silt by Weight
7 /	acft.	tons	acft.	pct.
1927-28	318,930	617,920	405	.142
1928-29	741,300	1,303,600	855	.129
1929-30	596,510	721,440	473	.089
1930-31	455,880	443,420	291	.071
1931 <b>-32</b>	1,006,200	581,880	381	.042
1932-33	287,120	275,050	179	.070
1933-34	253,800	668 <b>,3</b> 20	438	.193
1934-35	2,547,150	2,383,630	1,565	. 069
1935-36	768,200	752,320	494	.072
1936-37	318,050	142,270	94	.033
1937-38	479,730	771,540	506	.118
1938-39	306,600	450,960	297	.108
1939-40	840,190	1,035,600	679	.091
1940-41	1,300,860	1,635,320	1,073	.092
1941-42	1,107,790	987,340	648	.065
1942-43	260,470	323,990	213	.091
1943-44	700,090	668,660	439	.070
1944-45	297,070	590,010	387	.146
1945-46	927,400	1,134,770	744	.090
1946-47	810,070	578,310	379	.052
1947-48	128,330	253,400	164	.145
1948-49	780,920	765,590	500	.072
1949-50	266,300	385,840	253	.106
1950-51	406,340	607,760	<u>398</u>	.110
TOTALS	15,905,300	18,078,940	11,855	
		For period of 2	+.000 years	
Average acre-	harge in acre-fe -feet of silt pe -feet of silt pe		 	- 662,721 - 494
_	ontributing wate			032
	of silt per year			- 753,289
	ent of silt by			084
~ -	a in square mile			- 15,600
_	<del>-</del>			

<sup>1/</sup> Station was established October 1, 1927.

### Nueces River Watershed at CORPUS CHRISTI DAM STATION ON NUECES RIVER

for

Water Year 1950-1951 (October 1, 1950 to September 30, 1951)

Month	Discharge of Stream	Silt Load	l of Stream	Percentage of Dry Silt by Weight	
1950	acft.	tons	acft.	pct.	
October	13,290	570	0	.003	
November	3,550	310	0	.006	
December	2,930	160	О	.004	
1951					
January	2,610	200	0	.006	
February	2,500	230	0	.007	
March	2,620	200	0	۰ 006	
April	2,860	150	0	.004	
May	59,640	8,970	7	.011	
June	137,900	33,210	22	.018	
July	4,120	510	0	.009	
August	4,140	450	0	.008	
September	186,000	61,780	41	.024	
Totals	422,160	106,740	70		
U.S.G.S. year	rly discharge in	acre-feet -	<b></b>	- 422,160	
Total silt fo	or year in acre-	-feet		- 70	
	silt per year p	-			
Average perce	ent of silt by w	weight for year		019	
Drainage area	a in square mile	es (net)			

### for

### Nueces River Watershed

Stream: NUECES

Station: CORPUS CHRISTI DAM

Sampler: Eddie Wright

(Samples taken below and adjacent to outlet gates)

Water Year	Discharge of Stream	Silt Lo	ad of Stream	Average Percentage of Dry Silt by Weight
	acft.	tons	acft.	pct.
1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	1,202,820 249,640 740,310 273,820 936,910 921,510 107,320 887,240 246,370 422,160	546,500 44,790 323,550 125,070 350,430 244,730 15,170 212,770 29,160 106,740 1,998,910	358 29 212 81 231 160 8 137 18 70	.033 .013 .032 .034 .027 .020 .010 .018 .009
Average acre-	arge in acre-f feet of silt p feet of silt p ntributing wat of silt per ye	er year er year per squ ershed		619,886 135  206,927

<sup>1/</sup> Station was established February 2, 1942.

