

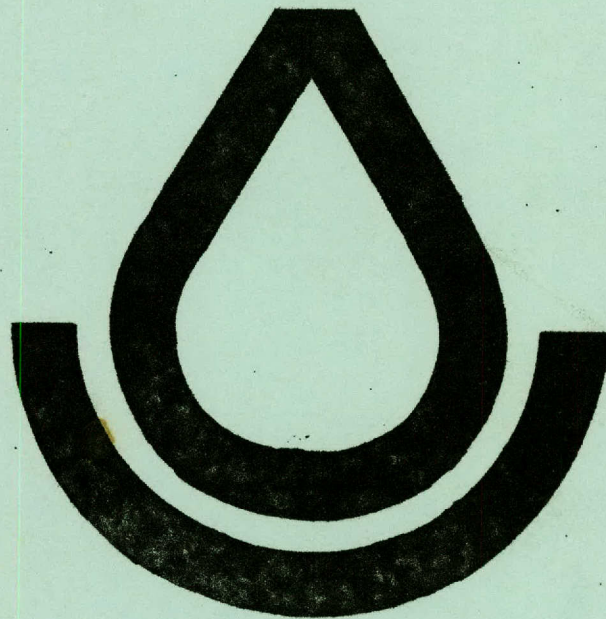
ZS 306.8/C755

ST. MARY'S UNIVERSITY LIBRARY

CONSERVATION

NEEDS

INVENTORY



BEXAR COUNTY

1970

BEXAR COUNTY  
CONSERVATION NEEDS INVENTORY

The Bexar County Conservation Needs Inventory was prepared by the Bexar County Conservation Needs Committee under the supervision of the Soil Conservation Service whose representative served as committee chairman.

Agencies that participated in compiling the data and whose representatives comprised the Bexar County Conservation Needs Committee are:

USDA, Agricultural Research Service  
USDA, Agricultural Stabilization  
and Conservation Service  
USDA, Farmers Home Administration  
USDA, Soil Conservation Service  
Texas Agricultural Extension Service  
Texas Education Agency  
(Vocational Agriculture Department)  
Texas Parks and Wildlife Department

PUBLISHED BY  
ALAMO SOIL AND WATER CONSERVATION DISTRICT

## TABLE OF CONTENTS

	<u>Page</u>
Summary	1
Summary of Conservation Treatment Needs	5
Introduction	9
Tables	12-31
Watershed Problems and Activities	32
Recreation and Wildlife	36
Appendix A - Procedures	37
Appendix B - Glossary of Terms	39
Appendix C - Land Capability Classification System	41
Appendix D - Land Resource Area Descriptions	43

## SUMMARY

The ever-changing pattern of land use and the dynamic changes in land treatment call for a periodic review and up-dating of conservation needs.

In 1958 an inventory of land use and conservation treatment needs was prepared for Bexar County. This inventory has now been revised and up-dated to reflect current land use and treatment needs.

This summary points out the trends in these land use changes along with current conservation treatment needs for the agricultural land of Bexar County.

A detailed description of the land uses and treatment needs according to various soil types and land capability classification is contained in the text of this report.

Also included in the main body of the report are summaries of the various watersheds and their problems and a discussion of the recreation and wildlife potential and needs for Bexar County.

## CHANGES IN LAND USE

Lands not included in this study:

	<u>1958 Inventory Acres</u>	<u>New Inventory Acres</u>
Federal Land	49,000	53,325
Urban and Built-up Land <sup>1/</sup>	118,695	155,134
Small Water Areas(2-40 ac.) <sup>1/</sup>	<u>640</u>	<u>2,000</u>
Total	168,335	210,369

Lands Included in the Inventory:

	<u>1958 Inventory Acres</u>	<u>New Inventory Acres</u>
Cropland <sup>1/</sup>	287,289	210,104
Pasture <sup>1/</sup>	0 <sup>2/</sup>	31,422
Range <sup>1/</sup>	140,451	111,110
Forest <sup>1/</sup>	187,693	174,328
Other Land <sup>1/</sup>	<u>14,222</u>	<u>58,487</u>
Total	629,745	585,451
Total Bexar County Land Area <sup>3/</sup>	<u>798,080</u>	<u>795,820</u>

<sup>1/</sup> See Appendix B, Glossary of Terms, for definitions as used in this report.

<sup>2/</sup> No improved pastures were recognized during the 1958 CNI.

<sup>3/</sup> Acreage differences due to increase of water area over 40 acres, i.e. Braunig Lake, and a different method of measuring land used by the Bureau of Census. This land area excludes water area over 40 acres and streams more than 1/8 mile wide.

## TRENDS - BEXAR COUNTY

These figures indicate several major shifts in land use along with an increase in agricultural land being converted to urban development and rural investment tracts since 1958:

About 67,000 acres have been taken out of cultivation and put to other land uses resulting in a reduction of some 25% of the total cropland acreage.

Pastureland has increased by 31,000 acres.

Rangeland and Forest land have decreased by a combined total of 52,000 acres, a reduction of about 28% in these land uses.

Other Lands (which includes rural non-farm residences and rural investment tracts) have increased by 44,000 acres. This is 2 1/2 times greater than in 1958.

About 37,000 acres have gone into urban developments, an increase of 30% over the past decade.

Federally-owned lands have increased by about 4,000 acres.

Water areas less than 40 acres in size have increased by 1400 acres.

## COMPARISON OF BEXAR COUNTY TRENDS VS. STATEWIDE

	<u>Bexar County</u>	<u>State</u>
Cropland	- 27%	- 14%
Pasture	<u>1/</u>	† 88%
Range	- 21%	- 1%
Forest	- 7%	- 7%
Other Land (rural)	† 241%	† 86%
Federal Land	† 8%	† 10%
Urban and Built-up Areas	† 31%	† 12%
Small Water Areas	† 212%	- 2%

1/ No comparative data available

SUMMARY OF  
CONSERVATION TREATMENT NEEDS

Non-Irrigated Cropland

Bexar County has 158,051 acres being used as non-irrigated cropland. About 57% needs conservation treatment.

28,582 acres need crop residue management or annual cover crops.

46,562 acres need strip cropping, terraces, diversions and grassed waterways in addition to good crop residue management and cropping systems.

13,249 acres need to be taken out of cultivation and planted to permanent grasses.

379 acres need to be farmed on the contour with proper management of residues and a good cropping system.

This means that 88,772 acres of non-irrigated cropland need conservation treatment.

Irrigated Cropland

Bexar County has 24,797 acres of irrigated cropland. About 61% needs conservation treatment.

5,299 acres need improved irrigation systems.

2,460 acres need management of irrigation water to prevent waste of water and to control erosion.

7,382 acres need only improved crop or soil management practices.

This totals 15,141 acres of irrigated cropland that need one or more conservation practices.

Other Cropland

Bexar County also has 379 acres used to grow trees and bush fruit crops--all of this land needs additional conservation treatment.



Bexar County has 26,877 acres of open land that was formerly cropped. These are old fields that have not been established to permanent grass and which can be returned to crop production with little or no effort. About 75% of this land needs conservation treatment.

#### Pastureland

Bexar County has 31,422 acres of improved pastures being used for grazing by livestock. About 68% of this land needs conservation treatment.

2,650 acres need only protection and better grazing management.

8,139 acres need reestablishment of vegetative cover by seeding or sodding.

947 acres need brush control followed by reestablishment of the grass cover.

9,465 acres need more cover and increased vigor of existing grasses.

This totals 21,201 acres of pastureland needing treatment with one or more conservation practices.

#### Rangeland and Forest Land Grazed

Bexar County has 285,438 acres of rangeland and forest land being used for grazing. 111,110 acres is open rangeland which has a cover of native grasses, forbs and shrubs and less than 10% cover of trees. There are 174,328 acres of grazing land classed as forest for the purpose of this inventory which have a natural cover of native grasses but with over 10% cover of forest type trees such as oak and cedar. About 81% of these grazing lands need conservation treatment.

9,275 acres of range and forest land need only protection. This land has been over-used but can be improved by proper grazing.

123,602 acres of range and forest land need brush control so that native range grasses can be improved by range management systems.

3,217 acres of rangeland need reestablishment of vegetative cover by reseeding with adapted native grasses.

88,584 acres of range and forest land need brush control followed by reseeding with adapted grasses and sound range management systems.

6,814 acres of range and forest land are not feasible to treat with any conservation measures.

7,003 acres of forest land need reduction or elimination of grazing to protect the forage resources.

This totals 231,681 acres of range and forest land that are feasible to treat and need treatment with one or more conservation measures.

