

file
San Juan River Basin
#1

MEMORANDUM

April 5, 2006

TO: File
FROM: Patricia Turney, NMISC Staff
SUBJECT: 2005 San Juan River Basin Acreage Inventory

This memorandum summarizes the subject inventory's methodology, collected field data, and analysis. NMISC gratefully acknowledges the assistance of the Navajo Nation in allowing the field data collection efforts to proceed on the Nation's lands.

Inventory Methodology and Collected Field Data

NMISC staff developed cultivated field delineations from U.S. Geological Survey DOQQs from the most recent National Aerial Photography Program photography available, the majority of which was flown in 1996-97. NMISC contractors Garda Stock and Thelma Yazzie collected crop type and irrigation method information for each parcel and indicated boundary changes where appropriate. NMISC staff input all field-collected data into an ArcInfo database. The ArcInfo database and its associated metadata are available from the author.

NMISC contractors and staff identified the following irrigated crops and other acreage in the Basin during the summer of 2005.

Alfalfa	High density single grass
New alfalfa	Low density mixed grass
Turfgrass	Trees, fruit
Grapes	Trees, other
Corn	Sorghum
Wheat	Oats
Garden	Fallow
Misc. field crops	Plowed ground
Pumpkins	Cleared land
Wild native vegetation	

The inventory does not reflect residential yard watering or golf course watering per se, or double cropping, if any.

NMISC staff aggregated the acres found irrigated as follows for purposes of comparing 2005 data with earlier years of inventory level data.

2005 Crop	Aggregated Crop
Alfalfa, New alfalfa	Alfalfa
Lawn, Turf grass	Sod
Corn, Sorghum	Corn/Sorghum
Garden, Pumpkins	Misc. Vegetables
High-density single grass	Pasture
Low-density mixed grass	Pasture
Misc. field crops	Pasture
Trees	Orchard
Grapes	Orchard
Wheat, Oats	Small Grains
Fallow/irrigated	Distributed across irrigated small grains, pasture, alfalfa
Plowed/irrigated	Distributed across irrigated small grains, pasture, alfalfa
Not marked or no access, cleared land, plowed ground with no irrigation status	Distributed across all categories, including not irrigated

Inventory Data Analysis

Data analysis is contained in the following tables and figure.

- Table 1 lists and describes the hydrologic units and the irrigation areas within each unit.
- Table 2 lists the acreage distribution for the 2005 inventory.
- Figure 1 shows the extent of the San Juan River Basin 2005 inventory.

For analysis purposes, all irrigated plowed parcels and all irrigated fallow parcels were distributed across the irrigated crop categories of small grains, pasture and alfalfa based on the overall cropping pattern for these categories in each irrigation area.

Of the approximately 32,700 acres targeted for field data collection, 194 acres were not field-checked, 9 acres were classified as cleared land with no associated irrigation status (i.e., flood, sprinkler, drip or not irrigated) and 656 acres were classified as plowed ground with no associated irrigation status. For analysis purposes, NMISC staff distributed these 859 acres across all acreage categories, including not irrigated acreage, based on the overall cropping pattern for each irrigation area within which they were found. Parcels found not irrigated and categorized as “wild native vegetation” or “grass, mixed varieties, low density (including native grasses)” were not included in the categorical distribution and are not included in Table 2. These categories in a non-irrigated state represent natural vegetation that may include both native and introduced species, which grows without benefit of intentional cultivation. Also, parcels found not irrigated and categorized as “wild native vegetation” in the 2004 inventory and which same parcels were found not irrigated but categorized as “fallow” in the 2005 inventory were not included in the categorical distribution and are not included in Table 2.

**Table 1. Irrigation Areas in the San Juan River Basin in New Mexico
By Hydrologic Unit**

Unit	Description of hydrologic drainage	Irrigation areas in unit
1	Navajo River, Pine River, and San Juan River above Navajo Dam	Above Navajo Dam
2	Animas River above the Animas River at Farmington gage	Animas River
3	San Juan River below Navajo Dam and above the San Juan River at Farmington gage (excluding Unit 2)	Above Archuleta, Citizen's Ditch, Archuleta Ditch, Turley Ditch, Hammond area (1), NIIP Blocks 1, 4, 5, 8 (5%), Echo (2)
4	La Plata River above La Plata River near Farmington gage	Upper La Plata (3), La Plata River
5	Chaco River above the mouth	Chaco River, NIIP blocks 3 (89%), 7 (26%) & 8 (84%)
6	San Juan River below the San Juan River at Farmington gage and above the San Juan River at Shiprock gage (excluding Units 4 and 5)	Farmington Glade (4), Farmers Mutual Ditch (5), Jewett Valley, Fruitland, Hogback-East (6), Cambridge, NIIP Blocks 2, 6, 3 (11%), 7 (74%) & 8 (11%)
7	San Juan River below the San Juan River at Shiprock gage (excluding Unit 8)	Hogback-West (7), Cudei
8	Whiskey Creek drainage, Red Wash	Whiskey Creek, Red Wash

Notes:

- 1) Includes Hammond Project and acreage with private water rights exclusive from the Hammond Project.
- 2) Includes only that portion of acreage served by any ditch diversion from the Animas River for which return flow occurs below the Animas River at Farmington gage or to the San Juan River above the mouth of the Animas River
- 3) Includes only acreage served by diversions from the La Plata River above the La Plata River at Stateline gage. The Enterprise Ditch serves lands in this area and in Colorado.
- 4) Includes only acreage served by diversion from Animas River for which return flow occurs to the San Juan River below the San Juan River at Farmington gage.
- 5) Diversion serving this area is from Animas River below the Animas River at Farmington gage and is supplemented by diversion from the San Juan River below the San Juan River at Farmington gage.
- 6) Includes only that portion of the Hogback Project above Shiprock.
- 7) Includes only that portion of the Hogback Project below Shiprock, including the Hogback Extension, which is served by diversion from the San Juan River above the San Juan River at Shiprock gage.
- 8) The Whiskey Creek drainage includes the Crystal, New Mexico area that drains to Chinle Wash. Its confluence with the San Juan River is located below Bluff, Utah. The Red Wash confluence with the San Juan River is located in New Mexico just east of the Arizona-New Mexico state line.

