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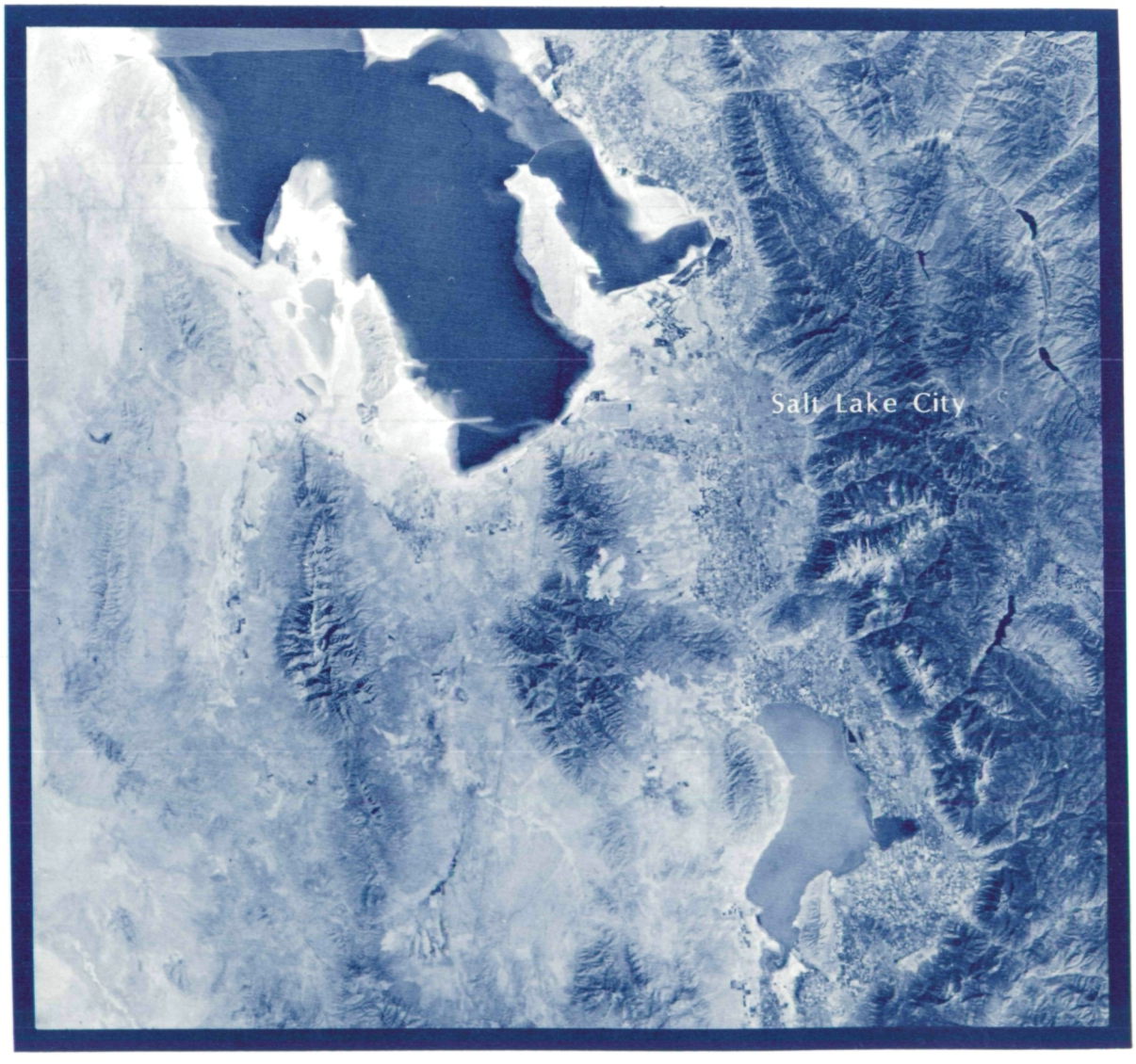

UNIVERSITY OF UTAH RESEARCH INSTITUTE

Salt Lake City

LAND USE INVENTORY OF SALT LAKE COUNTY, UTAH
FROM COLOR INFRARED AERIAL PHOTOGRAPHY
1982

CRSC REPORT 83-2

By

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INTRODUCTION

Salt Lake County, Utah's major population center, continues to experience rapid urban growth. The impacts of urbanization on land use patterns and natural resources in the county are of particular interest to both state and local policy makers and planners. The effects of urban development on a dwindling agricultural land base and water resources must be assessed to allow a rational basis for future water allocation and land use planning.

OBJECTIVES AND PURPOSES

The primary objective of the project is to prepare land use maps of Salt Lake County that will be useful in land and water planning. The maps need to accurately depict at an appropriate scale the "water-related" land use/land cover types of the county in a readily usable form. It was determined that transparent overlays to U.S. Geological Survey topographic quadrangles would provide both an adequate and uniform map scale base. Once the land cover categories were decided, the interpretation would take place from color infrared (CIR) photography, and the results would be tabulated at the quadrangle and township level.

It is anticipated that the information acquired will be valuable to a variety of users. The local Soil Conservation District and municipalities may use the maps and tables as a basis for developing land use policies. The Utah Division of Water Resources will use the data in analyzing water use patterns and future needs; land use data are used in updating hydrologic inventories and for operating basin hydrologic models. County and city planners may utilize the updated maps for a variety of planning purposes. A number of other state and federal agencies and private land owners will benefit from the availability of accurate maps

of current land use. These maps will provide a basis for assessing recent urbanization trends by allowing comparisons with land use studies previously made. Finally, the maps will be used as a form of "ground truth" to calibrate Landsat digital mapping studies currently underway.

STUDY AREA

The project area includes all of Salt Lake County. Figure 1 shows the county and the 23 U.S.G.S. quadrangles used as the mapping base for the land use overlays.

METHODS

High-altitude color infrared (CIR) photography was utilized as the primary medium for land cover interpretations and delineations. CIR photography has been shown in previous studies to be an effective tool for preparing quadrangle overlays of agriculture land use and wetlands (Ridd, et al. 1980; Jaynes, et al. 1981; Jaynes and Willie 1982).

CIR photography from three recent dates was used in the project. Because of its large scale (nominally 1:30,000) and high color quality, CIR photography flown on August 1, 1979 was the most useful. Photography from June 29, 1981 and June 28, 1982 allowed the means to update the 1979 photography. However, the 1981 and 1982 photography are of smaller scale (1:65,000) and lower color quality, especially the 1982 set. The combined use of all three dates of photography, coupled with considerable field observation, permitted fairly accurate and current land use interpretation and mapping.