SUMMARY OF  
CONSERVATION NEEDS INVENTORY

<u>Major Land Uses</u>	<u>Acres</u>	<u>Acres Needing Conservation Treatment</u>
Non-Irrigated Cropland	158,051	88,772
Irrigated Cropland	24,797	15,141
Other Cropland <sup>1/</sup>	27,256	20,537
Pasture	31,422	21,201
Range	111,110	102,781
Forest Land, Grazed	174,328	128,900
Other Land	58,487	
In Farms	9,654	6,724
Not In Farms	<u>48,833</u>	<u>23,896</u>
Total Inventory Acres	585,451	407,952

<sup>1/</sup> See Appendix B, Glossary of Terms

What Does the Inventory Show?

It reveals that for Bexar County:

About 70% or every two out of three acres in the county needs one or more conservation measures.

Most of the land needing treatment needs conservation treatment every year in the form of annual management practices.

About seven out of ten acres of grassland have been invaded by brush. This coupled with other grazing management problems makes grassland improvement one of the county's foremost needs.

About half of the county's non-irrigated cropland needs crop residue management, better cropping systems, terraces, and waterways.

Some 30% of the county's irrigated cropland needs an improved irrigation system to prevent erosion and water loss.

## INTRODUCTION

Foreword

Our vast expanse of good land and ample water supply has brought the American people the highest standard of living in the history of mankind.

This type of society is possible only in those nations able to produce a plentiful supply of food at reasonable cost, thus freeing a larger share of spendable income for other purchases and pursuits. The United States is such a nation.

Basic then, to this type of society, is a permanent agriculture founded upon rich soil and water resources. The resources are available. But, in the face of technological advances and population growth there are also resource problems.

There is still more soil erosion than can be afforded. The water problem is three-fold: too much, too little, too poor.

Pollution is threatening both the land and water resources. The need for outdoor recreational facilities based upon these resources is multiplying at an overwhelming rate.

With these problems, and with soil and water uses undergoing such rapid change, it becomes more imperative each day that every possible effort be mobilized to preserve, conserve and improve these resources.

Accurate, up-to-date information is needed on the kinds and amounts of land and water, their possible uses and their needs for management and improvement. Such data is needed by all persons, agencies and groups responsible for programs that affect the use, development, and conservation of privately-owned lands and water areas of the nation.

In 1958 - 1960 such a Conservation Needs Inventory was developed for the nation under the direction of the Department of Agriculture. This inventory represented the composite knowledge and judgement of USDA agencies regarding land use and conservation needs at that time.

Need for Updating

Shifts in land use and changes in land treatment call for periodic review and updating of conservation needs.

Updating the CNI data is necessary to make them more useable for USDA and other Departments, agencies and groups involved in programs of soil and water conservation. The areas in which changes have been made in the use of privately-owned rural land and the extent of the change should be known. There is a need for determining the conservation treatment by kinds of practices in relation to how the land is being used.

Accordingly, an inventory was prepared during 1966-1967 to obtain current information on shifts in land use and changes in conservation needs. This updated data which is presented herewith will help provide adequate, current information for guidance to the going conservation program and for development of new programs to cope with new problems.

### Objectives

1. To develop current detailed data on land use and conservation treatment needs by soils on non-federal rural lands.
2. To obtain data on watershed project needs on both privately and publicly owned land in the United States.

### Soil and Water Conservation Defined

Soil and water conservation, as defined for this inventory, is the protection, use, maintenance and improvement of the land and water resources of the nation in serving both public and private interests by providing adequate food, fiber, forest products, recreation and wildlife resources now and in the future.

The conservation of soil, water and vegetative resources is accomplished in many ways--among them are:

1. Making adjustments in land use
2. Protecting land against soil depletion
3. Rebuilding eroded and depleted soils
4. Stabilizing runoff and sediment producing areas
5. Improving cover on crop, range, pasture, forest and wildlife lands
6. Retaining water for farm and ranch use

7. Reducing water and sediment damage
8. Water management--the better use of irrigation water to reduce erosion and waste of water.

Procedures and Definitions

The procedures used to develop this inventory along with a complete definition of terminology used will be found at the end of this report in Appendices A and B respectively.

TABLE 1

LAND AREA, NON-INVENTORY<sup>1/</sup> AND INVENTORY<sup>1/</sup> ACREAGES - 1958 AND 1967

TOTAL LAND AREA	NON-INVENTORY ACREAGES								INVENTORY ACREAGE	
	FEDERAL NON-CROPLAND		URBAN AND BUILT-UP		SMALL WATER AREAS		TOTAL		1958	1967
	1958	1967	1958	1967	1958	1967	1958	1967		
795,820	49,000	53,325	118,695	155,134	640	2,000	168,335	210,369	629,745	585,451

<sup>1/</sup> See Appendix B, Glossary of Terms

TABLE 2

## LAND USE OF ACRES INCLUDED IN INVENTORY - 1958 AND 1967

TOTAL INVENTORY	CROPLAND		PASTURE		RANGE		FOREST		OTHER LAND		
1958	1967	1958	1967	1958	1967	1958	1967	1958	1967	1958	1967
629,745	585,451	287,289	210,104		31,422	140,541	111,110	187,693	174,328	14,222	58,487

TABLE 3

## IRRIGATED CROPLAND ACRES BY LAND CAPABILITY CLASSES - 1967

LAND CAPABILITY CLASS	CROPLAND IN TILLAGE ROTATION								ORCHARDS	OPEN LAND	TOTAL CROPLAND	
1/ SUB-CLASS	ALL CROPS	ROW CROPS	CLOSE GROWN	SUMMER FALLOW	TOTAL FIELD CROPS	HAY AND PASTURE	HAYLAND	CONSERVATION USE ONLY	TEMPORILY IDLE CROPLAND	TOTAL TILLAGE ROTATION	VINEYARDS AND BUSH FRUIT	FORMERLY CROPPED
1/	CROPS	CROPS	CROPS	CROPS	CROPS							
1	8,707	4,921	0	13,628	0	0	0	0	13,628	0	0	13,628
2E	2,272	0	0	2,272	0	0	0	0	2,272	0	0	2,272
3E	5,868	379	0	6,247	0	0	0	0	6,247	0	0	6,247
7E	189	0	0	189	0	0	0	0	189	0	0	189
2S	1,136	0	0	1,136	0	0	0	0	1,136	0	0	1,136
3S	946	0	0	946	0	0	0	0	946	0	0	946
4S	379	0	0	379	0	0	0	0	379	0	0	379
TOTAL	19,497	5,300	0	24,797	0	0	0	0	24,797	0	0	24,797

1/ See Table 7, Soil Legend, and Appendix C for further explanation



## IRRIGATED AND DRY CROPLAND ACRES BY LAND CAPABILITY CLASSES - 1967

LAND	CROPLAND IN TILLAGE ROTATION										ORCHARDS	TOTAL
CAPABILITY:	FIELD CROPS			ROTATION:	CONSER-	TEMPOR-	LY:	TOTAL	VINEYARDS:	CROPLAND		
CLASS	ALL ROW:	CLOSE	SUMMER:	TOTAL	HAY AND	HAYLAND:	VATION	IDLE	TILLAGE	AND BUSH	FORMERLY:	
SUB-CLASS	CROPS	GROWN	FALLOW:	FIELD	PASTURE		USE ONLY:	CROPLAND	ROTATION:	FRUIT	CROPPED	
<u>1/</u>	CROPS		CROPS									
1	8,707	4,921	0	13,628	0	0	0	0	13,628	0	0	13,628
2E	15,900	10,411	0	26,311	189	379	2,650	1,136	30,665	0	3,975	34,640
3E	57,920	12,493	0	70,413	0	379	5,489	3,786	80,067	0	13,628	93,695
4E	8,896	6,246	0	15,142	0	0	1,136	1,136	17,414	0	4,732	22,146
6E	1,135	0	0	1,135	0	0	0	0	1,135	0	2,650	3,785
7E	189	0	0	189	0	0	0	0	189	0	0	189
2W	757	568	0	1,325	0	0	0	0	1,325	0	189	1,514
5W	946	1,514	0	2,460	0	0	0	189	2,649	0	0	2,649
2S	8,897	4,921	0	13,818	0	1,136	0	0	14,954	379	189	15,522
3S	1,893	0	0	1,893	0	0	0	0	1,893	0	946	2,839
4S	379	0	0	379	0	0	0	0	379	0	0	379
6S	0	189	0	189	0	0	0	0	189	0	0	189
7S	379	946	0	1,325	0	0	0	0	1,325	0	0	1,325
2C	11,168	2,839	0	14,007	0	1,514	379	1,136	17,036	0	568	17,604
TOTAL	117,166	45,048	0	162,214	189	3,408	9,654	7,383	182,848	379	26,877	210,104