# Sabine River Watershed at LOGANSPORT STATION ON SABINE RIVER

for

Month	Discharge of Stream	Silt Load	l of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	32,420	5,720	4	.013
November	32,140	4,120	3	.009
December	30,420	3,120	2	.008
1951		•		
January	94,400	12,220	8	.010
February	237,600	43,300	28	.013
March ·	236,600	61,570	40	.019
April	120,300	23,560	15	.014
May	74,760	13,750	9	.014
June	114,900	37,000	24	.024
July	41,700	9,560	6	.017
August	6,450	860	1	.010
September	11,470	2,640	2	.017
Totals	1,033,160	217,420	142	
U.S.G.S. yes	rly discharge in	acre-feet -		1,033,160
Total silt f	or year in acre-	feet		142
	silt per year p contributing wa			029
Average perc	ent of silt by w	weight for year		015
Drainage are	ea in square mile	es (net)		4,858

for

### Sabine River Watershed

Stream: SABINE

Station: LOGANSPORT, LA. Sampler: R. E. Davenport (Samples were taken from U. S. Highway 84 bridge in downtown

Logansport, La.)

Water Year	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Weight	
- /	acft.	tons	acft.	pct.	
1/ 1932-33 1933-34 2/ 1934-35 3/ 1935-36 1936-37 1937-38 1938-39 1939-40 1940-41 1941-42 1942-43 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51 TOTALS	2,545,700 69,200 13,910 841,410 1,689,660 3,155,000 1,325,580 1,302,990 4,876,180 3,817,160 1,716,620 4,193,070 5,996,730 5,137,000 3,318,320 2,820,560 1,882,220 4,225,130 1,033,160	503,740 5,780 400 137,020 270,430 537,990 291,500 458,990 825,330 1,439,880 999,370 3,002,050 4,502,820 2,650,320 553,900 452,390 391,520 934,380 217,420	330 4 0 89 176 353 190 301 541 944 655 1,969 2,953 1,738 363 298 255 610 142 11,911	.015 .006 .002 .012 .013 .016 .026 .012 .028 .043 .053 .055 .038 .012 .012 .012	

### For period of 17.156 years

Average discharge in acre-feet per year	-	2,912,077
Average acre-feet of silt per year	_	694
Average acre-feet of silt per year per square mile		
of contributing watershed	-	.143
Average tons of silt per year	-	1,059,410
Average percent of silt by weight	en	.027
Drainage area in square miles (net)	-	4,858

<sup>1/</sup> Station was established December 1, 1932. 2/ Station was discontinued December 27, 1933. 3/ Station was re-established September 1, 1935.

## San Antonio River Watershed at GOLIAD STATION ON SAN ANTONIO RIVER

Month	Discharge of Stream	Silt Load	l of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	8,070	810	1	。007
November	7,520	930	1	٠009
December	8,110	1,310	1	.012
1951				
January	7,660	1,070	1	.010
February	11,030	3,230	2	.022
March	10,730	2,410	2	.016
April	11,610	4,370	3	.028
May	30,340	90,670	59	.220
June	66,210	194,780	128	.216
July	7,470	1,290	1	.013
August	5,540	. 550	0	.007
September	46,980	93,130	61	.146
Totals	221,270	394,550	260	
U.S.G.S. yea	rly discharge i	n acre-feet -	<b>.</b>	- 221,270
Total silt fo	or year in acre	-feet	a	- 260
	silt per year contributing w			066
Avera <b>g</b> e perc	ent of silt by	weight for year		131
Drainage are	a in square mil	es (net)		- 3,918

for

### San Antonio River Watershed

Stream: SAN ANTONIO

Station: GOLIAD
Sampler: Polo Perez

(Samples were taken near Goliad from bridge on State Hwy. No. 29)

.111

.109

3,918

660,822

Water Year	Discharge of Stream	Silt Load	l of Stream	Average Percentage of Dry Silt by Weight
- /	acft.	tons	acft.	pct.
1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	699,580 453,180 365,060 352,460 663,080 699,560 226,510 403,390 263,690 221,270	848,340 581,740 725,630 567,440 1,387,180 719,770 237,020 669,460 310,560 394,550	556 382 475 371 910 472 155 440 203 260	.089 .094 .146 .118 .154 .076 .077 .122
TOTALS	4,347,780	6,441,690	4,224	
Average acre	charge in acre-fe e-feet of silt pe e-feet of silt pe	r year		- 446,018 - 433