The first stage of map production was to determine the categories of land use/land cover and the mapping unit detail. This was influenced by a set of priorities established at the outset of the study. The highest

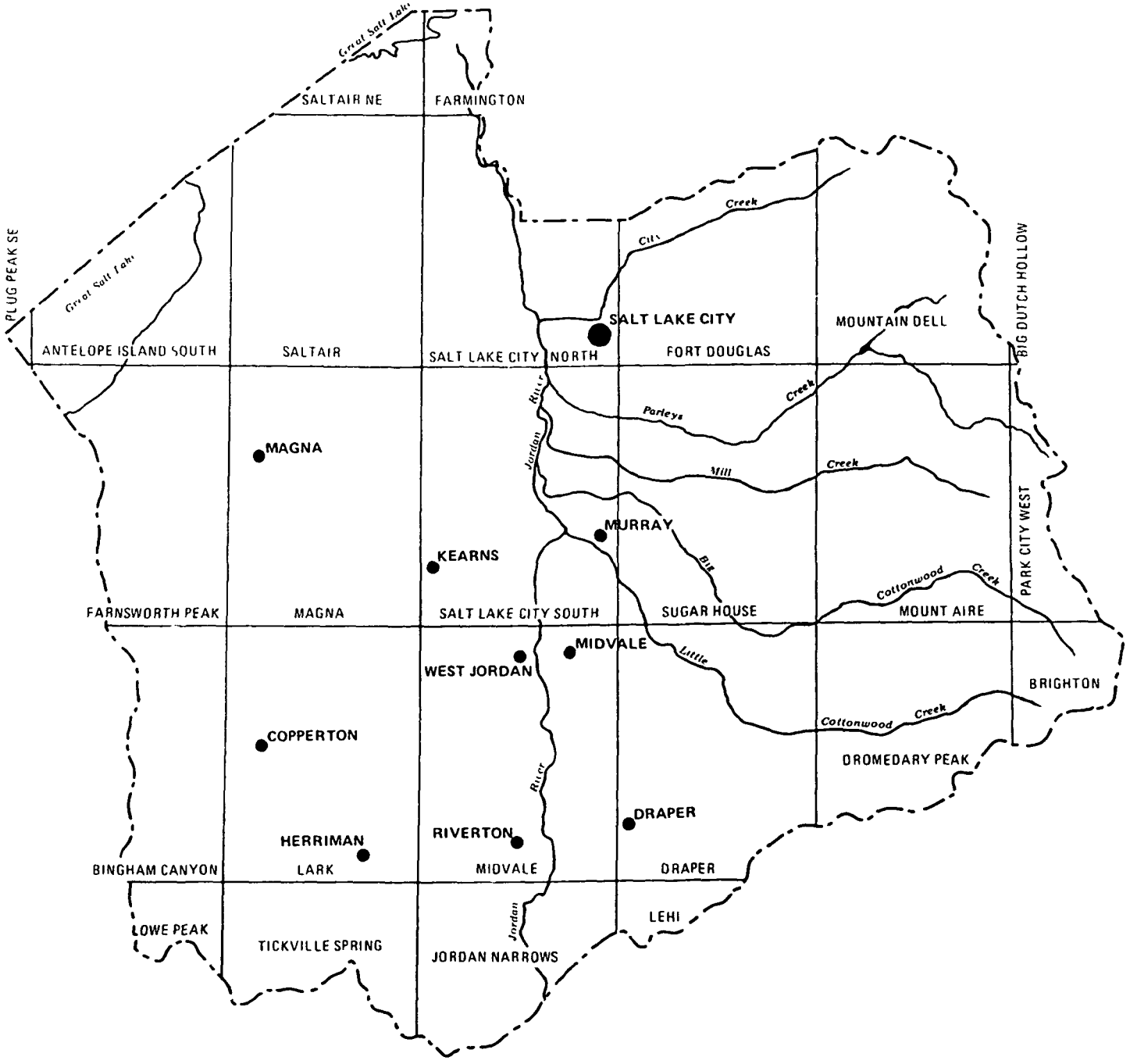

Figure 1. Salt Lake County showing 1:24,000 scale U.S.G.S. quadrangles.

level of interpretive detail was given to the land use categories found in the agricultural or urbanized portions of the county; these areas are of primary interest with regard to the consumptive use of water from surface streams and wells. A slightly lower level of mapping detail was given to wetland environments; areas to which water is not purposely diverted by man but which have a high consumptive rate of water use. The final and lowest priority for interpretive and mapping detail was assigned to upland/mountain areas. Decisions of categories and mapping unit size were made in concert with the Division of Water Resources personnel. Figure 2 shows the final categories and legend. Appendix A provides operational definitions for the categories.

Photos were interpreted on the basis of color, tone, texture, and pattern, together with features of the topographic, hydrologic, and ecological context. Several trips to the project area were made to field check draft maps. In the agricultural environment, map units were guided by field boundries so that whole fields were classified as a unit, despite whatever spatial variations exist within fields. In the urban areas, logical geometric chunks were delineated, again allowing for some internal variation per map unit. In the undeveloped areas and mountains, irregular polygons were delineated according to photo properties and field context.

With the interpretation criteria established, the next stage was to delineate aerial photograph mapping units at the final map scale (1:24,000) to correct for photographic displacement and to register interpretations with the standard 7½ minute U.S.G.S. quadrangle base map. This step was accomplished, for most of the quadrangles in the county, through the use of U.S.G.S. orthophoto quadrangles. Where orthophoto quadrangles are not

