

STATE OF CALIFORNIA
THE RESOURCES AGENCY
DEPARTMENT OF WATER RESOURCES
SOUTHERN DISTRICT
PLANNING BRANCH

Preliminary Evaluation of
Cropping Patterns
in the Imperial Valley

by

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This Technical Information Record (TIR) was prepared to document pertinent information developed during the basic data acquisition phase of the Desert Areas Water Action Plan and for planning studies on agricultural water conservation. The findings in this TIR have not been fully reconciled with all the technical aspects of the total investigation, which will be fully reviewed when all phases of the investigation have been completed. Hence, this TIR is only for internal office use and should be considered as preliminary and subject to revision.

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I. INTRODUCTION

Efficient utilization of water in California has in recent years become a primary concern of water management planners, especially in Southern California as this region imports most of the water for urban and agricultural uses. The need for water conservation is becoming more and more important as the demand for water increases.

Therefore, the Department of Water Resources (DWR) is conducting an investigation of the agricultural water use in the Imperial Valley in an effort to obtain information that would lead to improved efficiency. One aspect of this investigation is land use; therefore DWR conducted a land use study consisting of surveys made in August 1978, January 1979, and April 1979. Three surveys were necessary to give a complete picture of the cropping patterns in the Imperial Valley where year round agriculture is practiced. This report discusses that study and its findings.

II. OBJECTIVE AND SCOPE

The objective of this report is to present information obtained from the 1978-79 Land Use Study on land use patterns, irrigated acreages, and multiple cropping patterns and acreages in the Imperial Valley. All land use information is limited to irrigated agricultural lands within the boundaries of the Imperial Irrigation District (IID) and any reference to the Imperial Valley, unless stated otherwise, will be to those lands (Figure 1).

III. MAJOR AGRICULTURAL ACTIVITY AND CROPS

The Imperial Valley is the site of more than half the livestock feedlot activity in California. Yearly livestock populations include approximately 160,000 sheep pastured each winter and from 500,000 to 700,000 head of cattle