Table 2

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IRRIGATION AREA	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS						Total	Percentage of total irrigated acres	
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture	Small Grains			Sod
Hydrologic Unit 7											
	Alfalfa hay	Flood	156.1							156.1	54.8%
	Corn, grain	Flood								98.1	34.4%
	Misc. vegetables	Flood		98.1							
	Pasture, native	Flood			7.5						7.5
	Pasture, improved	Flood						23.4			23.4
	Turfgrass, cool season	Flood						0.0			0.0
	Misc. fruit trees	Flood					0.0				0.0
	Christmas Trees	Flood					0.0				0.0
	Spring small grains	Flood							0.0		0.0
	Winter small grains	Flood							0.0		0.0
	Total Flood-irrigated		156.1	98.1	7.5	0.0	0.0	23.4	0.0	0.0	285.1
	Alfalfa hay	Sprinkler									0.0
	Corn, grain	Sprinkler									0.0
	Misc. vegetables	Sprinkler									0.0
	Pasture, native	Sprinkler									0.0
	Pasture, improved	Sprinkler									0.0
	Turfgrass, cool season	Sprinkler									0.0
	Misc. fruit trees	Sprinkler									0.0
	Spring small grains	Sprinkler									0.0
	Total Sprinkler-irrigated										0.0
	Misc. fruit trees	Drip									0.0
	Vineyards	Drip									0.0
	Misc. vegetables	Drip									0.0
	Total Drip-irrigated										0.0
	Fallow	Not irrigated									0.0
		Not irrigated									0.0
		Not irrigated									89.5
		Not irrigated									0.0
		Not irrigated									0.0
	Total Not Irrigated										89.5
	Total irrigated Acres		156.1	98.1	7.5	0.0	0.0	23.4	0.0	0.0	285.1
	Percentage of total irrigated acres		54.8%	34.4%	2.6%	0.0%	0.0%	8.2%	0.0%	0.0%	
	Total Acres										374.6

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IRRIGATION AREA	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres		
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains	Sod
HOGBACK WEST 2005 Hydrologic Unit 7	Alfalfa hay	Flood	1048.6						1048.6	56.2%	
	Alfalfa, new	Flood	0.0						0.0		
	Corn, grain	Flood		565.7					565.7	30.3%	
	Sorghum, grain	Flood		0.0					0.0		
	Misc. vegetables	Flood			68.1				68.1	3.7%	
	Pasture, native	Flood				166.8			166.8	8.9%	
	Pasture, improved	Flood				0.0			0.0		
	Turfgrass, cool season	Flood						0.0	0.0		
	Misc. fruit orchards	Flood			3.2				3.2	0.2%	
	Christmas Trees	Flood			0.0				0.0		
	Spring small grains	Flood					0.0		0.0		
	Winter small grains	Flood					0.0		0.0		
	Total Flood-irrigated			1048.6	565.7	68.1	3.2	166.8	0.0	0.0	1852.3
	Alfalfa hay	Sprinkler		0.0						0.0	
	Corn, grain	Sprinkler			0.0					0.0	
Misc. vegetables	Sprinkler				0.0				0.0		
Pasture, native	Sprinkler					0.0			0.0		
Pasture, improved	Sprinkler					0.0			0.0		
Turfgrass, cool season	Sprinkler						8.4		8.4	0.5%	
Spring small grains	Sprinkler							0.0	0.0		
Winter small grains	Sprinkler							0.0	0.0		
Misc. fruit orchards	Sprinkler							0.0	0.0		
Total Sprinkler-irrigated			0.0	0.0	0.0	0.0	0.0	8.4	8.4		
Misc. fruit orchards	Drip					4.1			4.1	0.2%	
Vineyards	Drip					0.0			0.0		
Misc. vegetables	Drip			0.0					0.0		
Total Drip-irrigated				0.0	0.0	4.1			4.1		
Alfalfa hay	Not irrigated								0.0		
Corn, grain	Not irrigated								0.0		
Fallow	Not irrigated								676.9		
Misc. vegetables	Not irrigated								0.0		
Winter small grains	Not irrigated								0.0		
Misc. fruit orchards	Not irrigated								2.7		
Plowed	Not irrigated								0.0		
Total Not irrigated									679.6		
Total Irrigated Acres			1048.6	565.7	68.1	7.3	166.8	0.0	8.4	1864.8	
Percentage of total irrigated acres			56.2%	30.3%	3.7%	0.4%	8.9%	0.0%	0.5%		
Total Acres										2544.4	

Table 2

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IRRIGATION AREA CAMBRIDGE 2005 Hydrologic Unit 6	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres	
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains
	Alfalfa hay	Flood	10.2						10.2	46.0%
	Corn, grain	Flood							4.1	18.2%
	Misc. vegetables	Flood		4.1					0.0	
	Pasture, native	Flood			0.0			8.0	8.0	35.9%
	Pasture, improved	Flood						0.0	0.0	
	Turfgrass, cool season	Flood						0.0	0.0	
	Spring small grains	Flood						0.0	0.0	
	Winter small grains	Flood						0.0	0.0	
	Orchard/Grapes	Flood						0.0	0.0	
	Total Flood-irrigated		10.2	4.1	0.0	0.0	8.0	0.0	22.3	
	Alfalfa hay	Sprinkler							0.0	
	Corn, grain	Sprinkler							0.0	
	Misc. vegetables	Sprinkler							0.0	
	Pasture, native	Sprinkler							0.0	
	Pasture, improved	Sprinkler							0.0	
	Turfgrass, cool season	Sprinkler							0.0	
	Spring small grains	Sprinkler							0.0	
	Winter small grains	Sprinkler							0.0	
	Total Sprinkler-Irrigated								0.0	
	Orchard/Grapes	Drip							0.0	
	Misc. vegetables	Drip							0.0	
	Total Drip-Irrigated								0.0	
	Alfalfa hay	Not irrigated							0.0	
	Corn, grain	Not irrigated							0.0	
	Fallow	Not irrigated							0.0	
	Spring small grain	Not irrigated							0.0	
	Winter small grain	Not irrigated							0.0	
	Plowed	Not irrigated							0.0	
	Total Not irrigated								0.0	
	Total Irrigated Acres		10.2	4.1	0.0	0.0	8.0	0.0	22.3	
	Percentage of total irrigated acres		46.0%	18.2%	0.0%	0.0%	35.9%	0.0%	22.3	
	Total Acres									