1/	Station	was	established	January	1.	1942.
=			05 005 = = 5110 0	January	-,	エノュー・

Average percent of silt by weight - - - -

Average tons of silt per year - - -

Drainage area in square miles (net) -

of contributing watershed - - - -

# San Jacinto River Watershed at HUFFMAN STATION ON SAN JACINTO RIVER

for

Month	Discharge of Stream	Silt Load	of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	9,870	1,250	1	, 009
November	7,920	690	0	.006
December	9,290	410	0	. 003
1951				
January	13,710	2,360	2	,013
February	16,440	2,100	1	.009
March	40,210	11,660	8	.021
April	25,210	6,470	4	.019
May	9,990	1,760	1	.013
June	9,870	3,190	2	· 05/t
July	5,570	1,100	1	.014
August	4,060	670	0	.012
September	19,100	10,040	7	.039
Totals	171,240	41,700	27	
U.S.G.S. yea	rly discharge i	in acre-feet -	m 7 6 8 =	171,240
Total silt f	or year in acre	e∝feet		- ~ 27
		per square mile vatershed		010
Average perc	ent of silt by	weight for year		018
Drainage are	a in square mil	es (net)		2,791

for

### San Jacinto River Watershed

Stream: SAN JACINTO

Station: HUFFMAN (Samples were taken at Sheldon Sampler: Phil Baker Scott Pumping Plant, City of Houston)

Water Year	Discharge of Stream	Silt Load of Stream		Average Percentage of Dry Silt by Weight
	acft.	tons	acft.	pct.
1944-45 <u>1</u> / 1945-46 1946-47 1947-48 1948-49 1949-50	221,940 2,246,700 2,466,540 499,740 937,040 2,698,180 171,240	163,730 1,345,020 2,096,730 108,300 374,450 938,770 41,700	107 881 1,377 70 246 614 27	.054 .044 .062 .016 .029 .026 .018
TOTALS	9,241,380	5,068,700	3,322	

### For period of 6.083 years

Average discharge in acre-feet per year		-	-	1,519,214
Average acre-feet of silt per year				546
Average acre-feet of silt per year per square mile				
of contributing watershed	-	-	6	.196
Average tons of silt per year				833,257
Average percent of silt by weight	-	-	0	.040
Drainage area in square miles (net)	-	-	-	2,791

<sup>1/</sup> Station was established September 1, 1945.

# San Jacinto River Watershed at HUMBLE STATION ON SAN JACINTO RIVER

for

Month	Discharge of Stream	Silt Load	l of Stream	Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	5,680	650	0	.008
November	3,950	350	0	.006
December	4,300	350	0	.006
1951				
January	6,790	740	1	.008
February	10,440	1,160	1	.008
March	20,520	9,590	6	.034
April	15,140	5,340	4	.026
May	4,750	1,590	1	.025
June	4,800	1,740	1	.027
July	2,580	660	0	.019
August	1,560	320	0	.015
September	13,210	5,560	4	.031
lotals	93,720	28,050	18	
U.S.G.S. year	ly discharge i	n acre-feet -	·	93,720
Total silt fo	r year in acre	-feet		<b></b> 18
	silt per year contributing w	per square mile atershed	e	010
Average perce	nt of silt by	weight for year	r	022
Drainage area	. in square mil	es (net)		1,811

### San Jacinto River Watershed

Stream: WEST FORK OF SAN JACINTO (Samples were taken from

Station: NEAR HUMBLE highway bridge about 2 miles

Sampler: L. C. Clark north of Humble)