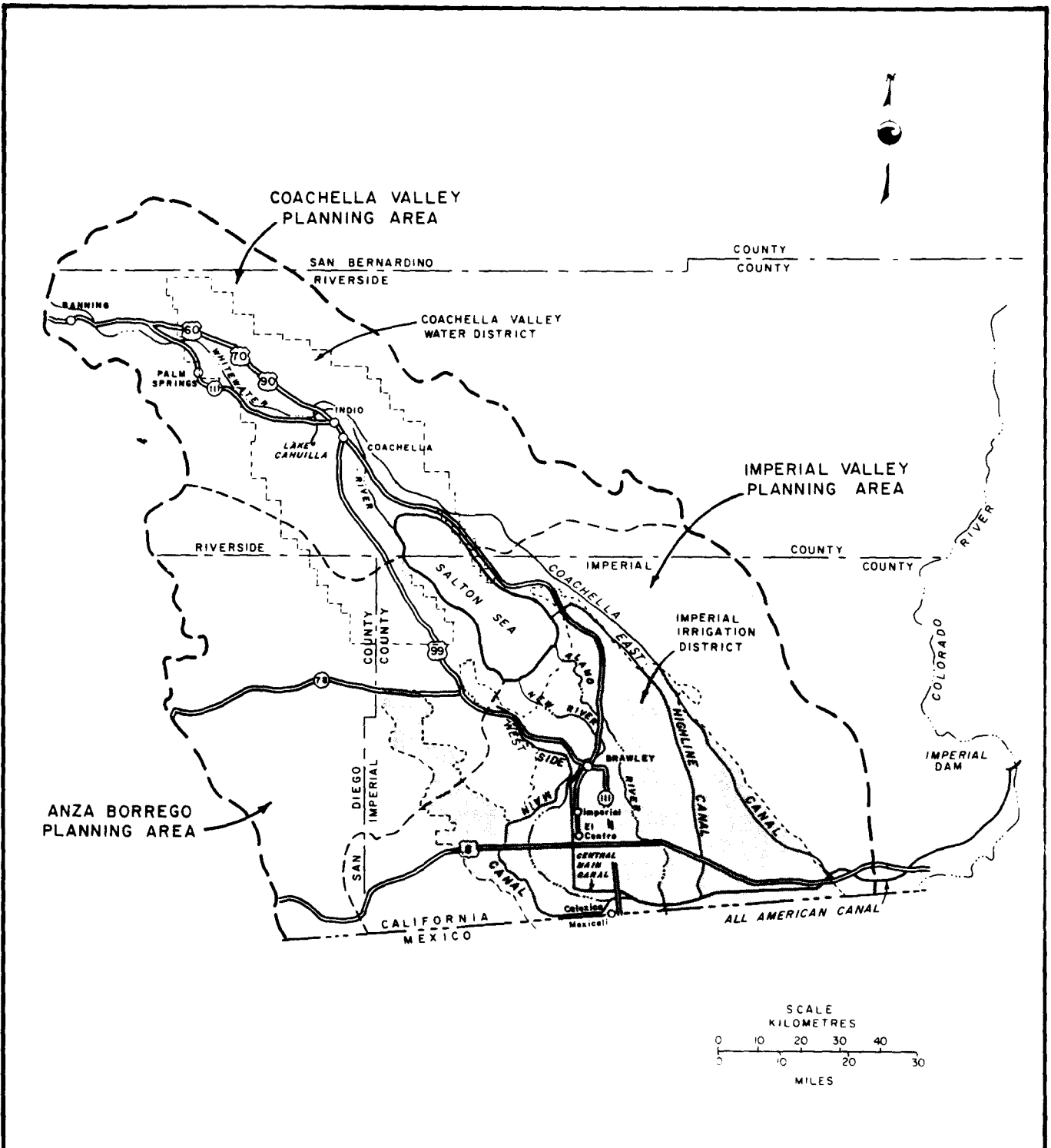


Figure 1-LOCATION OF THE IMPERIAL IRRIGATION DISTRICT IN RELATION TO THE COACHELLA AND IMPERIAL VALLEYS

DEPARTMENT OF WATER RESOURCES, SOUTHERN DISTRICT, 1980

throughout the year.^{1/} There are about 7 431 hectares (3,000) of land devoted to feedlots and more than half the irrigated agriculture in the Valley is alfalfa and grains used as feed for the local livestock industry.

The alfalfa in this region is usually harvested three to four times a year for three or four years and seeds are produced in the final year. Wheat and barley are planted between October and January and harvested between May and July. Sorghums are planted between February and May and harvested between July and November.

The remaining irrigated agriculture is table vegetables, cotton and sugar beets. The growing period for cotton and sugar beets is most of the year. The vegetables are grown and harvested only in the fall, winter, and spring, because the summer months are too hot for these crops to survive. Appendix A is a detailed listing of the various major crops grown in the Valley and Appendix B is a planting and harvesting schedule for these crops and some less significant crops.

IV. METHODOLOGY

The Land Use Survey consisted of three land use surveys of the Imperial Valley agriculture, August 1978, January 1979, and April 1979. The procedure for mapping land use was to first photo-interpret recent aerial photographs and transfer the information to USGS 7½ minute quads. Then the quads were taken into the field to verify the photo interpretation. The January and April resurveys were mapped in the field on the same quads as the August survey, using different colored ink, and noting any land use and field line changes. The August survey was used for the regular land use update which was scheduled for that year (1978). Final land use maps (of the August survey) were drafted and sent to Sacramento for data processing, using the cut and weigh process to determine acreages and tabulating the data by computer. Acreages for the 1979 resurveys were determined by using an electronic

^{1/} "Drainage Practice in Imperial Valley," L. F. Hermsmeier, reprinted from the Transactions of the American Society of Agricultural Engineers, 1978, p. 108.