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IRRIGATION AREA	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres	
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains
HOGBACK EAST 2005 Hydrologic Unit 6	Alfalfa hay	Flood	531.7					531.7	55.3%	
	Alfalfa, new	Flood	29.7					29.7	3.1%	
	Corn, grain	Flood		235.9				235.9	24.5%	
	Misc. vegetables	Flood			57.9			57.9	6.0%	
	Pasture, native	Flood				99.1		99.1	10.3%	
	Pasture, improved	Flood				0.0		0.0		
	Turgrass, cool season	Flood						0.0		
	Misc. fruit orchards	Flood			4.6			4.6	0.5%	
	Christmas Trees	Flood			0.0			0.0		
	Spring small grains	Flood						0.0		
	Winter small grains	Flood						0.0		
	Total Flood-irrigated			561.4	235.9	57.9	4.6	99.1	0.0	958.9
	Alfalfa hay	Sprinkler		0.0						0.0
Corn, grain	Sprinkler			0.0					0.0	
Misc. vegetables	Sprinkler								0.0	
Pasture, native	Sprinkler					0.0			0.0	
Pasture, improved	Sprinkler					0.0			0.0	
Turgrass, cool season	Sprinkler							3.3	0.3%	
Spring small grains	Sprinkler							0.0	0.0	
Winter small grains	Sprinkler							0.0	0.0	
Misc. fruit orchards	Sprinkler				0.0			0.0	0.0	
Total Sprinkler-irrigated			0.0	0.0	0.0	0.0	0.0	3.3	0.3%	
Misc. fruit orchards	Drip								0.0	
Vineyards	Drip								0.0	
Misc. vegetables	Drip								0.0	
Total Drip-irrigated									0.0	
Alfalfa hay	Not irrigated								0.0	
Corn, grain	Not irrigated								0.0	
Fallow	Not irrigated								392.2	
Misc. fruit orchards	Not irrigated								0.4	
Winter small grains	Not irrigated								0.0	
Plowed	Not irrigated								0.0	
Total Not Irrigated									392.6	
Total Irrigated Acres			561.4	235.9	57.9	4.6	99.1	3.3	962.2	
Percentage of total irrigated acres			58.3%	24.5%	6.0%	0.5%	10.3%	0.3%		
Total Acres									1354.8	

Table 2

IRRIGATION AREA	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres		
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains	Sod
FRUITLAND 2005 Hydrologic Unit 6	Alfalfa hay	Flood	1146.5						1146.5	59.6%	
	Alfalfa, new	Flood	47.2						47.2	2.5%	
	Corn, grain	Flood		526.4					526.4	27.3%	
	Sorghum, grain	Flood		0.0					0.0		
	Misc. vegetables	Flood			89.7				89.7	4.7%	
	Pasture, native	Flood					82.7		82.7	4.3%	
	Pasture, improved	Flood					0.0		0.0		
	Misc. field crops	Flood					0.0		0.0		
	Turgrass, cool season	Flood						2.8	2.8	0.1%	
	Misc. fruit orchards	Flood				2.7			2.7	0.1%	
	Christmas Trees	Flood				0.0			0.0		
	Spring small grains	Flood						6.5	6.5	0.3%	
	Winter small grains	Flood						2.9	2.9	0.2%	
	Total Flood-irrigated			1193.7	526.4	89.7	2.7	82.7	9.5	2.8	1907.4
	Alfalfa hay	Sprinkler		17.7						17.7	0.9%
Corn, grain	Sprinkler								0.0		
Misc. vegetables	Sprinkler								0.0		
Pasture, native	Sprinkler								0.0		
Pasture, improved	Sprinkler								0.0		
Turgrass, cool season	Sprinkler								0.0		
Misc. fruit orchards	Sprinkler								0.0		
Spring small grains	Sprinkler								0.0		
Winter small grains	Sprinkler								0.0		
Total Sprinkler-Irrigated			17.7	0.0	0.0	0.0	0.0	0.0	0.0	17.7	
Misc. fruit trees	Drip								0.0		
Vineyards	Drip								0.0		
Misc. vegetables	Drip								0.0		
Total Drip-irrigated											
Alfalfa hay	Not irrigated								18.1		
Corn, grain	Not irrigated								0.0		
Fallow	Not irrigated								696.8		
Spring small grain	Not irrigated								0.0		
Misc. fruit orchards	Not irrigated								3.1		
Plowed	Not irrigated								0.0		
Total Not irrigated									718.0		
Total Irrigated Acres			1211.5	526.4	89.7	2.7	82.7	9.5	2.8	1925.2	
Percentage of total irrigated acres			62.9%	27.3%	4.7%	0.1%	4.3%	0.5%	0.1%		
Total Acres										2643.2	