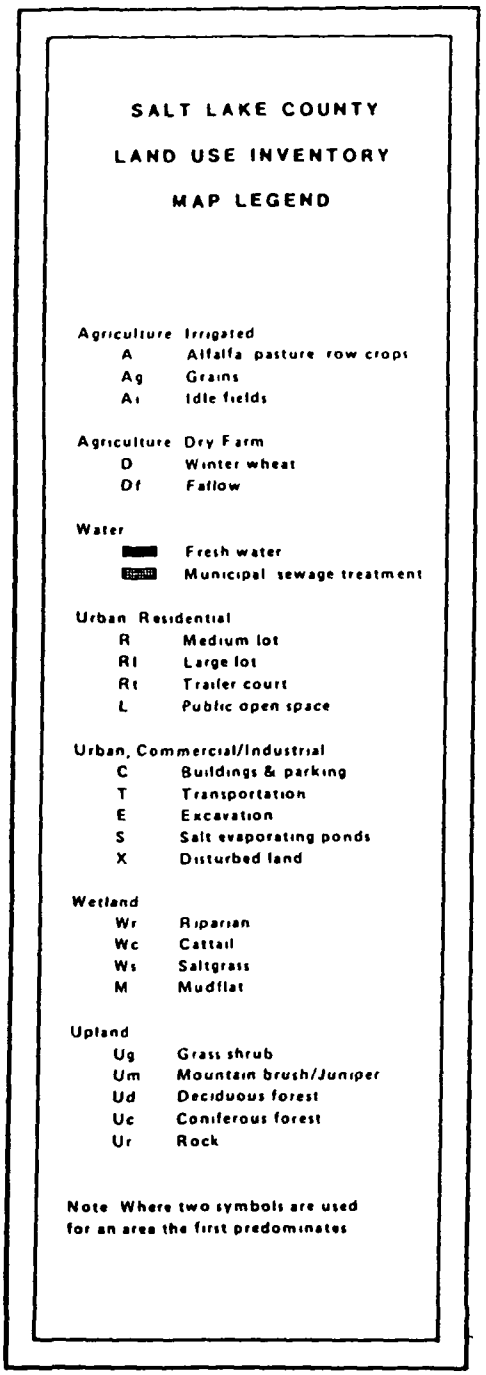

Figure 2. Categories of land use/land cover used in the final map overlays. (See Appendix A for legend explanation)

available, the mapping was assisted by the use of a K&E Kargl cartographic projector. The projector is basically an enlarging light table which allows the user to project a photograph onto a base map to make interpretations and spatial adjustments. The mapping units were then labeled with interpretations of land cover. The minimum mapping unit size was approximately two acres, with the exception of open water which was mapped when surface area was at least 0.5 acre.

RESULTS AND DISCUSSION

The primary final products are the 23 clear overlays which correspond to the 1:24,000 scale quadrangles shown in Figure 1. Each overlay may be registered to the border lines of the corresponding U.S.G.S. quadrangle for direct reading. Figure 3 displays a reduced copy of the Midvale quadrangle overlay and legend. Figure 4 is a representative portion of the overlay at full scale.

An underlying guideline used in selecting land use/land cover categories was homogeneity in characteristics of consumptive water use. As noted earlier, despite variations of "greenness" in individual fields (due to uneven irrigation), the entire field was classed as a unit. Where adjacent fields were of the same category, the boundary between fields was not drawn in order to minimize clutter on the overlay. Thus, some of the large polygons on the overlay may represent several dozen individually interpreted, but contiguous fields of the same category. All fields of two acres or more within all polygons were independently examined and categorized. Thus, for example, alfalfa, pasture, and raw crops were grouped together under the symbol "A," on the assumption they generally require equal amounts of water. The wetland categories are consistent

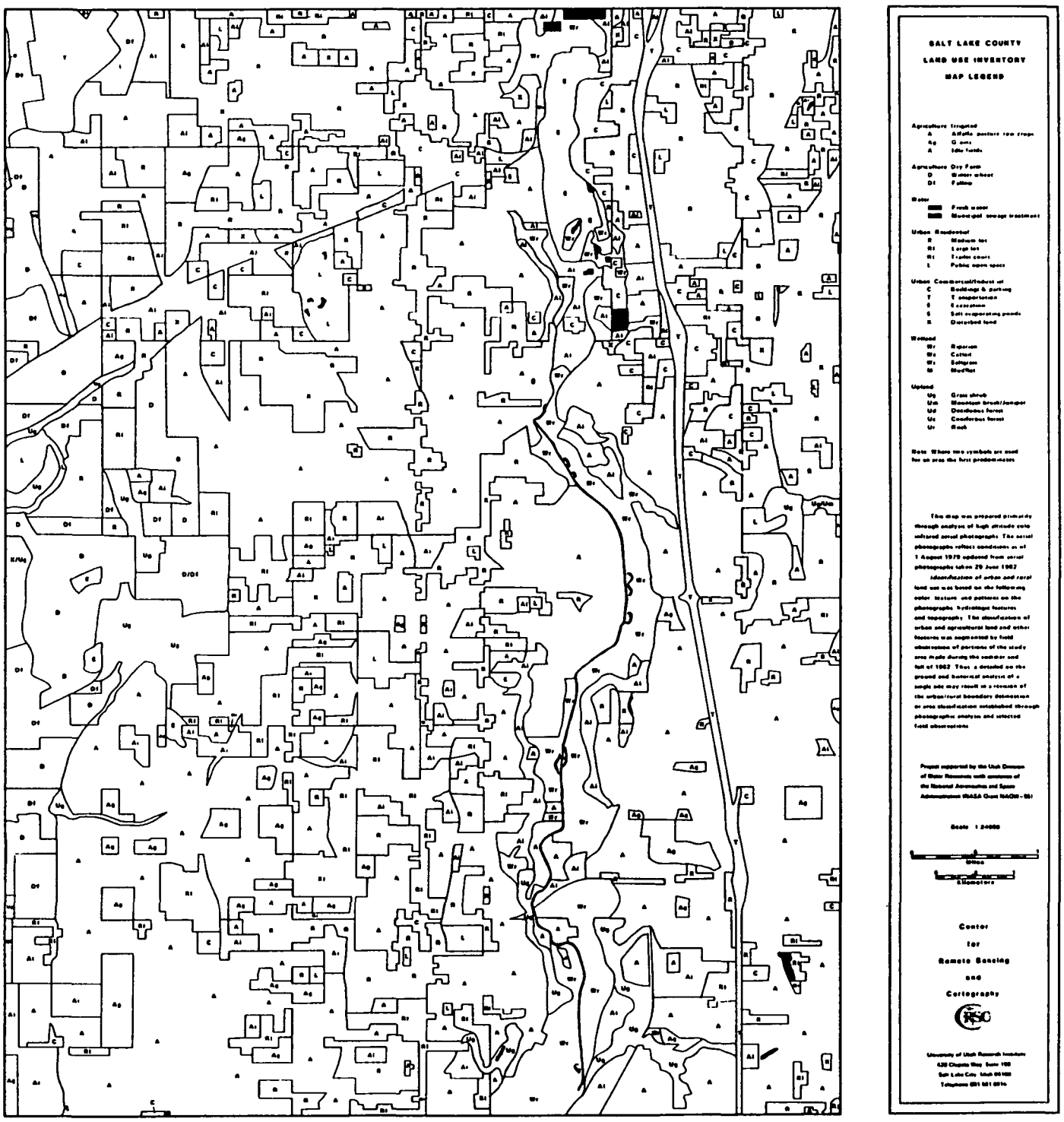

Figure 3. Reduced copy of one of the 23 quadrangles.