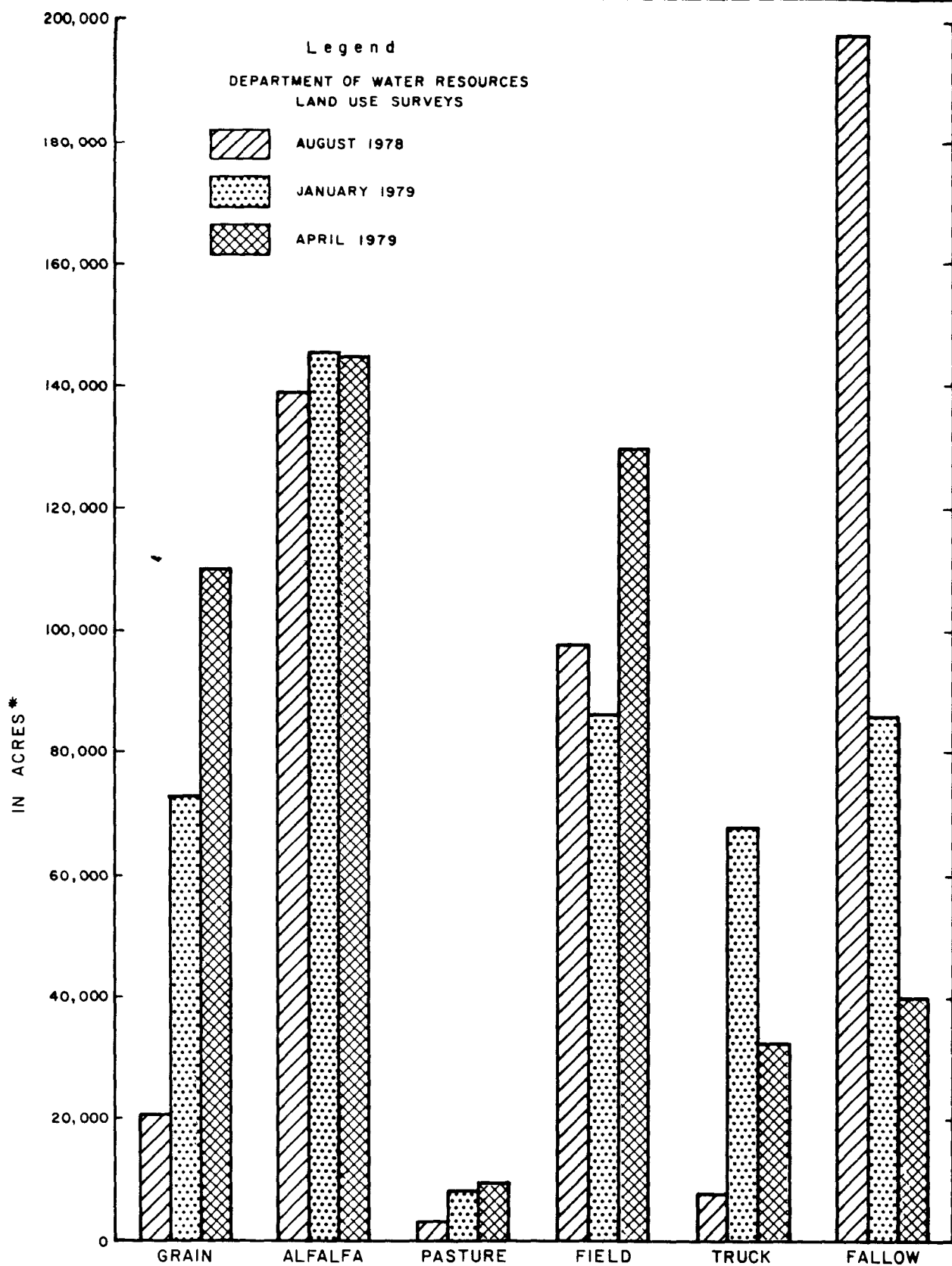
planimeter because of budget restrictions and tabulating the data manually. The accuracy of the cut and weigh process is usually $\pm 0.5\%$ with a tolerance of $\pm 2\%$ and the planimeter method accuracy is $\pm 2.5\%$. The data processing is discussed in greater detail on page five of the 1978 Coachella and Imperial Valleys Land Use Study.

V. MULTIPLE CROPPING AND IRRIGATED ACREAGES

The frostfree period in the Imperial Valley is approximately 300 days each year (mid-March to mid-November). Because of this long period, many farmers are able to grow more than one crop on the same land in the same year. This procedure is sometimes called multiple cropping or duplicate cropping.

The land use study was designed to map the agriculture in different seasons in order to obtain information on seasonal land use changes. Figure 2 is a graph showing the distribution of major agricultural land use for the three DWR land use surveys with the acreages rounded to the 500. Table 1 is a listing of all the land use acreages rounded to the nearest ten.