Table 2

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IRRIGATION AREA JEWETT VALLEY 2005 Hydrologic Unit 6	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres	
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains
	Alfalfa hay	Flood	444.3						444.3	60.4%
	Alfalfa, new	Flood	0.0						0.0	
	Corn, grain	Flood		33.1					33.1	4.5%
	Corn, silage	Flood		0.0					0.0	
	Misc. vegetables	Flood			2.2				2.2	0.3%
	Pasture, native	Flood				105.9			105.9	14.4%
	Pasture, improved	Flood				10.5			10.5	1.4%
	Misc. field crops	Flood				0.0			0.0	
	Turgrass, cool season	Flood						0.0	0.0	0.0%
	Misc. fruit orchards	Flood				1.0			1.0	0.1%
	Christmas Trees	Flood				0.0			0.0	
	Spring small grains	Flood						6.5	6.5	0.9%
	Winter small grains	Flood						18.4	18.4	2.5%
	Total Flood-Irrigated		444.3	33.1	2.2	1.0	116.4	24.8	621.8	
	Alfalfa hay	Sprinkler	9.2						9.2	1.3%
	Alfalfa, new	Sprinkler	0.0						0.0	
	Corn, grain	Sprinkler		0.0					0.0	
	Misc. vegetables	Sprinkler			0.0				0.0	
	Pasture, native	Sprinkler				0.0			0.0	
	Pasture, improved	Sprinkler				0.0			0.0	
	Turgrass, cool season	Sprinkler						105.2	105.2	14.3%
	Misc. fruit orchards	Sprinkler				0.0			0.0	
	Winter small grains	Sprinkler						0.0	0.0	
	Total Sprinkler-Irrigated		9.2	0.0	0.0	0.0	0.0	105.2	114.4	
	Misc. fruit orchards	Drip							0.0	
	Vineyards	Drip							0.0	
	Misc. vegetables	Drip							0.0	
	Total Drip-Irrigated								0.0	
	Alfalfa hay	Not irrigated							0.0	
	Corn, grain	Not irrigated							0.0	
	Fallow	Not irrigated							203.0	
	Winter small grains	Not irrigated							0.0	
	Spring small grains	Not irrigated							0.0	
	Plowed	Not irrigated							0.0	
	Total Not Irrigated								203.0	
	Total Irrigated Acres		453.6	33.1	2.2	1.0	116.4	24.8	736.3	
	Percentage of total irrigated acres		61.6%	4.5%	0.3%	0.1%	15.8%	3.4%	14.3%	
	Total Acres								939.3	

Table 2

IRRIGATION AREA UPPER LA PLATA 2005	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres	
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains
Hydrologic Unit 4	Alfalfa hay	Flood	2.3						2.3	2.1%
	Corn, grain	Flood			0.0				0.0	
	Misc. vegetables	Flood				0.0			0.0	
	Pasture, native	Flood					41.6		41.6	39.0%
	Pasture, improved	Flood					7.7		7.7	7.2%
	Turfgrass, cool season	Flood						1.5	1.5	1.4%
	Misc. fruit orchards	Flood							0.0	
	Christmas Trees	Flood							0.0	
	Spring small grains	Flood							0.6	0.6%
	Winter small grains	Flood							0.0	
	Total Flood-irrigated		2.3	0.0	0.0	0.0	49.3	0.6	1.5	53.7
	Alfalfa hay	Sprinkler	49.3						49.3	46.3%
	Corn, grain	Sprinkler			0.0				0.0	
	Misc. vegetables	Sprinkler							0.0	
	Pasture, native	Sprinkler					3.0		3.0	2.8%
	Pasture, improved	Sprinkler					0.0		0.0	
	Turfgrass, cool season	Sprinkler						0.6	0.6	0.6%
	Spring small grains	Sprinkler							0.0	
	Winter small grains	Sprinkler							0.0	
	Misc. fruit orchards	Sprinkler							0.0	
	Total Sprinkler-irrigated		49.3	0.0	0.0	0.0	3.0	0.6	53.0	
	Misc. fruit orchards	Drip							0.0	
	Vineyards	Drip							0.0	
	Misc. vegetables	Drip							0.0	
	Total Drip-irrigated								0.0	
	Alfalfa hay	Not irrigated							0.0	
	Corn, grain	Not irrigated							0.0	
	Fallow	Not irrigated							28.2	
	Spring small grains	Not irrigated							0.0	
	Winter small grains	Not irrigated							0.0	
	Total Not Irrigated								28.2	
	Total Irrigated Acres		51.6	0.0	0.0	0.0	52.4	0.6	2.1	106.7
	Percentage of total irrigated acres		48.4%	0.0%	0.0%	0.0%	49.1%	0.6%	2.0%	
	Total Acres									134.9

Table 2

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IRRIGATION AREA	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres		
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains	Sod
LA PLATA 2005 Hydrologic Unit 4	Alfalfa hay	Flood	282.6						282.6	10.3%	
	Alfalfa, new	Flood	96.3						96.3	3.5%	
	Misc. Field Crops	Flood					30.2		30.2	1.1%	
	Sorghum, grain	Flood							13.7	0.5%	
	Misc. vegetables	Flood		13.7		12.3			12.3	0.4%	
	Pasture, native	Flood					1700.7		1700.7	61.7%	
	Pasture, improved	Flood					240.0		240.0	8.7%	
	Turfgrass, cool season	Flood				0.2		1.8	1.8	0.1%	
	Misc. fruit orchards	Flood						0.0	0.0	0.01%	
	Spring small grains	Flood						0.0	0.0		
	Winter small grains	Flood				0.0			0.0		
	Vineyards	Flood							0.0		
	Total Flood-irrigated			378.9	13.7	12.3	0.2	1971.0	1.8	2377.9	
	Alfalfa hay	Sprinkler	133.1							133.1	4.8%
Alfalfa, new	Sprinkler	0.0							0.0		
Corn, grain	Sprinkler								0.0		
Misc. vegetables	Sprinkler								13.7	0.5%	
Pasture, native	Sprinkler					230.5			230.5	8.4%	
Pasture, improved	Sprinkler					0.0		0.3	0.0	0.01%	
Turfgrass, cool season	Sprinkler							0.0	0.0		
Spring small grains	Sprinkler							0.0	0.0		
Winter small grains	Sprinkler							0.0	0.0		
Misc. fruit orchards	Sprinkler							0.0	0.0		
Total Sprinkler-irrigated			133.1	0.0	13.7	0.0	230.5	0.3	377.5		
Misc. fruit orchards	Drip								0.0		
Vineyards	Drip								0.0		
Misc. vegetables	Drip								0.0		
Total Drip-irrigated									0.0		
Alfalfa hay	Not irrigated								0.0		
Corn, grain	Not irrigated								0.0		
Fallow	Not irrigated								473.2		
Spring small grains	Not irrigated								0.0		
Winter small grains	Not irrigated								0.0		
Plowed	Not irrigated								0.0		
Total Not Irrigated									473.2		
Total Irrigated Acres			512.0	13.7	26.0	0.2	2201.4	2.1	2755.4		
Percentage of total irrigated acres			18.6%	0.5%	0.9%	0.0%	79.9%	0.0%	0.1%		
Total Acres									3228.6		