Water Year	Discharge of Silt Load of Stream Stream		Average Percentage of Dry Silt by Weight		
	acft.	tons	acft.	pct.	
1932-33 1/ 1933-34 2/ 1936-37 3/ 1937-38 1938-39 1939-40 1940-41 1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51 TOTALS	253,210 7,450 12,450 491,940 319,500 282,680 2,566,090 909,180 545,760 881,200 1,577,380 1,320,330 1,320,330 1,325,000 284,340 502,390 502,370 93,720	144,800 520 1,370 150,650 120,660 162,070 896,050 373,670 290,820 660,570 1,241,490 774,810 345,140 41,140 201,420 152,470 28,050	93 0 1 97 77 105 588 245 191 434 815 509 228 25 131 100 18	.042 .005 .008 .022 .028 .042 .026 .030 .039 .055 .058 .043 .019 .011 .029 .022	

### For period of 15.337 years

Average discharge in acre-feet per year	-	•	-	774,271
Average acre-feet of silt per year		-	, <del>es</del>	238
Average acre-feet of silt per year per square mile				
of contributing watershed		-	-	.131
Average tons of silt per year	-	-	•	364,198
Average percent of silt by weight				
Drainage area in square miles (net)	<b>.</b>	-	-	1,811

<sup>1/</sup> Station was established December 1, 1932

 $(\mathcal{H}_{\mathcal{H}_{\mathcal{H}}},\mathcal{H}_{\mathcal{H}_{\mathcal{H}}}) = (\mathcal{H}_{\mathcal{H}_{\mathcal{H}}},\mathcal{H}_{\mathcal{H}_{\mathcal{H}}},\mathcal{H}_{\mathcal{H}_{\mathcal{H}}}) + (\mathcal{H}_{\mathcal{H}_{\mathcal{H}}},\mathcal{H}_{\mathcal{H}_{\mathcal{H}}})$ 

<sup>2/</sup> Station was discontinued December 31, 1933. 3/ Station was reestablished July 1, 1937.

### 

for

Month	Discharge of Stream	Silt Load of Stream		Percentage of Dry Silt by Weight
1950	acft.	tons	acft.	pct.
October	195,600	52,380	34	.020
November	79,660	13,270	9	.012
December	55,560	6,910	5	.009
1951				
January	72,100	26,060	17	.027
February	139,400	139,980	92	.074
March	158,600	53,220	35	.025
April	95,200	19,040	12	.015
May	134,400	66,180	43	.036
June	577,300	403,950	265	.051
July	134,500	65,380	43	.036
August	31,580	6,390	4	.015
September	54,090	32,090	21	.044
Totals	1,727,990	884,850	580	
U.S.G.S. year	rly discharge in	acre-feet		1,727,990
Total silt fo	or year in acre-	feet		580
	silt per year p			.032
Average perce	ent of silt by w	eight for year		.038
Drainage are	a in square mile	es (net)		17,192

for

### Trinity River Watershed

Stream:

TRINITY

Station: ROMAYOR

Sampler: Claud Allen

(Samples taken from the railroad bridge)

Water Year	Discharge of Stream	Silt Load	of Stream	Average Percentage of Dry Silt by Weight
1/	acft.	tons	acft.	pct.
1935-36 1936-37 1937-38 1938-39 1939-40 1940-41 1941-42 1942-43 1943-44 1944-45 1945-46 1946-47 1947-48 1948-49 1949-50 1950-51	42,130 3,900,920 6,753,160 2,165,150 3,218,170 12,258,630 9,901,100 4,298,370 7,588,430 12,202,840 8,391,500 7,009,180 4,476,720 4,029,430 8,017,800 1,727,990	5,220 3,481,600 6,741,220 3,199,280 4,999,040 9,657,990 9,447,990 4,914,950 11,433,850 13,559,310 8,643,330 5,290,980 3,284,720 3,411,700 5,538,990 884,850	4 2,285 4,423 2,099 3,280 6,335 6,197 3,224 7,501 8,893 5,670 3,468 2,154 2,238 3,634 580	.009 .066 .073 .109 .114 .058 .070 .084 .111 .082 .076 .055 .054 .062