Yearly cropping patterns can be seen in Figure 2. Alfalfa acreages remain fairly stable throughout the year, as do permanent mixed pasture acreages. Since cotton and sugar beets are also grown year round, the fluctuation of field crop land use reflects the cropping patterns of sorghums, sudan grass, and corn. The truck crop acreages also reflect the planting-harvesting schedule in the Valley as most truck crops are grown in the period from September through June or July. The reported fallow acreage does not reflect actual fallow lands in the field as any lands that were in a tilled state were mapped as fallow because the DWR land use classification at the time of these surveys did not have a category for land being prepared for another crop.



*ONE ACRE = .40469 HECTARE

Figure 2 - IMPERIAL VALLEY AGRICULTURAL LAND USE

TABLE 1
IMPERIAL VALLEY LAND USE STUDY

in acres*

Crops	1st survey August 78	2nd survey January 79	3rd survey April 79
Grain	20,820	72,980	110,100
Grain Fallow	69,810	16,190	6,750
Alfalfa	138,760	145,330	145,250
Pasture	3,380	8,580	9,600
Pasture Fallow	41,660	15,400	3,150
Field	97,830	86,370	130,200
Field Fallow	55,370	42,710	14,710
Truck	7,890	68,040	32,300
Truck Fallow	28,050	9,400	12,510
Deciduous	80	70	70
Citrus	1,730	1,710	1,690
Rice**	6,290	8,010	8,280
Cropped Total	273,870	388,190	434,660
Fallow Total	197,800	86,600	39,950
Subtotal	<u>471,670</u>	<u>474,790</u>	<u>474,610</u>
Abandoned Tree Crops	110	110	110
Idle (>2 seasons)	4,840	3,540	3,660
Total Agriculture	476,620	478,440	478,380

*One acre = 0.40469 hectare

**This category is the seasonal duck ponds labeled Rice because the water use is similar.

TABLE 2

LAND USE ACREAGES THAT REMAINED THE SAME BETWEEN SURVEYS

	in acres*					
	Grain	Alfalfa	Pasture	Truck	Field	Fallow
1st to 2nd surveys	8,800	101,500	1,900	4,700	38,600	36,600
2nd to 3rd surveys	61,300	135,000	5,600	17,400	73,800	24,900

*one acre = 0.40469 hectare

Table 2 is an indication of numbers of acres that remained in the same type of land use from survey to survey. It also reflects the actual fallow land in the field better than that reported in Figure 2 (or Table 1). The IID, in published land use figures, indicates 23,469 and 19,511 acres of fallow land in 1978 and 1979, respectively. (These are contained in Appendix C under II Summary of Area Served). Table 3 and Table 4 reflect the shift in land use from survey to survey. Because of budget and manpower restrictions, the DWR basic data were not tabulated so as to provide information on multiple crop acreages. The IID claims 115,371 acres were duplicate cropped in 1978 and 116,414 acres in 1979 (Appendix C, II Summary of Area Served).

The IID obtains its crop information through a computer tabulated questionnaire. The local growers supply information in March, July, and at the end of the year (for the whole year only).

Unfortunately the DWR surveys are split between two years and the acreage figures do not easily compare with the IID figures; in Table 5 the DWR and IID figures, although different, do exhibit the same land use patterns. The differences in acreage figures are partially explained by variation in yearly crop plantings and time of surveys.