Table 2

4/26/2006

IRRIGATION AREA	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres	
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains
FARMERS MUTUAL DITCH 2005 Hydrologic Unit 6	Alfalfa hay	Flood	1162.5						1162.5	58.4%
	Alfalfa, new	Flood	119.0						119.0	6.0%
	Corn, grain	Flood		24.0					24.0	1.2%
	Corn, silage	Flood		0.0					0.0	
	Misc. vegetables	Flood			13.6				13.6	0.7%
	Pasture, native	Flood					572.1		572.1	28.7%
	Pasture, improved	Flood					15.7		15.7	0.8%
	Misc. field crops	Flood					4.9		4.9	0.2%
	Turgrass, cool season	Flood						11.7	11.7	0.6%
	Misc. fruit orchards	Flood				7.1			7.1	0.4%
	Vineyards	Flood				0.0			0.0	
	Christmas Trees	Flood				0.0			0.0	
	Spring small grains	Flood						0.2	0.2	0.01%
	Winter small grains	Flood						0.0	0.0	
	Total Flood-irrigated			1281.5	24.0	13.6	7.1	592.8	0.2	11.7
Alfalfa hay	Sprinkler	17.9							17.9	0.9%
Alfalfa, new	Sprinkler	11.5							11.5	0.6%
Corn, grain	Sprinkler		0.0						0.0	
Misc. vegetables	Sprinkler			0.0					0.0	
Pasture, native	Sprinkler					1.0			1.0	0.1%
Pasture, improved	Sprinkler					0.0			0.0	
Turgrass, cool season	Sprinkler							28.6	28.6	1.4%
Misc. fruit orchards	Sprinkler				1.0				1.0	0.1%
Spring small grains	Sprinkler							0.0	0.0	
Winter small grains	Sprinkler							0.0	0.0	
Total Sprinkler-irrigated			29.5	0.0	0.0	1.0	1.0	0.0	28.6	60.2
Misc. fruit orchards	Drip								0.0	
Vineyards	Drip								0.0	
Misc. vegetables	Drip				0.0				0.0	
Total Drip-irrigated					0.0				0.0	0.0
Misc. field crops	Not irrigated								21.1	
Winter small grain	Not irrigated								10.3	
Fallow	Not irrigated								283.0	
Misc. fruit orchards	Not irrigated								5.6	
Plowed	Not irrigated								0.0	
Total Not irrigated									320.0	
Total Irrigated Acres			1311.0	24.0	13.6	8.1	593.8	0.2	40.4	1991.1
Percentage of total irrigated acres			65.8%	1.2%	0.7%	0.4%	29.8%	0.0%	2.0%	
Total Acres									2311.1	

Table 2

4/26/2006

IRRIGATION AREA FARMINGTON GLADE 2005	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres	
			Alfalfa	Gorn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains
Hydrologic Unit 6	Alfalfa hay	Flood	3.6						3.6	3.5%
	Corn, grain	Flood		0.0					0.0	
	Misc. vegetables	Flood			10.1				10.1	10.0%
	Pasture, native	Flood					54.7		54.7	53.9%
	Pasture, improved	Flood					0.0		0.0	
	Turfgrass, cool season	Flood						1.0	1.0	1.0%
	Misc. fruit orchards	Flood				18.8			18.8	18.5%
	Vineyards	Flood				0.0			0.0	
	Christmas trees	Flood				0.0			0.0	
	Spring small grains	Flood						0.0	0.0	
	Winter small grains	Flood						0.0	0.0	
	Total Flood-irrigated		3.6	0.0	10.1	18.8	54.7	0.0	1.0	88.2
	Alfalfa hay	Sprinkler	0.0						0.0	
	Corn, grain	Sprinkler		0.0					0.0	
	Misc. vegetables	Sprinkler			0.2				0.2	0.2%
	Pasture, native	Sprinkler					3.0		3.0	3.0%
	Pasture, improved	Sprinkler					0.0		0.0	
	Turfgrass, cool season	Sprinkler						9.6	9.6	9.5%
	Misc. fruit orchards	Sprinkler				0.3			0.3	0.3%
	Spring small grains	Sprinkler				0.0			0.0	
	Winter small grains	Sprinkler						0.0	0.0	
	Total Sprinkler-irrigated		0.0	0.0	0.2	0.3	3.0	0.0	9.6	13.2
	Misc. fruit orchards	Drip							0.0	
	Vineyards	Drip							0.0	
	Total Drip-irrigated		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Corn, grain	Not irrigated							0.0	
	Fallow	Not irrigated							9.3	
	Misc. fruit orchards	Not irrigated							0.0	
	Plowed	Not irrigated							0.0	
	Total Not Irrigated								9.3	
	Total Irrigated Acres		3.6	0.0	10.3	19.1	57.7	0.0	10.7	101.4
	Percentage of total irrigated acres		3.5%	0.0%	10.2%	18.9%	56.9%	0.0%	10.5%	
	Total Acres									110.7