1/ See Table 7, Soil Legend, and Appendix C for further explanation

TABLE 5

## IRRIGATED PASTURE AND RANGE, FOREST AND OTHER LAND ACRES BY LAND CAPABILITY CLASSES - 1967

LAND	PASTURE AND RANGE			FOREST						OTHER LAND			TOTAL
CAPABILITY	:	:	:	:	:	:	COMMER-	NON-COM-	:	:	NOT	:	LAND
CLASS	PASTURE	RANGE	TOTAL	COMMER-	NON-COM-	TOTAL	CIAL	MERCIAL	TOTAL	IN	IN	TOTAL	IN IN-
SUB-CLASS <sup>1/</sup>	:	:	:	CIAL	MERCIAL	:	GRAZED	GRAZED	GRAZED	FARMS	FARMS	:	VENTORY
1	379:	0:	379:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0: 14,007
2E	946:	0:	946:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0: 3,218
3E	2,082:	0:	2,082:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0: 8,329
4E	379:	0:	379:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0: 379
7E	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0: 189
5W	379:	0:	379:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0: 379
2S	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0: 1,136
3S	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0: 946
4S	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0: 379
TOTAL	4,165:	0:	4,165:	0:	0:	0:	0:	0:	0:	0:	0:	0:	0: 28,962

<sup>1/</sup> See Table 7, Soil Legend, and Appendix C for further explanation

TABLE 6

## IRRIGATED AND DRY PASTURE AND RANGE, FOREST AND OTHER LAND ACRES BY LAND CAPABILITY CLASSES -

LAND CAPABILITY CLASS SUB-CLASS <sup>1/</sup>	PASTURE AND RANGE			FOREST						OTHER LAND	
	PASTURE	RANGE	TOTAL	COMMER- CIAL	NON-COM- MERCIAL	TOTAL	CIAL GRAZED	MERCIAL GRAZED	TOTAL GRAZED	IN FARMS	IN FARMS
1	379	0	379	0	0	0	0	0	0	0	0
2E	4,164	10,221	14,385	0	2,271	2,271	0	2,271	2,271	1,514	946
3E	10,980	40,317	51,297	0	10,411	10,411	0	10,411	10,411	4,164	10,221
4E	11,546	13,818	25,364	0	20,632	20,632	0	20,632	20,632	1,136	7,571
6E	1,136	7,761	8,897	0	946	946	0	946	946	379	1,514
7E	0	3,596	3,596	0	0	0	0	0	0	0	0
2W	0	5,111	5,111	0	0	0	0	0	0	0	0
5W	1,514	10,600	12,114	0	1,325	1,325	0	1,325	1,325	568	1,893
2S	0	757	757	0	0	0	0	0	0	189	2,082
3S	189	946	1,135	0	0	0	0	0	0	0	0
4S	0	0	0	0	0	0	0	0	0	0	0
6S	0	13,628	13,628	0	84,987	84,987	0	84,987	84,987	1,325	3,407
7S	0	2,082	2,082	0	53,567	53,567	0	53,567	53,567	0	20,253
2C	1,514	2,273	3,787	0	189	189	0	189	189	379	946
TOTAL	31,422	111,110	142,532	0	174,328	174,328	0	174,328	174,328	9,654	48,833

<sup>1/</sup> See Table 7, Soil Legend, and Appendix C for further explanation

## TABLE 7

## SOILS LEGEND

Soil Code

Alphabetical nonsense codes were assigned to all the possible soil individuals and land types known in the state. In some situations more than one code had been given. In these cases all codes are listed. Soil series name, and type name and classification, according to the comprehensive classification system, have been shown for each soil.

Slope Class

Slope indicates the topography on which the soil occurs. The alphabetical letters represent the degree of slope range. The number(s) following the letters show the average percent slope within the soil (example AC03), slope range for A, 0-1%, for C, 3-5%, average slope 3%. Specific slope classes were used in the inventory. They are as follows:

A 01, AC03, B 02, BC03, BD05, C 04, D 07, DE09, EF14, EG20, and G 25

Erosion Class

Numbers have been used to indicate the degree of erosion believed to have occurred to the soil. The higher number indicates a greater degree of erosion. Only four erosion classes were used in the survey. They are as follows:

1 - Slightly eroded	3 - Moderately to severely eroded
2 - Moderately eroded	4 - Severely eroded

Land Capability Unit

Land capability units have been assigned to the soils according to their potentialities and limitations for sustained production of common cultivated crops that do not require special treatment. Numbers are used to indicate the degree of limitation of use for crops. The higher numbers indicate greater limitations. Eight units are recognized. They are as follows:

1, 2, 3, 4, 5, 6, 7 and 8

Subclasses

Subclasses are letters used to follow the land capability unit numbers to indicate the kind of soil limitation. Only four subclasses are used. They are as follows:

E - Limitations due to soil erosion
W - Limitations due to excess water
S - Limitations due to soil characteristics
C - Limitations due to climate

TABLE 7 - INVENTORY OF SOILS

SOIL SERIES	STATE: BEXAR	COUNTY:	SOIL CLASSIFICATION	SLOPE: ERO-	LAND : ACRES
CODE	CNI	COUNTY:	AND	CLASS: SION	CAPA-
SURVEY:	CODE	SOIL	IDENTIFYING CHARACTERISTICS	CLASS: BILITY:	CLASS :
CODE				& SUB-	CLASS :
Unnamed	AXC	1/	Typic Ustifluvents, coarse-loamy, mixed, nonacid, thermic (fine sandy loam)	A 01 : 1	2W : 757
Eddy	BNA	1/	Typic Ustorthents, loamy-skeletal, carbonatic, thermic, shallow (soils)	B D05 : 1	6E : 3,217
Houston Black:	CMA	HsB	Udic Pellusterts, fine, montmorillonitic, thermic (clay)	B 02 : 1	3E : 7,760
Houston Black:	CMA	HsC	Udic Pellusterts, fine, montmorillonitic, thermic (clay)	C 04 : 1	3E : 6,814
Houston Black:	CME	HuB	Udic Pellusterts, fine, montmorillonitic, thermic (gravelly clay)	B 02 : 1	3E : 3,407
Houston Black:	CME	HuC	Udic Pellusterts, fine, montmorillonitic, thermic (gravelly clay)	C 04 : 1	3E : 8,139
Houston Black:	CME	HuD	Udic Pellusterts, fine, montmorillonitic, thermic (gravelly clay)	D 07 : 1	4E : 947
Houston Black:	CMG	HtA	Udic Pellusterts, fine, montmorillonitic, thermic (clay terraces)	A 01 : 1	2S : 10,410
Houston Black:	CMG	HtB	Udic Pellusterts, fine, montmorillonitic, thermic (clay terraces)	B 02 : 1	3E : 2,839
Heiden	CPA	HnB	Udic Chromusterts, fine, montmorillonitic, thermic (clay)	B 02 : 1	3E : 379
Heiden	CPA	HnC2	Udic Chromusterts, fine, montmorillonitic, thermic (clay)	C 04 : 1	3E : 1,325
Heiden	CPA	HnC3	Udic Chromusterts, fine, montmorillonitic, thermic (clay)	C 04 : 3	3E : 758



SOIL SERIES	STATE: BEXAR	COUNTY:	SOIL CODE	SURVEY CODE	SOIL CLASSIFICATION	AND IDENTIFYING CHARACTERISTICS	SLOPE: EROSION CLASS	LAND CAPABILITY CLASS	ACRES
Webb	KNV	WeC3			Udic Haplustalfs, fine, mixed, hyperthermic	(fine sandy loam)	C 04	4 6E	1,135
San Antonio	KNW	SaB			Typic Haplustalfs, fine, montmorillonitic, hyperthermic	(clay loam)	B 02	1 3E	13,440
San Antonio	KNW	SaC			Typic Haplustalfs, fine, montmorillonitic, hyperthermic	(clay loam)	C 04	1 4E	7,950
Comitas	KQV	1/			Arenic Haplustalfs, loamy, mixed, hyperthermic	(loamy fine sand)	C 04	1 3E	2,081
Duval	KVP	DnC			Udic Haplustalfs, fine-loamy, mixed, hyperthermic	(fine sandy loam)	B 02	1 2E	567
Ramadero	MCW	1/			Pachic Argiustolls, fine-loamy, mixed, hyperthermic	(loam)	A 01	1 2E	189
Ramadero	MCW	1/			Pachic Argiustolls, fine-loamy, mixed, hyperthermic	(loam)	B 02	1 2E	2,460
Knippa	MLK	1/			Vertic Calciustolls, fine, mixed, thermic	(silty clay)	A 01	1 1	2,650
Knippa	MLK	1/			Vertic Calciustolls, fine, mixed, thermic	(silty clay)	A 01	1 2C	1,703
Lewisville	MNJ	LvA			Typic Haplustolls, fine, mixed, thermic	(clay loam)	A 01	1 2C	8,518
Lewisville	MNJ	LvB			Typic Haplustolls, fine, mixed, thermic	(clay loam)	B 02	1 2E	17,982
Patrick	MNP	PaB			Haplustic Rendolls, clayey over sandy or sandy skeletal,	carbonatic, thermic (clay loam)	B 02	1 3E	12,493
Patrick	MNP	PaC			Haplustic Rendolls, clayey over sandy or sandy skeletal,	carbonatic, thermic (clay loam)	C 04	1 4E	568