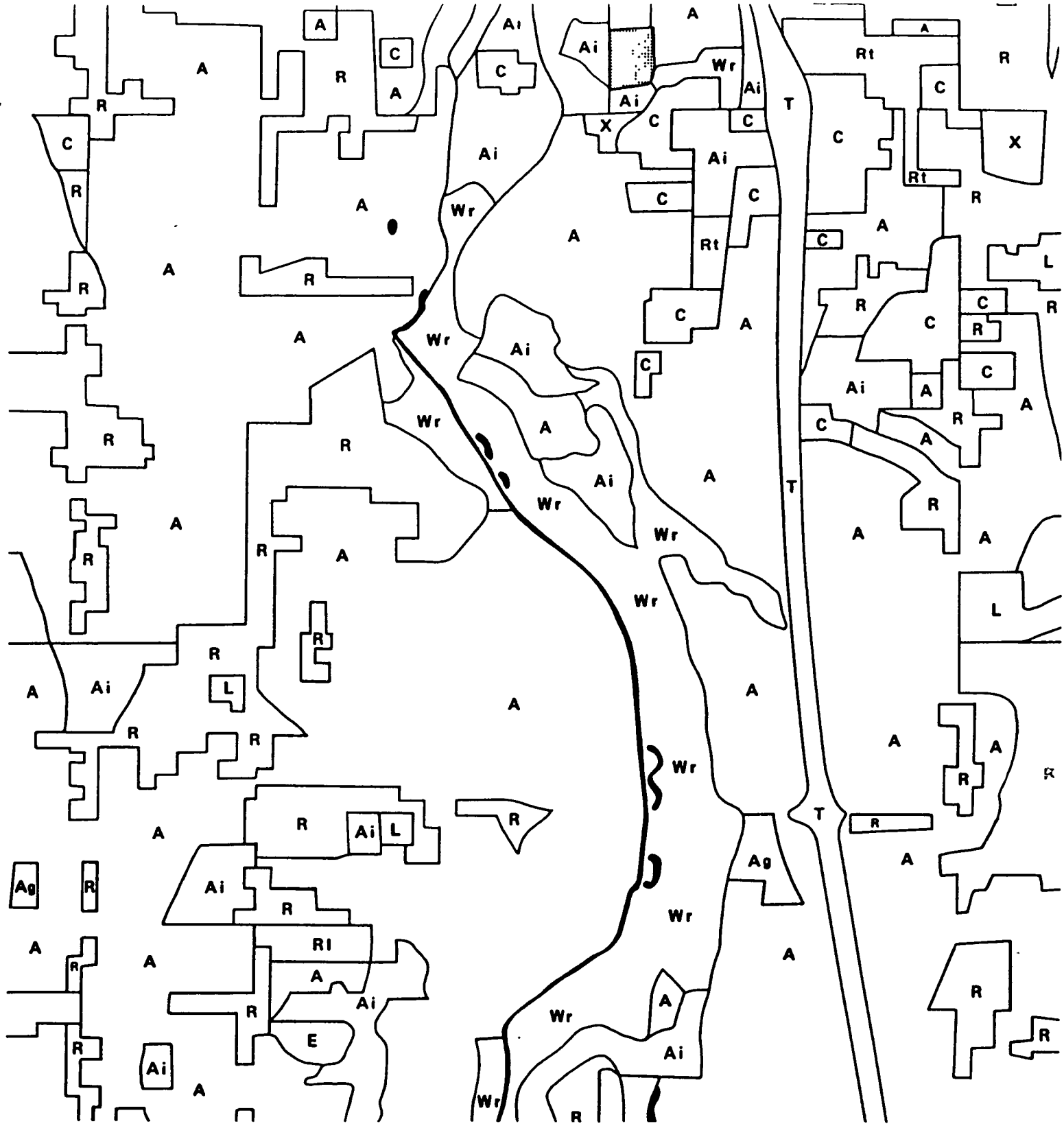

Figure 4. Full-scale sample of overlay from the Midvale quadrangle.

with those of a previous study (Jaynes and Willie 1982) and could be adapted to correspond to the classification system used by the U.S. Fish and Wildlife Service (Cowardin, et al. 1979).

In most cases, land use categories identified on the larger scale 1979 photography could be verified on the 1981 and 1982 photography. A notable exception is the mapping of "Ag" or grain crops; this category could be easily detected on the 1979 photography (taken in early August when fields were being harvested and at large scale) but was confused with alfalfa and other crops on the late June photographs taken in 1981 and 1982. Consequently, areas were mapped as grain crops if they appeared as such in 1979, and continued to appear irrigated in 1981 and 1982. The map user should be aware that the accuracy of this map class depends upon the assumption that wheat fields were not converted to other crop types in 1981 or 1982.

Acreages per land use/cover category were determined by using a computer digitizer. They were tabulated by quadrangle and further subdivided by township within each quadrangle. All acreages were double checked, both by individual polygons and in the aggregate to assure accuracy. Figure 5 depicts the townships and Appendix B lists the tabulations. Table 1 shows the totals of land use/cover type west and east of the Jordan River. It is believed by the investigating team that this inventory, both in its map and acreage table forms, is as accurate as can be done with all available photography.