Table 2

4/26/2006

IRRIGATION AREA	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres	
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains
ANIMAS 2005 Hydrologic Unit 2	Alfalfa hay	Flood	603.0						603.0	13.4%
	Alfalfa, new	Flood	36.5						36.5	0.8%
	Corn, grain	Flood			0.0				0.0	
	Corn, silage	Flood			10.8				10.8	0.2%
	Misc. vegetables	Flood				26.8			26.8	0.6%
	Pasture, native	Flood					2404.5		2404.5	53.6%
	Pasture, improved	Flood					181.9		181.9	4.1%
	Turgrass, cool season	Flood						34.0	34.0	0.8%
	Misc. fruit orchards	Flood						36.6	36.6	0.8%
	Vineyards	Flood						0.0	0.0	
	Misc. field crops	Flood					7.1		7.1	0.2%
	Spring small grain	Flood						46.6	46.6	1.0%
	Winter small grain	Flood						25.5	25.5	0.6%
	Total Flood-Irrigated			639.6	10.8	26.8	38.6	2593.5	72.1	34.0
Alfalfa hay	Sprinkler	279.8							279.8	6.2%
Alfalfa, new	Sprinkler	0.0							0.0	
Misc. vegetables	Sprinkler			17.7					17.7	0.4%
Pasture, native	Sprinkler					595.2			595.2	13.3%
Pasture, improved	Sprinkler					73.3			73.3	1.6%
Turgrass, cool season	Sprinkler							96.5	96.5	2.2%
Spring small grain	Sprinkler							0.0	0.0	0.0%
Winter small grain	Sprinkler							6.4	6.4	0.1%
Misc. fruit orchards	Sprinkler							1.1	1.1	0.03%
Total Sprinkler-Irrigated			279.8	0.0	17.7	1.1	688.5	6.4	96.5	1070.1
Misc. fruit orchards	Drip								0.2	0.005%
Vineyards	Drip								0.1	0.002%
Total Drip-Irrigated			0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.002%
Alfalfa hay	Not irrigated								3.4	
Fallow	Not irrigated								862.2	
Spring small grain	Not irrigated								0.0	
Winter small grain	Not irrigated								0.0	
Turgrass, cool season	Not irrigated								0.5	
Misc. fruit orchards	Not irrigated								34.4	
Plowed	Not irrigated								0.0	
Total Not Irrigated									900.5	
Total Irrigated Acres			919.4	10.8	44.5	38.1	3262.0	78.5	130.4	4483.7
Percentage of total irrigated acres			20.5%	0.2%	1.0%	0.8%	72.8%	1.8%	2.9%	
Total Acres										5384.2

Table 2

4/26/2006

IRRIGATION AREA ARCHULETA DITCH 2005	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres	
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains
	Alfalfa hay	Flood	0.0						0.0	
	Alfalfa, new	Flood							0.0	
	Misc. vegetables	Flood							0.0	
	Pasture, native	Flood							0.0	
	Pasture, improved	Flood							0.0	
	Turgrass, cool season	Flood							0.0	
	Spring small grain	Flood							0.0	
	Winter small grain	Flood							0.0	
	Corn, grain	Flood							0.0	
	Total Flood-irrigated		0.0	0.0	0.0	0.0	0.0	0.0	0.0	
	Alfalfa hay	Sprinkler	11.9						11.9	100.0%
	Corn, grain	Sprinkler							0.0	
	Misc. vegetables	Sprinkler		0.0					0.0	
	Pasture, native	Sprinkler					0.0		0.0	
	Pasture, improved	Sprinkler					0.0		0.0	
	Turgrass, cool season	Sprinkler						0.0	0.0	
	Spring small grain	Sprinkler						0.0	0.0	
	Winter small grain	Sprinkler						0.0	0.0	
	Total Sprinkler-irrigated		11.9	0	0	0	0	0	11.9	
	Misc. fruit orchards	Drip							0.0	
	Misc. vegetables	Drip							0.0	
	Total Drip-irrigated								0.0	
	Alfalfa hay	Not irrigated							0.0	
	Fallow	Not irrigated							7.1	
	Misc. fruit orchards	Not irrigated							0.0	
	Total Not irrigated								7.1	
	Total Irrigated Acres		11.9	0.0	0.0	0.0	0.0	0.0	11.9	
	Percentage of total irrigated acres		100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
	Total Acres								19.0	

Table 2

4/26/2006

IRRIGATION AREA	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres			
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains	Sod	
CITIZENS DITCH 2005 Hydrologic Unit 3	Alfalfa hay	Flood	403.9						403.9	16.6%		
	Alfalfa, new	Flood	0.0						0.0			
	Corn, grain	Flood							0.0			
	Misc. vegetables	Flood			17.0				17.0	0.7%		
	Pasture, native	Flood					736.6		736.6	30.2%		
	Pasture, improved	Flood					10.3		10.3	0.4%		
	Turfgrass, cool season	Flood						4.3	4.3	0.2%		
	Spring small grain	Flood						0.0	0.0			
	Winter small grain	Flood						0.0	0.0			
	Misc. fruit orchards	Flood				4.3			4.3	0.2%		
Vineyards	Flood				0.7			0.7	0.0%			
	Total Flood-irrigated		403.9	0.0	17.0	5.0	746.9	0.0	4.3	1177.0		
	Alfalfa	Sprinkler	646.7						646.7	26.5%		
	Alfalfa, new	Sprinkler	0.0						0.0			
	Corn, grain	Sprinkler							0.0			
	Misc. vegetables	Sprinkler			6.9				6.9	0.3%		
	Pasture, native	Sprinkler					490.1		490.1	20.1%		
	Pasture, improved	Sprinkler					16.0		16.0	0.7%		
	Spring small grain	Sprinkler						4.5	4.5	0.2%		
	Winter small grain	Sprinkler						0.0	0.0			
	Turfgrass, cool season	Sprinkler						80.8	80.8	3.3%		
	Misc. fruit orchards	Sprinkler				13.0			13.0	0.5%		
	Christmas trees	Sprinkler				0.6			0.6	0.03%		
		Total Sprinkler-irrigated		646.7	0.0	6.9	13.6	506.1	4.5	80.8	1258.6	
	Vineyards	Drip				0.4				0.4	0.02%	
	Misc. vegetables	Drip			1.2					1.2	0.1%	
	Misc. fruit orchards	Drip				0.3				0.3	0.01%	
	Total Drip-irrigated		0.0	0.0	1.2	0.7	0.0	0.0	0.0	1.9		
Misc. fruit orchards	Not irrigated								4.1			
Fallow	Not irrigated								326.7			
Turfgrass, cool season	Not irrigated								0.2			
Misc. field crops	Not irrigated								0.7			
Plowed	Not irrigated								0.0			
	Total Not Irrigated								331.7			
	Total Irrigated Acres		1050.6	0.0	25.1	19.3	1253.0	4.5	85.1	2437.6		
	Percentage of total irrigated acres		43.1%	0.0%	1.0%	0.8%	51.4%	0.2%	3.5%			
	Total Acres									2769.3		