**TABLE 3
IMPERIAL VALLEY LAND USE SHIFTS
AUGUST 1978 TO JANUARY 1979
(in acres)***

1st Survey August 1978	2nd Survey January 1979	Agricultural														Nonagricultural					Acreage Shift Total		
		In Production							Out of Production							Agricultural Total	Non-agricultural						
		Grain	Alfalfa	Pasture	Truck	Field	Rice**	Irrigated Total	Grain	Pasture	Truck	Field	Rice**	Tilled Total	Idle		Urban	Semi- agricultural	Native vegetation	Water		Non- agricultural Total	
Agricultural	In Production	Grain	0	3,640	1,120	1,850	2,370	0	8,980	2,430	230	160	120	0	2,940	0	11,920	20	0	70	0	90	12,010
	Alfalfa	13,140	0	450	8,010	3,720	0	25,320	150	9,650	730	980	0	11,510	120	36,950	70	20	180	0	270	37,220	
	Pasture	390	320	10	0	330	0	1,050	0	470	0	0	0	470	0	1,520	0	0	0	0	0	1,520	
	Truck	0	850	0	1,320	240	0	2,410	90	0	680	0	0	770	0	3,180	0	0	0	0	0	3,180	
	Field	0	9,350	850	5,010	1,340	0	16,550	12,070	270	310	30,080	0	42,730	0	59,280	60	0	0	0	60	59,340	
	Rice**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Irrigated Total	13,530	14,160	2,430	16,190	8,000	0	54,310	14,740	10,620	1,880	31,180	0	58,420	120	112,850	150	20	250	0	420	113,270	
	Out of Production	Grain	16,930	11,080	1,120	14,770	10,410	40	54,350	0	110	1,100	580	0	1,790	0	56,140	0	0	290	20	310	56,450
	Pasture	5,480	8,340	1,180	15,710	5,880	20	36,610	0	0	290	150	0	440	0	37,050	0	0	10	0	10	37,060	
	Truck	5,090	3,210	600	5,550	7,850	0	22,300	130	0	0	210	0	340	40	22,680	20	0	0	0	20	22,700	
Field	9,700	6,280	1,200	11,510	15,080	40	43,810	30	40	520	90	0	680	460	44,950	10	0	100	0	110	45,060		
Rice**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Tilled Total	37,200	28,910	4,100	47,540	39,220	100	157,070	160	150	1,910	1,030	0	3,250	500	160,820	30	0	400	20	450	161,270		
Idle	470	310	60	140	0	330	1,310	0	0	150	130	0	280	0	1,590	40	0	0	0	40	1,630		
Agricultural Total	51,200	43,380	6,590	63,870	47,220	430	212,690	14,900	10,770	3,940	32,340	0	61,950	620	275,260	220	20	650	20	910	276,170		
Nonagricultural	Urban	0	0	0	0	0	0	0	0	0	50	0	0	50	0	50	0	20	0	0	20	70	
	Semi- agricultural	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Native vegetation	20	370	50	470	110	410	1,430	0	10	30	50	0	90	140	1,660	110	10	0	10	130	1,790	
	Water	0	0	0	0	0	890	890	0	0	0	0	0	0	0	890	0	0	0	0	0	890	
	Non- agricultural Total	20	370	50	470	110	1,300	2,320	0	10	80	50	0	140	140	2,600	110	30	0	10	150	2,750	
Acreage Shift Total	51,220	43,750	6,640	64,340	47,330	1,730	215,010	14,900	10,780	4,020	32,390	0	62,090	760	277,860	330	50	650	30	1,060	278,920		

* One acre = .40469 hectare
** Seasonal duck ponds

This table shows only the amount of shift in land use from survey to survey. For example, 3,640 acres that had been planted in grain during the first survey were planted in alfalfa by the second survey. A total of 12,010 acres that had been planted in grain during the first survey shifted to some other land use by the second survey.