### For period of 15.142 years

Average discharge in acre-feet per year	-		6,338,761
Average acre-feet of silt per year	-	-	4,094
Average acre-feet of silt per year per square mile			
of contributing watershed	63	-	.238
Average tons of silt per year	•	-	6,240,590
Average percent of silt by weight		-	.072
Drainage area in square miles (net)	-	•	17,192

<sup>1/</sup> Station was established August 10, 1936.

### SUMMARY OF SILT DATA FOR SOME OF THE MAJOR TEXAS STREAMS

(For Water Year Ending September 30, 1951)

<del></del>	<del></del>				Average			Amt. of		
Water-			Years	Total	Runoff	Average	e Amount	Silt per	$\mathtt{Silt}$	${ t Net}$
shed	Stream	Silt Station	Samples	Length	of		of	Sq. Mi.	Ъу	Drainage
			Taken	Record	Stream	Ç k	Silt	Watershed	Weight	Area_
			·						per-	
				years	ac-ft	ac-ft	tons	ac-ft	cent	sq.mi.
Brazos	Salt Fork	Aspermont 1/	1924-25	1,238	111,100	2,818	4,297,420	1.272	2.842	2,216
Brazos	Salt Fork	Seymour 17	1924-30	6.107	398,864	6,501	9,912,150		1.826	5,250
Brazos	Dbl.Mt.Fork	Aspermont 1/	1924-33	9.244	135,280	2,665	4,062,400		2.206	1,510
Brazos	Clear Fork	Crystal Falls 1/	1925-29	3.307	214,440	<sup>2</sup> 568	866,020		•297	4,320
Brazos	Clear Fork	Eliasville 1/	1924-25	1.244	177,240	529	808,630		•335	5,740
Brazos	Little River	Little River 1/	1924-29	4.962	419,870	752	1,147,190		.201	5,253
Brazos	San Gabriel	Circleville 17	1924-29	5.403	110,744	222	339,590		.225	602
Brazos	Leon	Belton 2/	1945-50	4.333	339,520	353	527,41		.114	3,547
Brazos	Navasota	Easterly	1942-51	9.748	304,741	183	278,971		.067	949
Brazos	Brazos	South Bend	1942-51	9.710	485,834	2,575	3,924,330		•593	12,360
' Brazos	Brazos	Possum King.Dam	1942-51	9.710	552,068	71	109,06		.015	
🗗 Brazos	Brazos	Mineral Wells 1	1924-34	10.332	953,550	6,506	9,920,060	.468	.764	13,910
Brazos	Brazos	Glen Rose 1/	1924-29	4.588	1,181,370	8,378	12,773,810	•537	•794	15,600
Brazos	Brazos	Waco 1/	1924-33	9.254	1,717,130	10,325	15,742,010		.673	19,260
Brazos	Brazos	Bryan 1/	1899-02	3.419	4,156,736	39,117		,	•941*	29,190
Brazos	Brazos	Richmond	1924-51	27.306	5,526,956	21,948	33,505,613	.631	-445	34,810
Colorado	Llano	Llano	1942-51	9.167	176,927	193	294,71	.048	.122	4,000
Colorado	Pedernales	Johnson City	1942-51	9.167	85,620	111	168,38	3 .117	.144	947
Colorado	Colorado	San Saba	1930-51	21.055	1,120,643	2,920	4,452,081	.156	.186	18,700
Colorado	Colorado	Tow 1/	1927-32	5.162	1,245,440	3,360	5,122,520	.174	.302	19,300
Colorado	Colorado	Inks Dam	1942-51	9.167	626,783	49	74,54	3	.009	
Colorado	Colorado	Buchanan Dam	1947-51	4.000	519,405	22	32,54	}	.005	
Colorado	Colorado	Austin 3/	1937-51	14.164	1,578,548	623	948,53	7 .024	•044	26,260
Colorado	Colorado		30-33;37-41		3,167,710	5,898	8,991,960		.209	29,140
Guadalupe	Guadalupe	Spring Branch	1942-51	9.748	171,060	85	130,55		.056	1,432
Guadalupe	Guadalupe	Victoria	1945-51	6.083	903,299	342	520,87		.042	5,311

<sup>\*</sup> Percent of silt by volume.