Table 2

4/26/2006

IRRIGATION AREA	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres	
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains
TURLEY DITCH 2005										
Hydrologic Unit 3										
	Alfalfa hay	Flood	37.4						37.4	29.2%
	Corn, grain	Flood							0.0	
	Misc. vegetables	Flood		0.0					0.0	
	Pasture, native	Flood					66.3		66.3	51.8%
	Pasture, improved	Flood					0.0		0.0	
	Turfgrass, cool season	Flood					5.1		5.1	0.0%
	Misc. field crops	Flood							0.0	4.0%
	Misc. fruit orchards	Flood			0.0				0.0	
	Spring small grains	Flood							0.0	
	Winter small grains	Flood							0.0	
	Total Flood-irrigated		37.4	0.0	0.0	0.0	71.4	0.0	0.0	108.8
	Alfalfa hay	Sprinkler	13.2						13.2	10.3%
	Corn, grain	Sprinkler							0.0	
	Misc. vegetables	Sprinkler		0.0					0.0	
	Pasture, native	Sprinkler					0.7		0.7	0.5%
	Pasture, improved	Sprinkler					0.0		0.0	
	Turfgrass, cool season	Sprinkler							0.6	0.5%
	Spring small grains	Sprinkler							0.0	
	Winter small grains	Sprinkler							0.0	
	Misc. fruit orchards	Sprinkler			0.0				0.0	
	Total Sprinkler-irrigated		13.2	0.0	0.0	0.0	0.7	0.0	0.6	14.5
	Misc. fruit orchards	Drip							0.0	
	Vineyards	Drip					4.8		4.8	3.7%
	Total Drip-irrigated						4.8	0.0	4.8	
	Alfalfa hay	Not irrigated							0.0	
	Fallow	Not irrigated							7.0	
	Misc. fruit orchards	Not irrigated							0.0	
	Plowed	Not irrigated							0.0	
	Total Not irrigated								7.0	
	Total Irrigated Acres		50.6	0.0	0.0	4.8	72.1	0.0	0.6	128.1
	Percentage of total irrigated acres		39.5%	0.0%	0.0%	3.7%	56.3%	0.0%	0.5%	
	Total Acres									135.1

Table 2

4/26/2006

IRRIGATION AREA	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres		
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains	Sod
ECHO AREA 2005 Hydrologic Unit 3	Alfalfa hay	Flood	70.6						70.6	19.2%	
	Corn, grain	Flood							0.0		
	Misc. vegetables	Flood		0.0					14.3	3.9%	
	Pasture, native	Flood					78.3		78.3	21.3%	
	Pasture, improved	Flood					0.0		0.0		
	Misc. field crops	Flood						0.0	0.0		
	Turfgrass, cool season	Flood						13.6	13.6	3.7%	
	Misc. fruit orchards	Flood			32.0				32.0	8.7%	
	Christmas trees	Flood			8.5				8.5	2.3%	
	Spring small grain	Flood					20.2		20.2	5.5%	
	Winter small grain	Flood					0.7		0.7	0.2%	
	Vineyards	Flood			0.0				0.0		
	Total Flood-Irrigated			70.6	0.0	14.3	40.5	78.3	20.9	13.6	238.2
	Alfalfa hay	Sprinkler		91.4						91.4	24.9%
	Corn, grain	Sprinkler								0.0	
Misc. vegetables	Sprinkler			0.0					0.0		
Pasture, native	Sprinkler					24.2			24.2	6.6%	
Pasture, improved	Sprinkler					0.0			0.0		
Turfgrass, cool season	Sprinkler							13.4	13.4	3.6%	
Misc. fruit orchards	Sprinkler								0.0		
Spring small grain	Sprinkler							0.0	0.0		
Winter small grain	Sprinkler							0.0	0.0		
Total Sprinkler-Irrigated			91.4	0.0	0.0	0.0	24.2	0.0	13.4	129.0	
Misc. fruit orchards	Drip						0.0		0.0		
Vineyards	Drip						0.0		0.0		
Total Drip-Irrigated											
Alfalfa hay	Not irrigated								0.0		
Fallow	Not irrigated								54.8		
Misc. fruit orchards	Not irrigated								0.0		
Winter small grain	Not irrigated								21.8		
Plowed	Not irrigated								0.0		
Total Not Irrigated									76.6		
Total Irrigated Acres			162.0	0.0	14.3	40.5	102.6	20.9	27.0	367.3	
Percentage of total irrigated acres			44.1%	0.0%	3.9%	11.0%	27.9%	5.7%	7.3%		
Total Acres										443.9	