FOLLOW-ON

Because of the dynamic nature of land use conversion along the Wasatch Front, and the cost of making reliable land use maps for planning purposes,

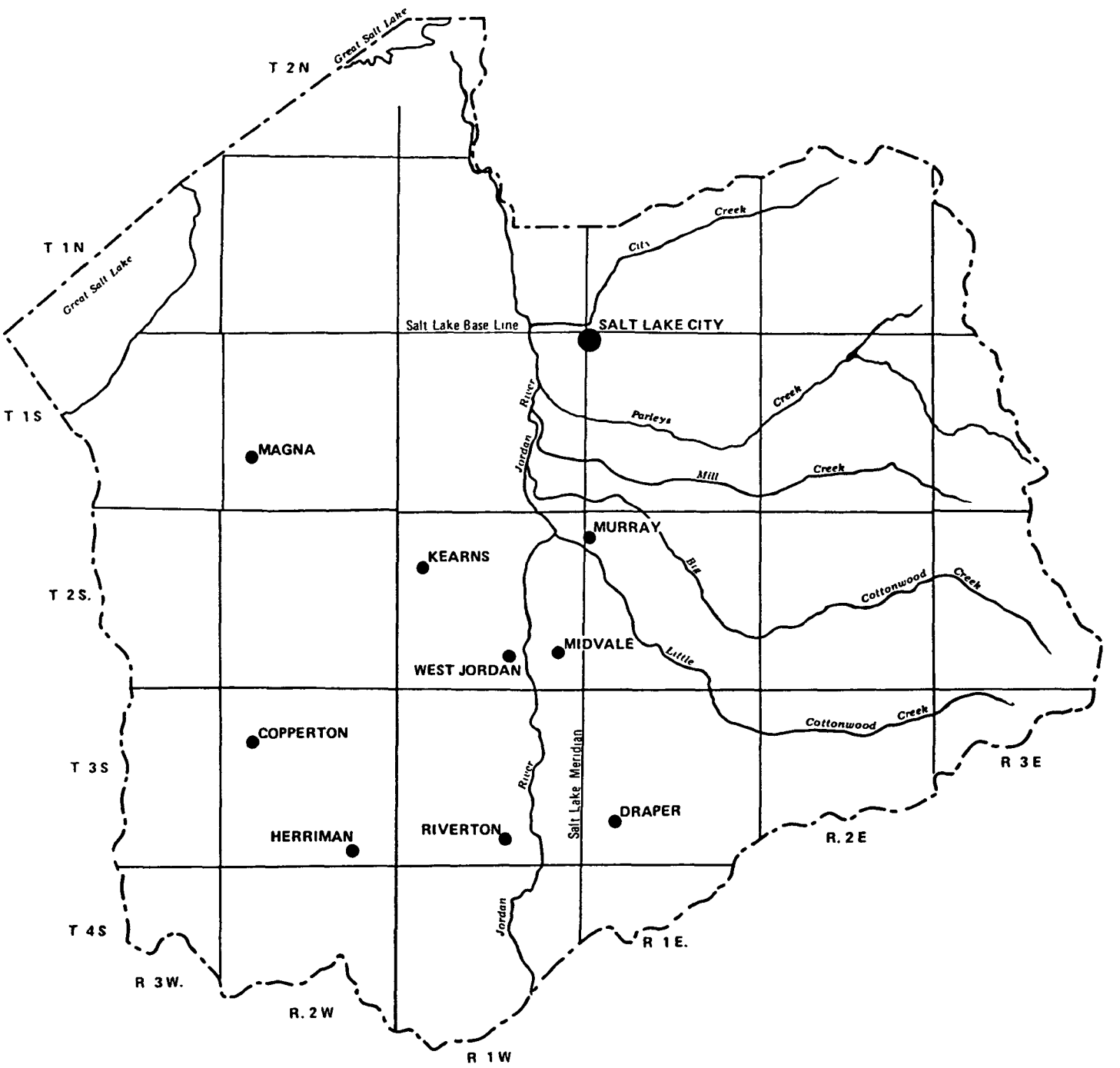

Figure 5. Salt Lake County with townships outlined.

Table 1. Acreage per land use type in Salt Lake County, 1982.

	West of Jordon River	East of Jordon River	Total
Agriculture, Irrigated			
A	20,950.4	9,088.2	30,038.6
Ag	1,493.5	325.3	1,818.8
Ai	12,437.7	6,862.4	19,300.1
Agriculture, Dry Farm			
D	12,082.0		12,082.0
Df	15,309.1		15,309.1
Urban, Residential			
R	19,242.6	36,914.2	56,156.8
Rl	2,153.4	2,648.3	4,801.7
Rt	618.0	198.9	816.9
L	1,859.2	3,488.6	5,347.8
Urban, Commercial/Industrial			
C	8,045.3	10,912.9	18,958.2
T	5,133.5	3,278.0	8,411.5
E	16,114.9	1,858.9	17,973.8
S	1,763.2		1,763.2
X	2,643.1	1,530.4	4,173.5
X/Ug	181.3		181.3
Wetland			
Wr	1,288.5	1,597.1	2,885.6
Wc	4,877.5		4,877.5
Ws	21,838.1		21,838.1
M	16,754.8		16,754.8
M/Wc	387.9		387.9
M/Ws	2,645.2		2,645.2
Wc/M	17.6		17.6
Ws/M	5,197.6		5,197.6
Wc/Ws	317.5		317.5
Ws/Wc	189.9		189.9
Upland			
Ug	34,265.7	10,149.4	44,415.1
Um		35,874.2	35,874.2
Ud		59,976.9	59,976.9
Uc	4,440.0	36,415.0	40,855.0
Ur		13,410.0	13,410.0
Ug/Rl	344.5		344.5
Ug/Um		2,237.5	2,237.5
Um/Uc	25,129.1		25,129.1
Ud/Uc	15,064.2	692.0	15,756.2
Uc/Ud		4,073.6	4,073.6
Water	8,319.2	392.5	8,711.7
Sewage Treatment	26.6	242.4	269.0
G.S.L.	2,646.2		2,646.2
TOTALS	263,777.3	242,166.7	505,944.0

an efficient and cost-effective procedure is needed to map and to update the changing patterns of land use. A satellite/computer system would be ideal if sufficiently sensitive to the small field patterns involved in land conversion. The Center for Remote Sensing and Cartography (CRSC) is currently engaged in a research project to examine this possibility. Many algorithms of classification of land use and detection of changes in land use are being evaluated. If successful, the procedure can be applied along the Wasatch Front and elsewhere, as urban enroachment on farmland and open space continue.

Results of the study in automation will be reported to the Division of Water Resources and in national professional meetings this year.

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APPENDIX A. Explanation of land use/land cover categories identified in map legend.