TABLE 4
IMPERIAL VALLEY LAND USE SHIFTS
JANUARY TO APRIL 1979
(in acres)*

2nd Survey January 1979		3rd Survey April 1979		Agricultural													Nonagricultural				Acreage Shift Total			
				In Production							Out of Production						Agricultural Total	Urban	Semi- agricultural	Native vegetation		Water	Non- agricultural Total	
				Grain	Alfalfa	Pasture	Truck	Field	Rice**	Irrigated Total	Grain	Pasture	Truck	Field	Rice**	Tilled Total								Idle
Agricultural	In Production	Grain	70	2,570	1,580	750	5,860	80	10,910	400	120	0	230	0	750	0	11,660	0	0	30	0	30	11,690	
		Alfalfa	4,860	0	940	560	3,190	0	9,550	0	530	90	120	0	740	0	10,290	0	0	0	0	0	0	10,290
		Pasture	740	1,540	0	0	680	0	2,960	0	30	0	0	0	30	0	2,990	0	0	0	0	0	0	2,990
		Truck	19,110	1,540	480	5,590	13,090	0	39,810	80	70	10,600	40	0	10,790	0	50,600	0	0	0	0	0	0	50,600
		Field	5,740	1,610	330	800	1,600	100	10,180	0	10	2,370	0	0	2,380	0	12,560	0	0	0	0	0	0	12,560
		Rice**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Irrigated Total		30,520	7,260	3,330	7,700	24,420	180	73,410	480	760	13,060	390	0	14,690	0	88,100	0	0	30	0	30	88,130	
	Out of Production	Grain	3,390	670	130	760	4,130	70	9,150	0	0	0	140	0	140	480	9,770	0	0	70	220	290	10,060	
		Pasture	4,950	1,190	430	570	5,820	0	12,960	0	0	0	0	0	90	13,050	0	0	0	0	0	0	13,050	
		Truck	1,050	260	0	2,280	3,910	40	7,540	50	0	0	0	0	50	7,590	0	0	0	0	0	0	7,590	
Field		8,820	750	80	3,490	17,680	160	30,980	0	0	0	0	0	0	30,990	0	0	0	0	0	0	30,990		
Rice**		70	0	0	0	0	0	70	0	0	0	0	0	0	70	0	0	0	0	0	0	70		
Tilled Total		18,280	2,870	640	7,100	31,540	270	60,700	50	0	0	140	0	190	580	61,470	0	0	70	220	290	61,760		
Idle		0	0	0	60	240	0	300	0	40	0	80	0	120	0	420	10	0	40	0	50	470		
Agricultural Total		48,800	10,130	3,970	14,860	56,200	450	134,410	530	800	13,060	13,670	0	15,000	580	149,990	10	0	140	220	370	150,360		
Nonagricultural	Urban	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Semi- agricultural	0	0	10	0	20	0	30	0	0	0	0	0	0	10	40	10	0	0	0	10	50		
	Native vegetation	0	80	10	10	180	0	280	0	0	10	0	0	10	0	290	0	0	0	0	0	290		
	Water	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
	Non- agricultural Total		0	80	20	10	200	0	310	0	0	10	0	0	10	10	330	10	0	0	0	10	340	
Acreage Shift Total		48,800	10,210	3,990	14,870	56,400	450	134,720	530	800	13,070	13,670	0	15,010	590	150,320	20	0	140	220	380	150,700		

* One acre = .40469 hectare
 ** Seasonal duck ponds

This table shows only the amount of shift in land use from survey to survey. For example, 2,570 acres that had been planted in grain during the second survey were planted in alfalfa by the third survey. A total of 11,690 acres that had been planted in grain during the second survey shifted to some other land use by the third survey.

TABLE 5

DEPARTMENT OF WATER RESOURCES--IMPERIAL IRRIGATION DISTRICT

SURVEY COMPARISON

In Acres*

Crops	IID** 7-1-78	DWR 8-78	IID** 3-1-79	DWR 4-79
Grain	4,287	20,820	102,690	110,100
Alfalfa	141,960	138,760	138,791	145,250
Pasture	7,118	3,380	14,548	9,600
Field	88,427	97,830	93,726	130,200
Truck	7,428	7,890	37,738	32,300
Deciduous ~	94	80	146	70
Citrus	1,873	1,730	1,753	1,690
Rice***	<u>6,865</u>	<u>6,290</u>	<u>7,054</u>	<u>8,280</u>
<u>Cropped Total</u>	258,052	276,780	396,446	437,490

*One acre = 0.40469 hectare

**The IID crop list has been regrouped to coincide with DWR classifications.

***This category is the seasonal duck ponds labeled Rice because the water use is similar.

APPENDIXES

APPENDIX A




MAJOR CROPS GROWN IN THE IMPERIAL VALLEY*

Pasture and Grains	Field	Truck
Alfalfa	Sudan grass	Asparagus
Wheat	Sorghum	Broccoli
Barley	Cotton	Melons
Mixed grasses	Sugar Beets	Squash
	Corn (field and sweet)	Cucumbers
	Soy Beans	Carrots
		Garlic
		Onions
		Lettuce
		Tomatoes
		Cabbage