1/ Silt by months and summary data prior to 1940 contained in Progress Report No. 1.

2/ Station discontinued December 31, 1949.

3/ Station discontinued October 31, 1941.

### SUMMARY OF SILT DATA (Continued)

<del></del>			<del></del>		Average		<del></del>	Amt. of		· · · · · · · · · · · · · · · · · · ·
Water⊨			Years	Total	Runoff	Averag	ge Amount	Silt per	Silt	Net
shed	Stream	Silt Station	Samples	Length	of		of	Sq. Mi.	ъу	Drainage
			Taken	Record	Stream	5	Silt	Watershed	Weight	Area
									per-	
				years	ac-ft	ac-ft	tons	ac-ft	cent	sq.mi.
Lavaca	Lavaca	Edna	1945-51	6.083	141,858	108	164,060	.122	.085	887
Neches	Angelina	Horger	1945-51	6.083	2,407,376	360	548,290		.017	3,435
Neches	Neches	Rockland	1930-51	21.148	1,978,496	294	449,526		.017	3,539
Nueces	Nueces	Cotulla	1942-51	9.748	169,269	68	103,076		.045	5,260
Nueces	Nueces	Three Rivers	1927-51	24.000	662,721	494	753,289		.084	15,600
Nueces	Nueces	Corpus Chr.Dam	1942-51	9.660	619,886	135	206,927		.025	== cp.
Rio Grande	Rio Grande	Eagle Pass 4/	1934-43	9.068	3,180,057		14,904,545	.078	. 344	125,260
Rio Grande	Rio Grande	Roma 4/	1929-43	14.184	4,166,619	12,588	19,192,311	.080	. 338	157,204
Red	Pease	Crowell $5/$	1942-47	5.002	113,411	992	1,512,834	.412	.980	2,410
Red	Wichita	Wichita Falls 1		2.014	566,420	5,516		1.776	•974*	3,105
Red	Red		30-33;36-37	6.260	3,326,780	13,640	20,793,380		.459	32,840
Sabine	Sabine		32 <b>-</b> 33;35-51	17.156	2,912,077	694	1,059,410	.143	.027	4,858
Sabine	Sabine	Ruliff 6/	1945-46	1.083	11,408,860	3,124	5,771,404	.331	.037	9,440
San Antonio	San Antonio	Falls City 1/	1927-33	5.967	127,120	142	216,730	.069	.125	2,070
San Antonio	San Antonio	Goliad	1942-51	9.748	446,018	433	660,822	.111	.109	3,918
San Jacinto	West Fork		32-33;37-51	15.337	774,271	238	364,198	.131	.035	1,811
San Jacinto	San Jacinto	Huffman	1945-51	6.083	1,519,214	546	833,257	.196	.040	2,791
Trinity	Trinity	Rosser <u>7</u> /	1938-40	1.598	760,700	986	1,504,920		.145	8,057
Trinity	Trinity	Romayor	1936-51	15.142	6,338,761	4,094	6,240,590	.238	.072	17,192

Percent of silt by volume.

<sup>1/</sup> Silt by months and summary data prior to 1940 contained in Progress Report No. 1.

1/ Station discontinued May 31, 1943.

5/ Station discontinued June 30, 1947.

6/ Station established September 1, 1945 and discontinued September 30, 1946.

7/ Station discontinued June 27, 1940.

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