AGRICULTURE	
Irrigated	
A	Alfalfa hay, this category may also include irrigated pasture
	Other crops, corn and truck crops
Ag	Grains, mostly wheat and barley
Ai	Idle, this category includes lots or fields which may have been irrigated in the past
Dry Farm	
D	Cropped, usually with winter wheat
Df	Fallow
WATER	
Solid black	Open water, either ponds and reservoirs or in large canals and rivers
Great Salt Lake	Saltwater of the Great Salt Lake
Zipatone	Municipal, sewage treatment
URBAN	
Residential	
R	Medium lot size (¼ - ½ acre), impervious areas make up ca. 35-40% of surface cover, remainder is irrigated lawn, garden, etc. Mostly single-family homes, but also includes churches, schools, apartments, condominiums, etc.
Rt	Trailer court, small lot size, single-family trailer parks, impervious cover greater than 50%.
Rl	Large lot size (often over one acre), impervious cover usually less than 20%, remainder is irrigated vegetation.
L	Public open space, very little impervious cover (less than 10%), predominately large lawn or otherwise landscaped public or quasi-public areas including parks, cemeteries, golf courses, large schools (i.e., U of U, colleges, etc.)

APPENDIX A. Explanation of land use/land cover categories identified in map legend.

Commercial/Industrial and other

C	Buildings and parking areas, may include some landscaping but impervious areas are greater than 75%
T	Transportation corridor/facility, includes major highways, railroad yards, airports, etc.
E	Excavation, includes various mining activities such as gravel pits, quarries, landfill, tailings, etc.
S	Salt evaporating ponds
X	Disturbed - incipient residential - comm. and other

WETLAND

Wr	Riparian, subirrigated grasses and grass-like plants, mostly comprised of areas adjacent to the Jordan River, primarily used for pasture
Wc	Cattail, also may include bulrush
Ws	Saltgrass, also includes some other grasses, as well as some salicornia and other forbs
M	Mudflat areas, seasonally inundated, most often with saline water

WILDLAND (Upland/Mountain)

Ug	Grass-shrub, generally bunchgrasses mixed with sagebrush
Um	Mountain brush or juniper, primarily oakbrush and maple on the east side of the valley, juniper and oakbrush on the west
Ud	Deciduous forest, mostly aspen.
Uc	Coniferous forest, mostly spruce-fir
Ur	Rock

Note: Should avoid complexes, but, when necessary, place symbol of predominate type first followed by a "/" and second symbol.

APPENDIX B. Acreage per land use type in Salt Lake County for 1982 by quadrangle and township.

Map Symbol	Antelope Island So.		Bingham Canyon			Brighton		Draper		
	T1N R3W	T1S R3W	T2S R3W	T3S R3W	T4S R3W	T2S R3E	T3S R3E	T2S R1E	T3S R1E	T2-3S R2E
A								443.7	1,338.3	
Ag								18.4	60.6	
Ai								649.0	2,819.0	
D										
Df										
R						367.5		3,630.2	5,526.3	
R1								253.1	240.1	
Rt								19.2		
L								166.3	352.5	
C				47.6		11.6		158.3	274.6	
T	120.0									
E	114.8			4,776.0	511.0			125.0	130.3	
S	891.0									
X								174.3	655.4	
X/Ug										
Wr										
Wc										
Ws	171.2	169.7								
M	843.3	2,849.5								
M/Wc										
M/Ws	287.4	5.2								
Wc/M										
Ws/M	57.8	510.3								
Wc/Ws										
Ws/Wc										
Ug				302.5	15.2			824.7	899.9	
Um								398.7	1,292.6	627.0
Ud						640.2	357.0	30.5	2,795.0	1,581.4
Uc						3,693.0	1,969.0		1,583.3	3,113.2
Ur						217.0	315.0			742.3
Ug/R1										
Ug/Um								77.1	1,922.8	
Um/Uc			751.0	909.4	10.4					
Ud/Uc			3,289.0	5,159.0	486.2					
Uc/Ud										
Water		132.4		20.1		42.4	41.7		23.4	
Sew.T.										
G.S.L.										
Totals	2,485.5	3,667.1	4,040.0	11,214.6	1,022.8	4,971.7	2,682.7	6,968.5	19,914.1	6,063.9

APPENDIX B. Acreage per land use type in Salt Lake County for 1982 by quadrangle and township.

Map Symbol	Draper (cont)	Dromedary Peak				Farmington	Farsworth Peak		Fort Douglas	
	T4S R1E	T2S R2E	T2S R3E	T3S R2E	T3S R3E	T2N R1W	T1S R3W	T2S R3W	T1N R1E	T1N R2E
A	107.8						104.0			
Ag	28.0									
Ai	56.4									
D										
Df										
R	101.8								935.0	
R1	29.6									29.9
Rt										
L									257.8	
C	6.1			20.8	145.0		509.3		60.3	
T							872.6			
E							2,846.4			
S										
X							17.4		5.8	
X/Ug										
Wr										
Wc						400.4				
Ws						726.5	882.1			
M						891.8	380.2			
M/Wc						155.8				
M/Ws						35.1	305.7			
Wc/M										
Ws/M						31.0	47.2			
Wc/Ws						68.3				
Ws/Wc						115.9				
Ug	365.0						6,029.0	586.0	793.5	
Um	400.0	98.2							6,738.6	1,067.4
Ud	459.0	1,636.4	241.4	2,801.0	645.0				5,051.0	3,379.3
Uc		1,094.7	1,232.2	6,282.3	942.3				961.0	524.0
Ur		3,480.4	1,225.2	4,218.2	770.0					
Ug/Rl										
Ug/Um										
Um/Uc							324.0	5,543.0		
Ud/Uc								3,727.0		
Uc/Ud										
Water	0.6	22.3		34.5		1,803.4	108.4		22.3	
Sew.T.							5.4			
G.S.L.						111.0	1,961.0			
Totals	1,554.3	6,332.0	2,698.8	13,356.8	2,502.3	4,339.2	14,392.7	9,856.0	14,825.3	5,000.6

APPENDIX B. Acreage per land use type in Salt Lake County for 1982 by quadrangle and township.