SOIL SERIES	STATE: BEXAR	COUNTY:	SOIL CLASSIFICATION	SLOPE: ERO-	LAND : ACRES
CODE	CNI	COUNTY:	AND	CLASS: SION	CAPA-
SURVEY:	SOIL		IDENTIFYING CHARACTERISTICS	CLASS:	BILITY:
CODE				& SUB-	CLASS :
Austin	MPE	AuB	Haplustic Rendolls, fine-carbonatic, thermic (silty clay)	:B 02 : 1	: 2E : 3,597
Austin	MPE	AuC	Haplustic Rendolls, fine-carbonatic, thermic (silty clay)	:C 04 : 1	: 3E : 3,786
Frio	MQR	Tf	Cumulic Haplustolls, fine, mixed, thermic (clay loam--frequently flooded)	:A 01 : 1	: 5W : 17,603
Frio	MRA	Fr	Cumulic Haplustolls, fine, mixed, thermic (Frio-like clay loam)	:A 01 : 1	: 1 : 1,514
Frio	MRA	Fr	Cumulic Haplustolls, fine, mixed, thermic (Frio-like clay loam)	:A 01 : 1	: 2W : 3,785
Tarrant	MTA	TaB	Lithic Haplustolls, clayey-skeletal, montmorillonitic, thermic (stony clay)	:BC03 : 1	: 6S : 63,030
Tarrant	MTA	Tb	Lithic Haplustolls, clayey-skeletal, montmorillonitic, thermic (stony clay)	:DE09 : 1	: 6S : 21,578
Tarrant	MTA	TaC	Lithic Haplustolls, clayey-skeletal, montmorillonitic, thermic (stony clay)	:EF14 : 1	: 7S : 21,957
Tarrant	MTA	TaD	Lithic Haplustolls, clayey-skeletal, montmorillonitic, thermic (stony clay)	:EG20 : 1	: 7S : 31,232
Stephen	MTR	ScB	Typic Rendolls, clayey, mixed, thermic, shallow (silty clay)	:B 02 : 1	: 3E : 379
Stephen	MTR	ScC	Typic Rendolls, clayey, mixed, thermic, shallow (silty clay)	:C 04 : 1	: 4E : 3,029
Zavala	PAC	Za	Typic Ustifluvents, coarse-loamy, mixed, nonacid, hyperthermic (fine sandy loam)	:B 02 : 1	: 5W : 946
Monteola	PDQ	<u>1</u>	Typic Pellusterts, fine, montmorillonitic, hyperthermic (clay)	:B 02 : 1	: 3E : 8,708



SOIL SERIES	STATE: BEXAR	COUNTY:	SOIL CLASSIFICATION	SLOPE: ERO-	LAND : ACRES
CODE	CNI	SOIL	AND	CLASS: SION	CAPA-
SURVEY:	CODE	IDENTIFYING CHARACTERISTICS		CLASS: BILITY:	CLASS :
CODE				& SUB-	CLASS :
Monteola	PDQ	1/	Typic Pellusterts, fine, montmorillonitic, hyperthermic (clay)	C 04 : 1	3E : 2,460
Monteola	PDR	1/	Typic Pellusterts, fine, montmorillonitic, hyperthermic (clay, terrace)	B 02 : 1	3E : 17,036
Monteola	PDR	1/	Typic Pellusterts, fine, montmorillonitic, hyperthermic (clay, terrace)	C 04 : 1	3E : 8,140
Monteola	PDR	1/	Typic Pellusterts, fine, montmorillonitic, hyperthermic (clay, terrace)	D 07 : 1	4E : 379
Monteola	PDS	1/	Typic Pellusterts, fine, montmorillonitic, hyperthermic (gravelly clay)	A 01 : 1	2S : 7,382
Monteola	PDS	1/	Typic Pellusterts, fine, montmorillonitic, hyperthermic (gravelly clay)	B 02 : 1	2S : 757
Monteola	PDS	1/	Typic Pellusterts, fine, montmorillonitic, hyperthermic (gravelly clay)	B 02 : 1	3E : 4,164
Brackett	PFA	BpC	Rendollic Ustochrepts, fine-carbonatic, thermic, shallow (gravelly clay loam)	B 02 : 1	4E : 4,354
Brackett	PFA	BrD	Rendollic Ustochrepts, fine-carbonatic, thermic, shallow (gravelly clay loam)	BD05 : 1	7S : 3,784
Brackett	PFA	BrE	Rendollic Ustochrepts, fine-carbonatic, thermic, shallow (gravelly clay loam)	G 25 : 1	7S : 19,496
Orelia	PKC	OrB	Typic Ochraqualfs, fine-loamy, mixed, hyperthermic (sandy clay loam)	B 02 : 1	4E : 2,461
Orelia	PKC	OrB	Typic Ochraqualfs, fine-loamy, mixed, hyperthermic (sandy clay loam)	B 02 : 1	4S : 379
Wilco	PKR	1/	Udic Paleustalfs, fine, mixed, hyperthermic (loamy fine sand)	A 01 : 1	3E : 22,525

SOIL SERIES	STATE: BEXAR :	CNTY: COUNTY:	SOIL CODE :	SURVEY CODE :	SOIL CLASSIFICATION	AND IDENTIFYING CHARACTERISTICS	SLOPE: CLASS:	ERO- SION:	LAND CAPA- BILITY:	ACRES
Wilco	PKR	1/			Udic Paleustalfs, fine, mixed, hyperthermic		C 04	1	3E	189
					(loamy fine sand)					
Wilco	PKR	1/			Udic Paleustalfs, fine, mixed, hyperthermic		C 04	1	4E	5,111
					(loamy fine sand)					
Wilco	PKR	1/			Udic Paleustalfs, fine, mixed, hyperthermic		C 04	3	3E	946
					(loamy fine sand)					
Wilco	PKR	1/			Udic Paleustalfs, fine, mixed, hyperthermic		C 04	3	6E	8,707
					(loamy fine sand)					
Trinity-like	PMQ	Te			Vertic Halpaquolls, fine, montmorillonitic, calcareous, hyperthermic		A 01	1	2W	2,083
					(clay)					
Krum	PMW	Kr			Vertic Haplustolls, fine, mixed, thermic		B 02	1	3E	10,978
					(clay loam, complex)					
Tarpley	PNF	1/			Lithic Haplustolls, clayey, montmorillonitic, thermic		AC03	1	6S	18,927
					(stony clay)					
Venus	PNO	VcA			Typic Haplustolls, fine-loamy, mixed, thermic		A 01	1	1	9,842
					(clay loam)					
Venus	PNO	VcA			Typic Haplustolls, fine-loamy, mixed, thermic		A 01	1	2C	12,681
					(clay loam)					
Venus	PNO	VcB			Typic Haplustolls, fine-loamy, mixed, thermic		B 02	1	2E	10,601
					(clay loam)					
Venus	PNO	VcC			Typic Haplustolls, fine-loamy, mixed, thermic		C 04	1	3E	189
					(clay loam)					
Venus	PNP	VaB			Typic Haplustolls, fine-loamy, mixed, thermic		B 02	1	2E	758
					(loam)					
Venus	PNP	v1/			Typic Haplustolls, fine-loamy, mixed, thermic		C 04	1	3E	1,514
					(loam)					

SOIL SERIES	STATE: BEXAR	COUNTY:	SOIL CODE	SURVEY CODE	SOIL CLASSIFICATION AND IDENTIFYING CHARACTERISTICS	SLOPE: EROSION CLASS	LAND CAPABILITY CLASS	ACRES
-----	XGB	Gu			Gravelly broken land or Hilly gravelly land or gravelly roughland	-	7S	757
-----	XGC	Gu			Gullied land	-	7E	3,785

1/ This series not mapped in Bexar County at the time that the Bexar County Soil Survey was completed.