Table 2

IRRIGATION AREA HAMMOND AREA 2005	CIR CROP	IRRIGATION METHOD	AGGREGATED CROPS					Total	Percentage of total irrigated acres	
			Alfalfa	Corn/Sorghum	Misc. Vegetables	Orchard	Pasture			Small Grains
Hydrologic Unit 3	Alfalfa hay	Flood	115.0						115.0	3.6%
	Alfalfa, new	Flood	18.3						18.3	0.6%
	Misc. vegetables	Flood			0.6				0.6	0.02%
	Pasture, native	Flood					55.4		55.4	1.7%
	Pasture, improved	Flood					0.0		0.0	0.0%
	Turgrass, cool season	Flood						0.0	0.0	0.0%
	Misc. fruit orchards	Flood			2.3				2.3	0.1%
	Spring small grains	Flood						0.0	0.0	0.0%
	Winter small grains	Flood						0.0	0.0	0.0%
	Total Flood-irrigated		133.4	0.0	0.6	2.3	55.4	0.0	0.0	191.7
	Alfalfa hay	Sprinkler	1831.0						1831.0	57.8%
	Alfalfa, new	Sprinkler	91.8						91.8	2.9%
	Turgrass, cool season	Sprinkler					14.3		14.3	0.5%
	Corn, grain	Sprinkler		8.0					8.0	0.3%
	Misc. vegetables	Sprinkler			10.0				10.0	0.3%
	Pasture, native	Sprinkler					895.1		895.1	28.3%
	Pasture, improved	Sprinkler					9.6		9.6	0.3%
	Misc. field crops	Sprinkler					3.1		3.1	0.1%
	Misc. fruit orchards	Sprinkler			6.7				6.7	0.2%
	Christmas trees	Sprinkler			1.1				1.1	0.03%
	Spring small grains	Sprinkler						106.2	106.2	3.4%
	Winter small grains	Sprinkler						0.0	0.0	0.0%
	Total Sprinkler-irrigated		1922.8	8.0	10.0	7.9	907.8	106.2	14.3	2976.8
	Misc. fruit orchards	Drip				0.0			0.0	0.0%
	Vineyards	Drip				0.0			0.0	0.0%
	Total Drip-irrigated									
	Alfalfa hay	Not irrigated							5.9	
	Fallow	Not irrigated							414.5	
	Misc. fruit orchards	Not irrigated							0.0	
	Plowed	Not irrigated							0.0	
	Total Not irrigated								420.4	
	Total Irrigated Acres		2056.1	8.0	10.6	10.2	963.2	106.2	14.3	3168.5
	Percentage of total irrigated acres		64.9%	0.3%	0.3%	0.3%	30.4%	3.4%	0.5%	
	Total Acres									3588.9

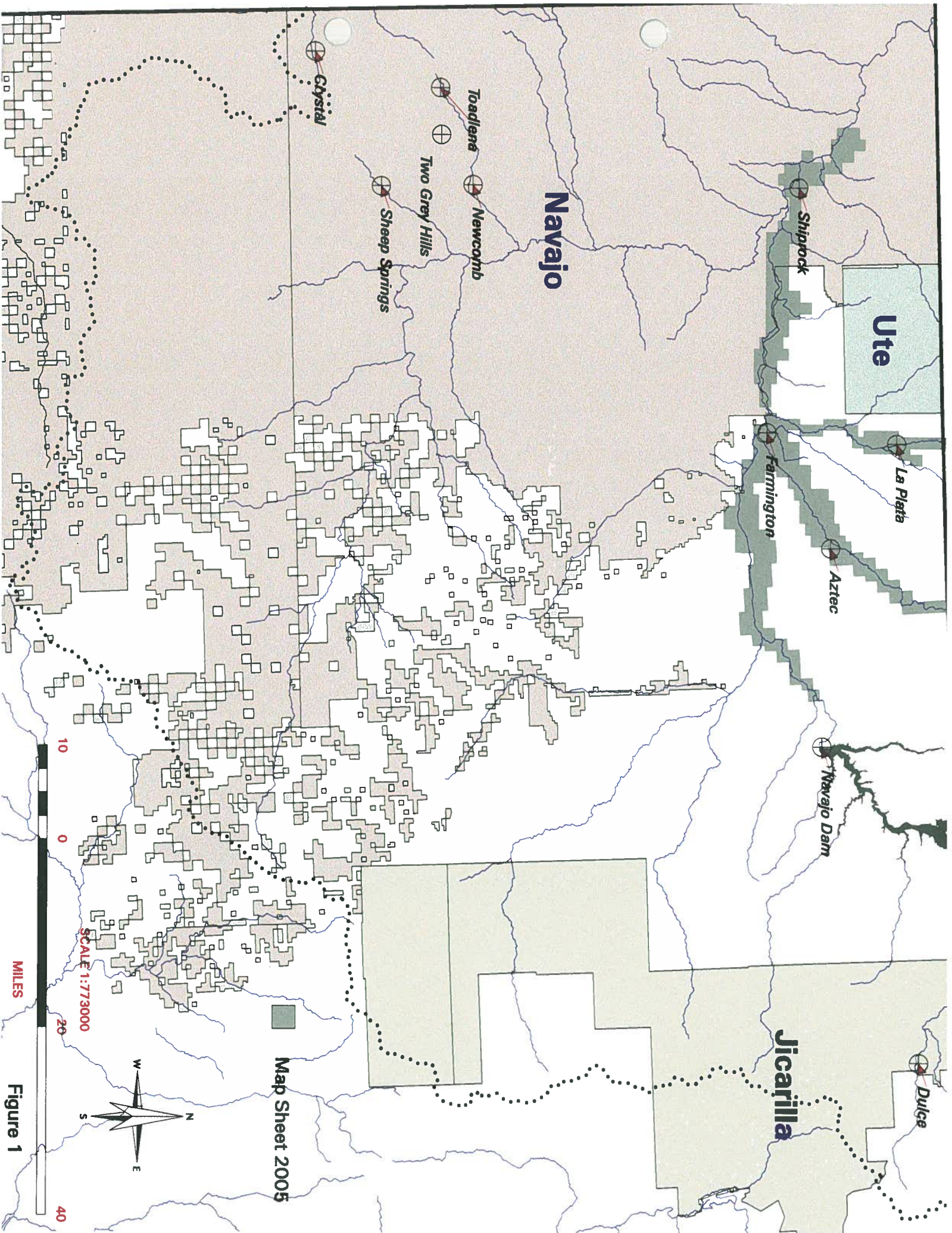


Figure 1