Map Symbol	Fort Douglas (cont)		Jordan Narrows			Lark				
	T1S R1E	T1S R2E	T4-5S R1W (west)	T4S R1W (east)	T4S R1E	T2S R3W	T2S R2W	T2S R1W	T3S R3W	T3S R2W
A			2,297.6	1,036.5	122.0		24.5			535.9
Ag			12.6							102.9
Ai	73.1		428.4	522.4	8.1					384.0
D			146.1				1,641.1	213.3		6,337.3
Df			154.1				2,274.0	71.2		6,198.8
R	1,029.9		123.9	23.2	16.3		89.0			237.6
Rl	52.9	32.3	159.4							
Rt										
L	354.4		3.2	31.1						15.8
C	784.3		67.0	98.7	6.1				5.0	437.7
T				83.1	7.3					
E				355.6	27.6		53.8		710.0	2,004.2
S										
X	76.6		52.4	4.0	4.0					12.3
X/Ug										9.4
Wr			288.2	228.8						
Wc										
Ws										
M										
M/Wc										
M/Ws										
Wc/M										
Ws/M										
Wc/Ws										
Ws/Wc										
Ug	211.2		4,984.4	1,679.1	777.4		3,600.9	23.9	90.0	5,819.9
Um	1,659.0	348.0		42.8	74.3					
Ud	177.0	846.0								
Uc			4,440.0							
Ur										
Ug/Rl										50.5
Ug/Um										
Um/Uc						374.0	796.0		446.0	1,114.0
Ud/Uc										
Uc/Ud										
Water	2.7		23.2	9.9						38.0
Sew.T.										
G.S.L.										
Totals	4,421.1	1,226.3	13,180.5	4,115.2	1,043.1	374.0	8,479.3	308.4	1,251.0	23,298.3

APPENDIX B. Acreage per land use type in Salt Lake County for 1982 by quadrangle and township.

Map Symbol	Lark (cont)				Lehi	Lowe Peak	Magna			
	T3S R1W	T4S R3W	T4S R2W	T4S R1W	T4S R1E	T4S R3W	T1S R3W	T1S R2W	T1S R1W	T2S R3W
A	17.9		61.6		23.0			2,521.0	73.3	
Ag	16.7		13.8	66.5				139.1		
Ai	42.9			2.3				2,081.6	474.0	
D	160.3		593.2	15.2				135.3		
Df	310.4		230.8					455.0		
R	27.9							2,883.2	161.2	
Rl								8.9		
Rt								9.1		
L	95.7							192.7	10.7	
C			6.1				108.7	386.7	19.9	
T							49.7	376.3		
E		30.5	4.4			78.9	458.1	2,464.9		
S										
X	40.1						17.5	1,065.6	21.9	
X/Ug	81.4									
Wr										
Wc								80.9		
Ws								3,029.5		
M								1,130.5	15.9	
M/Wc										
M/Ws										
Wc/M										
Ws/M										
Wc/Ws										
Ws/Wc										
Ug	111.2		251.2		694.2		258.0	836.7		
Um					2,766.0					
Ud					204.0					
Uc										
Ur										
Ug/Rl			294.0							
Ug/Um										
Um/Uc		79.5	689.0			1,638.0	78.4	34.9		665.0
Ud/Uc						2,403.0				
Uc/Ud										
Water	6.2							165.3	2.3	
Sew.T.										
G.S.L.										
Totals	910 7	110.0	2,144.1	84.0	3,687.2	4,119.9	970.4	17,997.2	779.2	665.0

APPENDIX B. Acreage per land use type in Salt Lake County for 1982 by quadrangle and township.

Map Symbol	Magna (cont)		Midvale							
	T2S R2W	T2S R1W	T2S R1W (west)	T2S R1W (east)	T2S R1E	T3S RTW (west)	T3S R1W (east)	T3S R1E	T4S R1W (west)	T4S R1W (east)
A	21.6	104.5	1,631.3	169.4	200.1	7,615.8	2,512.3	1,608.6	845.1	254.0
Ag		8.1	117.9			602.8	151.0	54.7	54.2	3.7
Ai	6.3	26.5	455.2	100.6	21.3	1,266.0	472.0	39.9	167.8	74.9
D	30.2	1,012.9	175.3			1,248.3				
Df	112.2	3,437.5	227.1			814.7				
R	352.5	1,251.6	1,536.9	763.2	658.1	2,197.1	234.8	995.2	157 0	
Rl			155.6		17.5	1,509.5	40.3	83.8	92.3	
Rt			134.0	7.6			71.5			
L	45.1	9.9	173.4	44.9	7.3	275.1		71.6		
C	1.5	716.8	236.7	349.4	114.3	127.5	249.4	56.6	4.6	
T			302.0	104.0			240.0	33.7		6.0
E		470.7	7.8	318.4		55.2				
S						16.7				
X	78.8	300.2	41.1	17.2	3.9	20.9	6.3	20.7		
X/Ug						90.5				
Wr			152.0	129.3		301.3	789.7	4.3	181.3	29.7
Wc										
Ws										
M										
M/Wc										
M/Ws										
Wc/M										
Ws/M										
Wc/Ws										
Ws/Wc										
Ug		7,131.9	14.2			691.6	143.6	64.1	27.2	84.7
Um										
Ud										
Uc										
Ur										
Ug/Rl										
Ug/Um								22.8		
Um/Uc		807.0								
Ud/Uc										
Uc/Ud										
Water		1.2	2.2	6.4	1.3	5.6	11.2	10.4	7.3	
Sew.T.				24.0			14.3			
G.S.L.										
Totals	648.2	15,278.8	5,362.7	2,034.4	1,023.8	16,838.6	4,936.4	3,066.4	1,536.8	453.0

APPENDIX B. Acreage per land use type in Salt Lake County for 1982 by quadrangle and township.

Map Symbol	Midvale (cont)	Mountain Dell				Mount Aire				Park City West
	T4S R1E	T1N R2E	T1N R3E	T1S R2E	T1S R3E	T1S R2E	T1S R3E	T2S R2E	T2S R3E	T1S R3E
A	206.1									
Ag										
A1	15.7									
D										
Df										
R	29.8									
R1	20.0	136 4				134.0			189.6	36.7
Rt										
L				76.6		91.0				
C				5.6		5.7		1.1		
T	10.0			59.2	22.1	259.3	55.3			
E										
S										
X										
X/Ug										
Wr										
Wc										
Ws										
M										
M/Wc										
M/Ws										
Wc/M										
Ws/M										
Wc/Ws										
Ws/Wc										
Ug										
Um		4,584.0	14.2	3,077.3	636.0	3,253.0	801.0	19.4		
Ud		10,864.4	2,818.9	699.1	975.3	6,446.2	3,277.6	3,679.7	3,013.7	1,282.0
Uc		1,098.0				3,657.1	1,779.6	3,577.5	1,907.6	1,288.2
Ur								1,408.4	7.0	
Ug/R1										
Ug/Um										
Um/Uc										
Ud/Uc		692.0								
Uc/Ud								2,958.6		
Water	2.7	12.4		88.8					2.7	2.4
Sew.T.										
G.S.L.										
Totals	284.3	17,387.2	2,833.1	4,006.6	1,633.4	13,846.3	5,913.5	11,644.7	5,120.6	2,609.3

APPENDIX B. Acreage per land use type in Salt Lake County for 1982 by quadrangle and township.