TABLE 8 - CONSERVATION TREATMENT NEEDS - CROPLAND IN TILLAGE ROTATION (ACRES) - 1967

LAND CLASS AND SUB-CLASS <sup>1/</sup>	NON-IRRIGATED CROPLAND							IRRIGATED CROPLAND			TOTAL
	TREATMENT: ADEQUATE	RESIDUE: AND	SOD: IN	CONTOUR: ING	STRIP: CROPPING	PERMANENT: COVER	DRAIN-: AGE	CULTURAL: MANAGEMENT	IMPROVED: WATER	TILLAGE: ROTATION	
1	6,247	946	0	0	0	0	0	0	4,164	2,271	13,628
2E	17,983	2,650	0	0	7,571	379	0	1,136	946	0	30,665
3E	24,796	12,682	0	379	32,935	5,300	0	3,975	0	0	80,067
4E	3,407	7,382	0	0	2,839	3,786	0	0	0	0	17,414
6E	0	0	0	0	946	189	0	0	0	0	1,135
7E	0	0	0	0	0	0	0	0	189	0	189
2W	379	0	0	0	946	0	0	0	0	0	1,325
5W	0	757	0	0	0	1,892	0	0	0	0	2,649
2S	12,304	379	0	0	1,136	0	0	946	0	189	14,954
3S	0	947	0	0	0	0	0	946	0	0	1,893
4S	0	0	0	0	0	0	0	379	0	0	379
6S	0	0	0	0	0	189	0	0	0	0	189
7S	0	0	0	0	0	1,325	0	0	0	0	1,325
2C	13,819	2,839	0	0	189	189	0	0	0	0	17,036
TOTAL	78,935	28,582	0	379	46,562	13,249	0	7,382	5,299	2,460	182,848

<sup>1/</sup> See Table 7, Soil Legend, and Appendix C for further explanation

TABLE 9 - CONSERVATION TREATMENT NEEDS - OTHER CROPLAND AND TOTAL CROPLAND (ACRES) - 1967

LAND CAPABILITY: CLASS AND SUB-CLASS <sup>1/</sup>	: ORCHARDS, VINEYARDS, AND BUSH FRUIT :				: OPEN LAND FORMERLY CROPPED :				: TOTAL CROPLAND
	: TOTAL	: ADEQUATE	: NEEDED	: TREATMENT : CODE <sup>2/</sup>	: TOTAL	: ADEQUATE	: NEEDED	: TREATMENT : CODE <sup>2/</sup>	
1	0	0	0		0	0	0		13,628
2E	0	0	0		3,975	0	3,975	5	34,640
3E	0	0	0		13,628	6,719	6,909	5	93,695
4E	0	0	0		4,732	0	4,732	5	22,146
6E	0	0	0		2,650	0	2,650	5	3,785
7E	0	0	0		0	0	0		189
2W	0	0	0		189	0	189	5	1,514
5W	0	0	0		0	0	0		2,649
2S	379	0	379	1	189	0	189	5	15,522
3S	0	0	0		946	0	946	5	2,839
4S	0	0	0		0	0	0		379
6S	0	0	0		0	0	0		189
7S	0	0	0		0	0	0		1,325
2C	0	0	0		568	0	568	5	17,604
TOTAL	379	0	379		26,877	6,719	20,158		210,104

<sup>1/</sup> See Table 7, Soil Legend, and Appendix C for further explanation

<sup>2/</sup> Treatment Codes: Code 1 - Crop residues, annual cover crops or other annual recurring measures are needed to meet the conservation problems

Code 5 - A change to a permanent cover of grass or trees is needed in the use of the land

TABLE 10 - CONSERVATION TREATMENT NEEDS - PASTURE (ACRES) - 1967

LAND CAPABILITY CLASS AND SUB-CLASS <sup>1/</sup>	AREA	TREATMENT	NO TREATMENT	CHANGE IN LAND USE	TOTAL NEEDING	PROTECTION ONLY	IMPROVEMENT ONLY	AND IMPROVEMENT	NEEDING OF VEGETATIVE COVER	CONTROL OF BRUSH	REESTABLISHMENT OF REESTABLISHMENT	TOTAL NEEDING
1	379	0	0	0	379	0	379	0	379	0	0	0
2E to 4E	26,690	7,950	0	0	18,740	2,082	8,707	0	10,789	7,004	947	7,951
2S to 4S	189	0	0	0	189	0	0	0	0	189	0	189
2C to 4C	1,514	946	0	0	568	568	0	0	568	0	0	0
5E to 8E	1,136	568	0	0	568	0	379	0	379	189	0	189
5W to 8W	1,514	757	0	0	757	0	0	0	0	757	0	757
TOTAL	31,422	10,221	0	0	21,201	2,650	9,465	0	12,115	8,139	947	9,086

<sup>1/</sup> See Table 7, Soil Legend, and Appendix C for further explanation

TABLE 11 - CONSERVATION TREATMENT NEEDS - RANGE (ACRES) - 1967

LAND CAPABILITY CLASS AND SUB-CLASS <sup>1/</sup>	TOTAL AREA	TREATMENT ADEQUATE	NO TREATMENT FEASIBLE	CHANGE IN LAND USE	TOTAL NEEDING TREATMENT ONLY	NEEDS PROTECTION ONLY	NEEDS IMPROVEMENT ONLY	CONTROL AND IMPROVEMENT	TOTAL NEEDING IMPROVEMENT	BRUSH CONTROL	REESTABLISHMENT OF VEGETATIVE COVER	REESTABLISHMENT OF BRUSH CONTROL	TOTAL NEEDING REESTABLISHMENT
2E to 4E	64,356	946	568	0	62,842	1,326	0	10,221	11,547	3,028	48,267	51,295	
2W to 4W	5,111	0	2,839	0	2,272	0	0	379	379	0	1,893	1,893	
2S to 4S	1,703	0	0	0	1,703	0	0	0	0	0	1,703	1,703	
2C to 4C	2,273	380	0	0	1,893	0	0	0	0	0	1,893	1,893	
5E to 8E	11,357	0	3,217	0	8,140	0	0	0	0	0	8,140	8,140	
5W to 8W	10,600	189	190	0	10,221	568	0	1,325	1,893	189	8,139	8,328	
5S to 8S	15,710	0	0	0	15,710	2,271	0	12,114	14,385	0	1,325	1,325	
<b>TOTAL</b>	<b>111,110</b>	<b>1,515</b>	<b>6,814</b>	<b>0</b>	<b>102,781</b>	<b>4,165</b>	<b>0</b>	<b>24,039</b>	<b>28,204</b>	<b>3,217</b>	<b>71,360</b>	<b>74,577</b>	

<sup>1/</sup> See Table 7, Soil Legend, and Appendix C for further explanation

TABLE 12 - CONSERVATION TREATMENT NEEDS - PASTURE AND RANGE (ACRES) - 1967

LAND CAPABILITY CLASS AND SUB-CLASS <sup>1/</sup>	TOTAL AREA	TREATMENT ADEQUATE	NO TREATMENT FEASIBLE	CHANGE IN LAND USE	TOTAL NEEDING TREATMENT ONLY	NEEDS PROTECTION ONLY	NEEDS IMPROVEMENT ONLY	CONTROL AND IMPROVEMENT	TOTAL NEEDING IMPROVEMENT	BRUSH CONTROL	REESTABLISHMENT OF VEGETATIVE COVER	REESTABLISHMENT OF BRUSH CONTROL	TOTAL NEEDING REESTABLISHMENT
1	379	0	0	0	379	0	379	0	379	0	0	0	0
2E to 4E	91,046	8,896	568	0	81,582	3,408	8,707	10,221	22,336	10,032	49,214	59,246	
2W to 4W	5,111	0	2,839	0	2,272	0*	0	379	379	0	1,893	1,893	
2S to 4S	1,892	0	0	0	1,892	0	0	0	0	189	1,703	1,892	
2C to 4C	3,787	1,326	0	0	2,461	568	0	0	568	0	1,893	1,893	
5E to 8E	12,493	568	3,217	0	8,708	0	379	0	379	189	8,140	8,329	
5W to 8W	12,114	946	190	0	10,978	568	0	1,325	1,893	946	8,139	9,085	
5S to 8S	15,710	0	0	0	15,710	2,271	0	12,114	14,385	0	1,325	1,325	
TOTAL	142,532	11,736	6,814	0	123,982	6,815	9,465	24,039	40,319	11,356	72,307	83,663	

<sup>1/</sup> See Table 7, Soil Legend, and Appendix C for further explanation



TABLE 13 - CONSERVATION TREATMENT NEEDS <sup>1/</sup> - FOREST (ACRES) - 1967

COMMERCIAL FOREST			NON-COMMERCIAL FOREST			TOTAL FOREST		
:	:	:	:	:	:	:	:	:
TOTAL	TREATMENT	MENT AND	TOTAL	TREATMENT	MENT AND	TOTAL	TREATMENT	MENT AND
:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:
0:	0:	0:	0:174,328:	174,328:	0:174,328:	174,328:	0:	0

<sup>1/</sup> Conservation treatment needs as applies to use of the land for non-commercial forest

TABLE 14 - CONSERVATION TREATMENT NEEDS - FOREST LAND GRAZED (ACRES) - 1967 <sup>1/</sup>

COMMERCIAL FOREST GRAZED			NON-COMMERCIAL FOREST GRAZED			TOTAL FOREST GRAZED		
:	:	:	:	:	:	:	:	:
TOTAL	TREAT-	TO	TOTAL	TREAT-	TO	TOTAL	TREAT-	TO
:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:
:	:	:	:	:	:	:	:	:
0:	0:	0:	0:174,328:	45,428:	121,897:	7,003:	174,328:	45,428:
								121,897:
								7,003

<sup>1/</sup> This land is supplemented with pasture and range treatments for proper use of the land. These data are a duplication of the forest land shown in Table 13.

TABLE 14-A - CONSERVATION TREATMENT NEEDS - FOREST LAND GRAZED - IMPROVEMENT OF FORAGE <sup>1/</sup>

TOTAL	COMMERCIAL:	NON-	NEEDS	NEEDS	NEEDS BRUSH:	NEEDS REESTAB-	NEEDS REESTAB-
NEEDING	FOREST	COMMERCIAL:	PROTECTION:	IMPROVEMENT:	CONTROL AND:	VEGETATIVE	BRUSH
TREATMENT:	FOREST	FOREST	ONLY	ONLY	IMPROVEMENT:	COVER	CONTROL
121,897:	0:	121,897:	5,110:	0:	99,563:	0:	17,224

<sup>1/</sup> This land is a duplication of acres shown in column "Needs to Improve Forage" on Table 14 and clarifies improvement needed

TABLE 15 - CONSERVATION TREATMENT NEEDS - OTHER LAND (ACRES) - 1967

IN FARMS			NOT IN FARMS			TOTAL - OTHER LAND		
TOTAL	NEED	TREATMENT:	TOTAL	NEED	TREATMENT:	TOTAL	NEED	TREATMENT
:	:	ADEQUATE	:	:	ADEQUATE	:	:	ADEQUATE
9,654:	6,724:	2,930:	48,833:	33,896:	14,937:	58,487:	40,620:	17,867

## WATERSHED PROBLEMS AND ACTIVITIES

Bexar County lies within the drainage pattern of two major river basins, the San Antonio on the east and the Nueces on the west. The county is further divided into 15 major watersheds. Four of these flow into the Nueces River Basin while the remaining eleven drain into the San Antonio River Basin.

Four of the major watersheds are located wholly within Bexar County. The other eleven watersheds have only a part of their drainage areas located within the county. These major watersheds are further divided by smaller sub-watersheds, however, for the purpose of the Inventory only the major watersheds were defined and studied.

These studies prepared by the Soil Conservation Service and the Conservation Needs Inventory Committee have revealed that there are a variety of problems existing within the individual watersheds.

### Flood Prevention

29,483 acres of agricultural land on 2,755 farms and ranches have the problem of floodwater and sediment damage.

3,850 acres of urban land are susceptible to floodwater and sediment damage.

975 acres of critical areas along stream courses need protection from erosion damage.

### Agricultural Water Management

10,874 acres on 250 farms, all of which are within one watershed, have problem of management of water used for agricultural purposes.

8,000 acres of this land need project action to alleviate this problem.

Six of the 15 watersheds comprising 210,000 acres on over 1,100 farms have insufficient and/or poor quality ground water which could be helped through the development of small watershed projects.

### Non-Agricultural Water Management

Five watersheds need additional water for municipal or industrial use because of insufficient and/or poor quality ground water.

Fourteen watersheds need additional recreation and wildlife development that could be furnished by small watershed projects.

Ten watersheds have a water quality problem which could benefit from project action, either for diluting or flushing action upon the streams.

Some of these problems are very localized in nature and of necessity must and should be solved through individual action. Other problems are more complex and will require actions such as are taken through the development and installation of small watershed projects under Public Law 566. Still other problems are too large and complex and small watershed project action was not deemed as the most feasible means to solve these problems. Project action in these watersheds will need further study and possible future action by agencies and organizations charged with flood control in river basins.

An analysis by the Conservation Needs Inventory Committee of the individual watersheds and their problems revealed that eight of the fifteen were not potentially feasible for small watershed project action.

Three of these, the Medina River Watershed, the San Antonio River Watershed, and the Cibolo Creek Watershed were considered as too large and complex for small watershed project action. The remaining five were considered as being in the category of requiring primarily individual action to solve the watershed problems and not feasible for designation as a potential small watershed project.

The remaining seven watersheds delineated within the county were all deemed as feasible for small watershed project action. Three of these, the Martinez Creek Watershed in eastern Bexar County, the Calaveras Creek Watershed in southeastern Bexar County, and the Salado Creek Watershed in northern and northeastern Bexar County have had detailed watershed plans developed.

The Martinez Creek Watershed with six floodwater retarding structures and the Calaveras Creek Watershed with seven floodwater retarding structures have had project action completed prior to this inventory. These two projects now protect 8,388 acres of agricultural land from floodwater and sediment damage. The two projects have also provided recreational development, fish and wildlife development, and a degree of water quality control, although the need still exists for agricultural, municipal and industrial water supplies in the project areas.

The Salado Creek Watershed project is now in the land treatment and land acquisition phase of the program. Construction of 17 floodwater retarding structures is planned to complete the project. This project when completed will protect 5,785 acres of agricultural land and 2,250 acres of urban land from floodwater and sediment damage. It will also furnish recreational development, fish and wildlife development and water quality control.

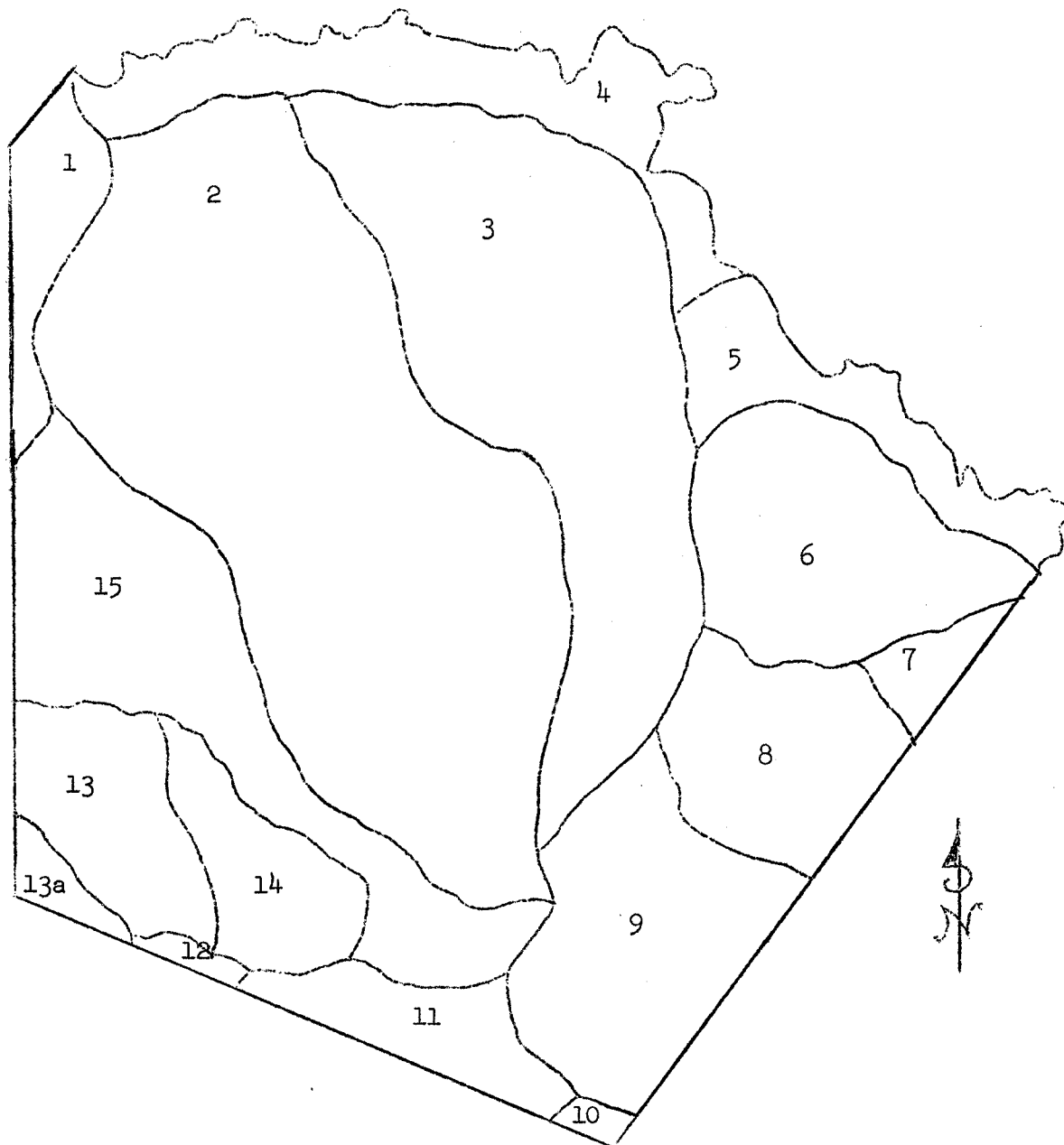
Another three of the seven watersheds which were classified as potentially feasible projects have been reviewed by the Texas State Soil and Water Conservation Board. These three watersheds were approved by the State Board for development of watershed work plans.