Map Symbol	Park City West (cont)	Saltair								Saltair NE
	T2S R3E	T1-2N R3W	T2N R2W	T2N R1W	T1N R1W	T2N R2W	T1S R3W	T1S R2W	T1S R1W	T2N R2W
A					9 7	798.5		136.5		
Aq								30.8		
A1					9.9	618.4		191.1	12.6	
D										
Df										
R	170.0					3.5		1.2		
R1								9 8		
Rt										
L										
C	5.4				23.1	325.6		75 2	12 8	
T					8.9	185.0	32.4	205 3	12 1	
E						732.3	23 6	140 5	55.1	
S							143.5	712 0		
X					32.1	23.8				
X/Uq										
Wr										
Wc			554.7	35.5	213.5	2,463.5				710 1
Ws		290.8	761.0	130.9	73.9	9,094 6	21.1	2,110 8	125 8	662.0
M		583.1	1,882.1	28.1		3,500.4	42 2	1,536 9		2,584 4
M/Wc						37.7				
M/Ws		15.9			113.2	458.5				
Wc/M						17.6				
Ws/M		87.2	135.5	6.9	310.2	1,777 9				27.0
Wc/Ws					9.0	240.2				
Ws/Wc					12.9	61.1				
Ug										
Um										
Ud	3,487.0									
Uc	1,241.5									
Ur										
Ug/R1										
Ug/Um										
Um/Uc										
Ud/Uc										
Uc/Ud										
Water	12.8	178.7	1,226.0	47.3	231.1	2,582.2				854.7
Sew.T.										
G.S.L.										574.2
Totals	4,916.7	1,155.7	4,559.3	248.7	1,047.5	22,920.8	262 8	5,150.1	218.4	5,412.4

APPENDIX B. Acreage per land use type in Salt Lake County for 1982 by quadrangle and township.

Map Symbol	Salt Lake City North							Salt Lake City South		
	T2N R1W	T1N R1W (west)	T1N R1W (east)	T1N R1E	T1S R1W (west)	T1S R1W (east)	T1S R1E	T1S R1W (west)	T1S R1W (east)	T1S R1E
A	70.9	1,515.8			171.5			636.4	68 4	
Ag		8.6						183.4		
A1		1,627.2	432.9		346.7			3,829.1	773.4	6.9
D										
Df										
R		428.0	1,475.0	407.1	458.8	385.2	146.0	3,445.6	588.7	1,565.6
R1		50.1								
Rt		55 3			41 5			207.1		5.1
L		84.0	183 1	58.7	22.9	21 8	13 3	409.3	91.4	86.7
C		645 4	1,044 0	122 8	401.0	885.5	552.7	3,497.5	2,479.4	770.0
T		1,526.0	376 3		792.0	188 6		394.0	613.0	26.1
E		3.0	314 6		52.2			307 9	21.9	
S										
X		195.7	95 4		29 3			381.5	189.5	
X/Ug										
Wr								75.2	86 7	
Wc	16.8	402.1								
Ws	792 7	1,653 4			1,142 1					
M	167 1	242.7						76 6		
M/Wc		124 0			70.4					
M/Ws	143 3	1,280.9								
Wc/M										
Ws/M	252 2	1,954 4								
Wc/Ws										
Ws/Wc										
Ug			1,269 9	371.5						
Um			146.4	952.0						
Ud										
Uc										
Ur										
Ug/R1										
Ug/Um										
Um/Uc										
Ud/Uc										
Uc/Ud										
Water	44.6	792.6	16.0	0 5				37.9	3.9	
Sew.T.			69.2					21.2	66.2	
G.S.L.										
Totals	1,487.6	12,589.2	5,422.8	1,912.6	3,528 4	1,481 1	712.0	13,502.7	4,982.5	2,460 4

APPENDIX B. Acreage per land use type in Salt Lake County for 1982 by quadrangle and township.

Map Symbol	Salt Lake City South (cont)			Sugarhouse				Tickville Spring		
	T2S R1W (west)	T2S R1W (east)	T2S R1E	T1S R1E	T1S R2E	T2S R1E	T2S R2E	T4S R3W	T4S R2W	T4S R1W
A	1,750.9	308 8	64.0	19 4		605.8				6.1
Ag	115.7					8.9				20 4
Ai	467 7	285 9	52.4	56 5		402 0				
D	28 5								345.0	46 8
Df	593.0								383.5	
R	5,883 3	1,268 5	1,110.3	8,890.5		6,596 0			4.3	
Rl	167.8		29.8	258.9		1,054.9	8 5			
Rt	171 0	61 1	34 4							
L	521.4	47.0	200 0	1,033.7	6.2	293 2				
C	389.6	734.5	545 5	949.7		475 5				
T	257.2	483.2	52 7	451.0	52.2	154 9				
E	213 6	105 2	12.1		92.8	355.4				
S										
X	226.6	26.1	3 5	56 7		191 0			85.9	
X/Ug										
Ur	290.5	328.6								
Uc										
Us										
M										
M/Wc										
M/Ws										
Wc/M										
Ws/M										
Wc/Ws										
Ws/Wc										
Ug				1,113.6	71 1	785.9			3,081.7	410.2
Um				2,300.0	2,819.0	1,143.6	615 7			
Ud				70.0	700 7	907.6	910.5			
Uc					420.0		50.5			
Ur						208.8	817.7			
Ug/Rl										
Ug/Um				116.2		98 6				
Um/Uc								608.0	10,175.0	86.5
Ud/Uc										
Uc/Ud							1,115.0			
Water	8 5		1 6	4.4		15 2				
Sew T.		68.7								
G.S.L										
Totals	11,085.3	3,717 6	2,106.3	15,320 6	4,162.0	13,297 3	3,517 9	608 0	14,075 4	570.0