One of these, the Elm Creek Watershed in southern Bexar County, was surveyed by the Soil Conservation Service for possible project action. Local interest in this project is good, however, sites for floodwater retarding structures are limited and many difficulties are to be encountered in securing necessary land rights. This project is presently considered inactive.

The other two projects approved by the State Board as feasible for planning are within the Medina Valley Irrigation District (Bexar-Medina-Atascosa Water Control and Improvement District No. 1). Interest in these projects is good and at present they await the development of project plans.

The remaining watershed in Bexar County feasible for project action is the Leon Creek Watershed. This watershed creates problems of floodwater and sediment damage to some 4,000 acres of agricultural land and 1,600 acres of urban land. In addition, project action in this watershed would provide water quality control for this stream plus providing needed recreation, fish and wildlife development in an area which has a growing need for this type of enhancement.

## MAJOR WATERSHEDS - BEXAR COUNTY, TEXAS



- 1 - San Geronimo Creek
- 2 - Leon Creek
- 3 - Salado Creek
- 4 - Upper Cibolo Creek
- 5 - Lower Cibolo Creek
- 6 - Martinez Creek
- 7 - Lower Cibolo Creek
- 8 - Calaveras Creek

- 9 - San Antonio River
- 10 - Unnamed tributary of Nueces River
- 11 - Unnamed tributary of Nueces River
- 12 - Unnamed tributary of Nueces River
- 13 - Medina Valley Irrigation District,  
Medina River Watershed
- 13a - Medina Valley Irrigation District,  
Nueces River Watershed
- 14 - Elm Creek
- 15 - Medio Creek and Medina River

## RECREATION AND WILDLIFE

This inventory did not concern itself directly with the need and/or potential for recreation or wildlife development in the county. Certain assumptions can be made from data utilized in preparing the Inventory.

There is a definite need for the development of additional recreational facilities within the county. The need exists for the development of all types of recreation facilities ranging from golf courses to picnic areas to swimming and wading. The rate of expansion of population within the county coupled with the decreasing acreage of rural land further emphasizes this need.

The protection and development of the wildlife resources of the county are closely tied in with the needs of the land for conservation treatment. That which is good for the land is usually good for wildlife. However, in carrying out certain conservation measures such as brush control, wildlife needs for cover and food must be considered.

A Soil Conservation Service publication, "An Appraisal of Potentials for Outdoor Recreation Development, Bexar County, Texas", offers a complete and detailed appraisal of both the potential and needs for recreation and wildlife in the county. This book is available from the Soil Conservation Service, 655 South Main Avenue, San Antonio, Texas 78204.

APPENDIX A

## PROCEDURES USED IN OBTAINING FIELD DATA AND DETERMINING ESTIMATES

Land Use and Conservation Treatment Needs

The basic data for the updated Inventory of Conservation Needs in Bexar County have been developed from soil surveys.

The system adopted for updating the Inventory involved recording appropriate data in the sample areas being re-examined.

The randomized samples for re-examination were selected by the statistical laboratory at Iowa State University. The sample units were located on a county base map with a scale of 1" equals 2 miles. The map showed the boundaries and symbols of land resource areas. Watershed boundaries and Federally-owned land in the county were also shown.

The standard size of the sample area was 160 acres. The basic sampling rate was 2%. As a standard, the statistical laboratory selected two separate sets of sample units. Each set represented approximately 2% of the county area.

In Bexar County, because of its size and complexity of land use and treatment needs, both sets of sample units were examined and expanded to represent the county.

In updating the Inventory in 1966-67, a different system was used for obtaining more data from the sample areas. The previous Inventory obtained from the sample areas the acreages of the four major land uses by land capability classes and subclasses. In updating the Inventory, conservationists also obtained the conservation treatment needs for cropland and pasture and range. Each sample area was marked with random points (36 points for 160-acre sample area) at which the conservationist inspected the conditions and recorded the data on the Sample Area Record (Form SCS-263) by codes for the land uses and conservation treatment needs.

Land use determinations at each designated point were in terms of the field in which the point fell. The use of the land in the vicinity of the point was considered as well as the area at the point itself. If a point fell on a farm pond of 2 acres or less, the area was considered to be a part of a facility to the land use on which the point fell, such as pasture or forest. If the point fell exactly on a mapping unit boundary, the point was interpreted as being, first, the land immediately above or, second, the land immediately to the right of the line on which the point fell.



Conservationists used a similar process for determining conservation treatment needs. In their determinations, they followed local technical guides, the prevailing agricultural operations on the land, and a practical system of conservation farming.

No overlapping of acreages is shown as to types of treatment required or still needed for the land.

For forest land, treatment needs were estimated for commercial and non-commercial land categories for counties. Conservation treatment needs for other land were estimated based on local knowledge of conditions in the county.

The Department Conservation Needs Inventory Committee developed the policies, procedures, and national economic assumptions under which the Inventory was made. It furnished guidance so the Inventory would be compatible with inventories for other states, and it has reviewed and accepted the data on which this report is based. The State Conservation Needs Inventory Committee acted in a similar capacity with the County Conservation Needs Inventory Committees.

A County Conservation Needs Inventory Committee with agency representation similar to that of the State Needs Committee developed the Inventory for each county. After review and acceptance, data from county inventories were combined to form the State Inventory.

#### Watershed Projects Inventory

The revision of the Watershed Projects Inventory drew heavily on experience gained through several years of operation under the PL-566 Watershed Protection and Flood Prevention Program. Insofar as possible, information was collected in conjunction with river basin investigations, updating the land use and treatment needs phase of the Inventory, and other studies as appropriate. Pertinent data within and outside the Department were considered. No special detailed surveys were made.

The basic reference for all watershed delineations is the "Atlas of River Basins of the United States" prepared by SCS in June 1963. Under Soil Conservation Service leadership, the State Soil and Water Conservation Needs Committee delineated the watersheds and determined potential feasibility for project development by guidelines used to appraise physical and economic feasibility of watershed applications received under PL-566.

The State Committee also counseled with and reviewed the work of the County Committees.

County Needs Committees with local knowledge and experience estimated the extent of watershed problems, and the needs for agricultural and nonagricultural water development.

## APPENDIX B

## GLOSSARY OF TERMS USED IN CONSERVATION NEEDS INVENTORY REPORT

Cropland - land used for a tillage rotation of field crops, as rotation between hay and pasture, hayland, orchards, vineyards and all land formerly used for these crops that has not been idle more than three years.

Other Cropland - land that was formerly used for crop production which has been idle for more than three years and has not been purposely converted to another use. Weeds and annual grasses constitute the primary vegetative cover.

Pasture - lands producing forage plants, principally introduced species for animal consumption, and which require in addition to grazing management one or more cultural practices such as mowing, fertilizing or reestablishment.

Range - land on which the natural potential (climax) plant cover is composed principally of native grasses, forbs and shrubs that are valuable for forage. This land will usually contain shade trees and other scattered trees with less than 10% canopy cover, but may have been invaded by brush species such as mesquite so that more than 10% cover presently exists. Other than brush control, management is primarily achieved by regulating the intensity of grazing and season of use.

Forest Land - native grassland with more than 10% cover of forest type trees of any size that are capable of producing timber or other wood products. In Bexar County this includes native grassland with a cover of trees such as oak and juniper (cedar), plus bottomlands which normally have a dense cover of hardwoods and steep hillsides that are normally covered by juniper and oak. Management is primarily achieved through brush control and regulation of intensity of grazing and season of use.

Forest Land, Grazed - see Forest Land

Other Land - Non-federal rural land which is not classified as cropland, pasture, range, forest or urban and built-up. It includes farmsteads, farm roads, feed lots and service areas on farms, and rural non-farm residences and investment tracts which are not a part of a farm.

Urban and Built-Up Land - areas of more than 10 acres--cities, industrial areas, housing developments, railroads and railroad yards, cemeteries, golf courses, shooting ranges, institutional sites, county and state roads and highways.

Water Areas - the acreage in ponds and lakes of less than 40 acres in size and streams less than 1/8 mile wide.

Non-Inventory Acres - acreage of federal land, urban and built-up land and water areas more than 40 acres in size and streams over 1/8 mile wide.

Inventory Acres - County acreage after the deduction of federal land, urban and built-up land and water areas.

## APPENDIX C

## LAND CAPABILITY CLASSIFICATION SYSTEM

The capability classification is a grouping that shows, in a general way, how suitable soils are for most kinds of farming. It is a practical grouping based on limitations of the soils, the risk of damage when they are used, and the way they respond to treatment.

In this system all the kinds of soil are grouped at three levels: the capability class, the subclass, and the unit. The eight capability classes in the broadest grouping are designated by numerals 1 through 8. In class 1 are the soils that have few limitations, the widest range of use, and the least risk of damage when they are used. The soils in the other classes have progressively greater natural limitations. In class 8 are soils and landforms so rough, shallow, or otherwise limited that they do not produce worthwhile yields of crops, forage, or wood products.

The subclasses indicate major kinds of limitations within the classes. Within most of the classes there can be up to four subclasses. The subclass is indicated by adding a letter, E, W, S or C to the class numeral, for example, 2E. The letter E shows that the main limitation is risk of erosion unless close-growing plant cover is maintained; W means that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); S shows that the soil is limited mainly because it is shallow, droughty, or stony; and C, used in only some parts of the country, indicates that the chief limitation is climate that is too cold or too dry.

In class 1 there are no subclasses, because the soils of this class have few or no limitations. Class 5 can contain, at the most, only subclasses W, S, and C, because the soils in it are subject to little or no erosion but have other limitations that restrict their use largely to pasture, range, woodland, or wildlife.

Within the subclasses are the capability units, groups of soils enough alike to be suited to the same crops and pasture plants, to require similar management, and to have similar productivity and other responses to management. Thus, the capability unit is a convenient grouping for making many statements about management of soils. Capability units are generally identified by numbers assigned locally, for example, 2E-1 or 3E-2.

Soils are classified in capability classes, subclasses, and units in accordance with the degree and kind of their permanent limitations, but without consideration of major and generally expensive landforming that would change the slope, depth, or other characteristics of the soil, and without consideration of possible but unlikely major reclamation projects.

A complete and detailed explanation of the land capability classification system can be found in the Soil Survey for Bexar County available from the Soil Conservation Service, 655 South Main Avenue, San Antonio, Texas 78204.

## APPENDIX D

## LAND RESOURCE AREA DESCRIPTIONS

Major land resource areas consist of geographically associated land resource units. These land resource units are areas of land that are characterized by particular patterns of soil, climate, water resources, land use and type of farming.

Bexar County is divided into three land resource areas, as shown on the land resource area map.

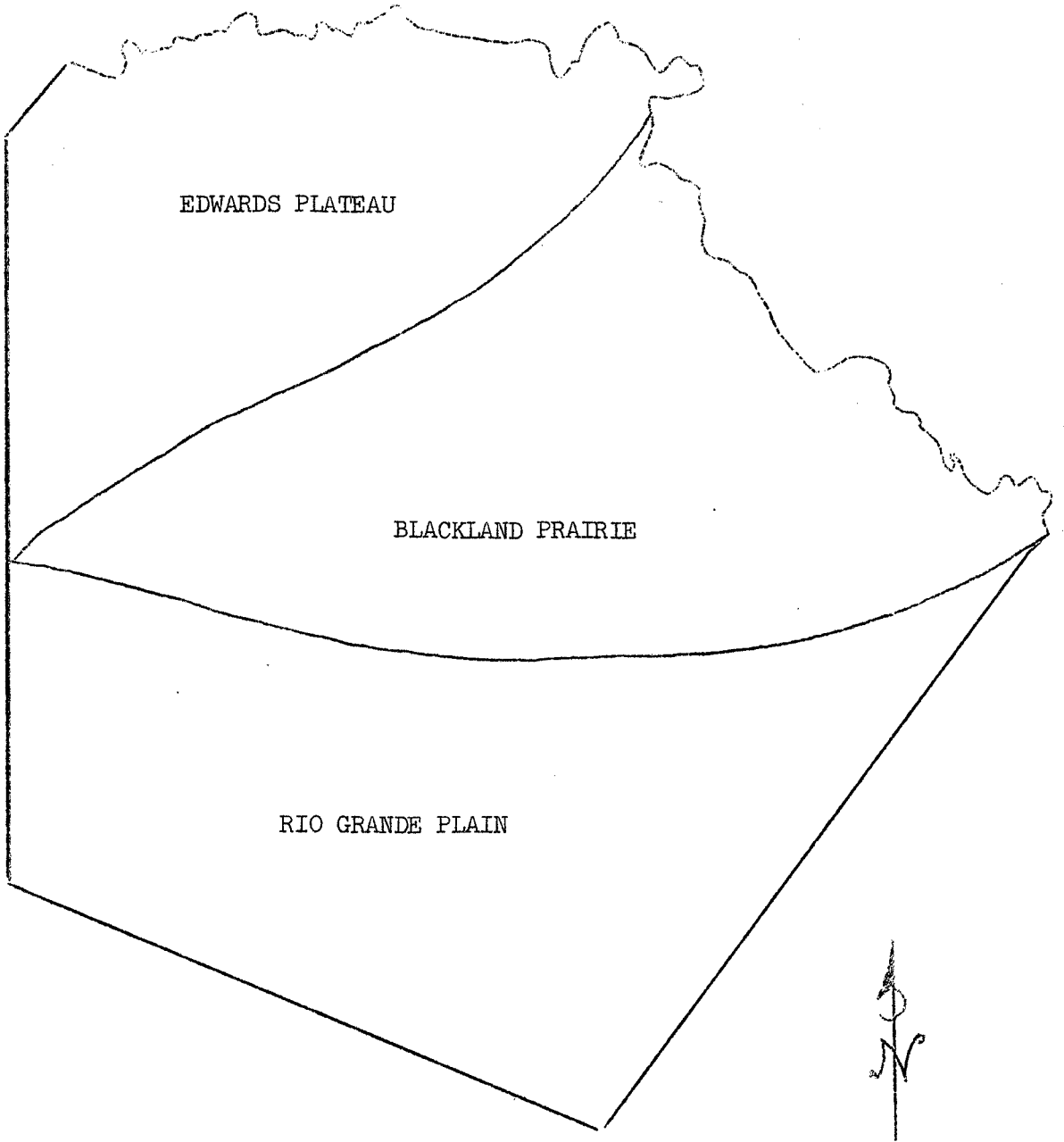
The Edwards Plateau Land Resource Area occupies the northwestern one-third of the county. This area is a broad dissected limestone plateau that has gently undulating divides and broad valleys. Valley sides are steeply sloping to rolling or hilly. Soils of the area include very shallow soils underlain by hard limestone, deeper soils of the nearly level uplands and valleys, and alluvial soils along the narrow flood plains. Nearly all of the land is used for rangeland and is grazed primarily by cattle with a few sheep and goats. This area contains a heavy concentration of whitetail deer. Only small areas are farmed, and these are usually planted to small grain and forage sorghums.

The Blackland Prairie Land Resource Area occupies the central and northeastern one-third of the county. This area is an undulating to gently rolling dissected plain with gentle slopes that merge into narrow valleys. Dominant soils of the area are dark, heavy clays underlain by marls, soft limestone and highly calcareous clays. Alluvial soils occur along the flood plains of the larger streams of the area. Nearly all of the land in this area is used for cropland with grain sorghum being the major cash crop. Small grain and forage sorghums also occupy a sizeable acreage. The present trend is toward a decrease in cropland and an increase in improved pasture, especially on the more sloping and eroded soils.

The Rio Grande Plain Land Resource Area occupies the southern one-third of the county. This area is a nearly level to gently undulating plain. It has few valleys and these are widely spaced and narrow. There are a wide range of soils in this area ranging from dark clayey soils through the reddish sandy loams and loamy sands to the sandy soils. Alluvial soils occur along the narrow flood plains.

Use of the land in this area is about evenly divided between cropland and grazing land. Grain sorghums and peanuts are among the principal cash crops. This area also has considerable acreage of vegetable production. The grassland is grazed primarily by cattle and the acreage of improved pasture for grazing is steadily increasing.

LAND RESOURCE AREA MAP - BEXAR COUNTY, TEXAS



JUN 21 1978

TEXAS DEPOSITORY  
ACADEMIC LIBRARY  
ST. MARY'S UNIVERSITY  
SAN ANTONIO, TEXAS

ST. MARY'S UNIVERSITY LIBRARY