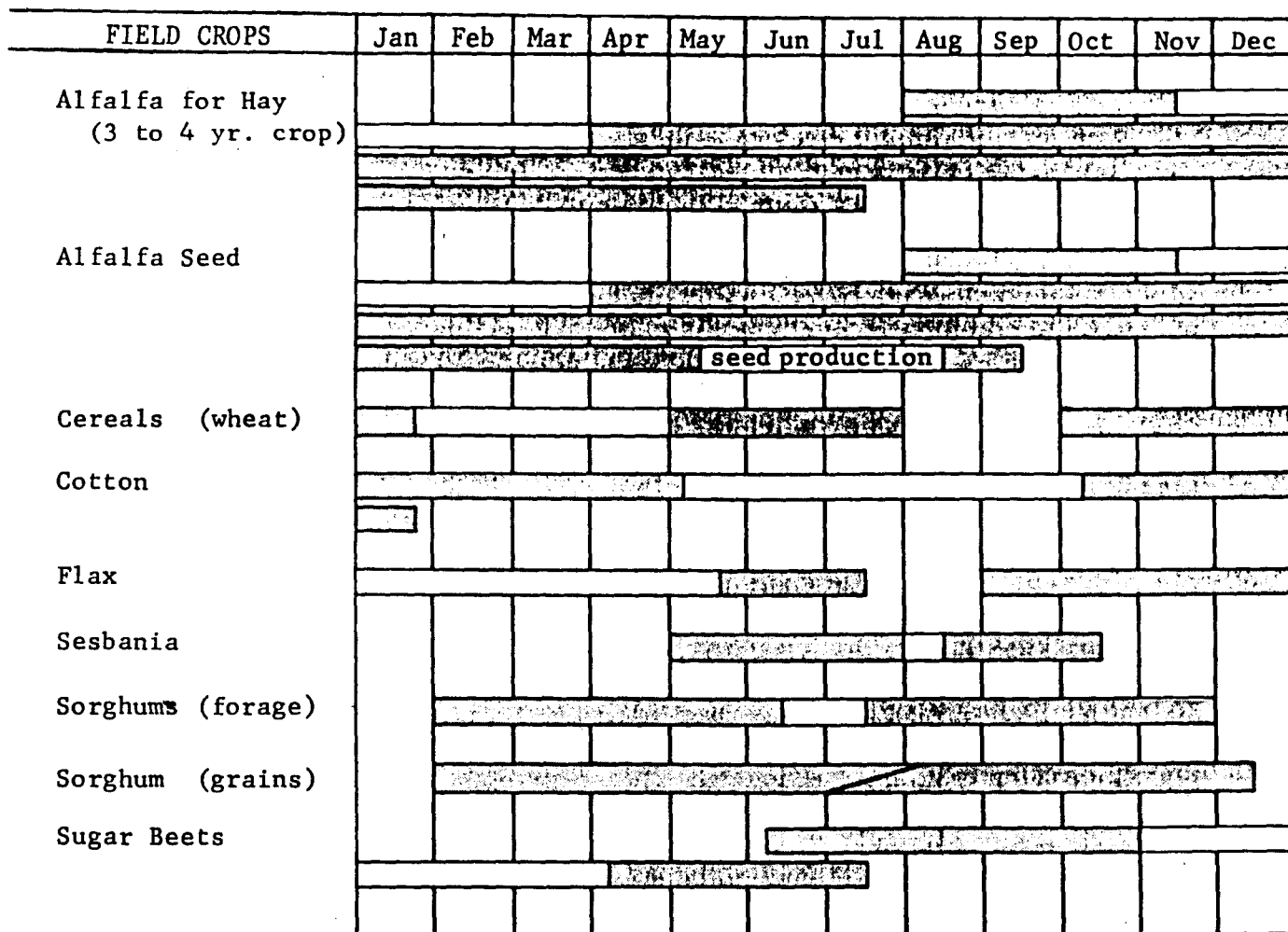
*Those crops with more than 300 acres cropped in 1978 grouped in DWR Land Use Categories.

SCHEDULE OF MAJOR CROPS - PLANTING AND HARVEST - IMPERIAL VALLEY

VEGETABLE CROPS	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
MAJOR CROPS												
Asparagus							seed, crowns					
Broccoli												
Cantaloupes					cap / open							
Carrots												
Garlic												
Lettuce												
Onions												
- Dehydrator												
- Fresh market												
- Seed												
Tomatoes												
- Open, cannery												
- Brushed, staked												
Watermelons					cap / open							
MINOR CROPS												
Cabbage												
Cucumbers												
Melons												
- Casaba												
- Honeydew					cap / open							
- Persian												
Rapini												
Okra												
Onions												
- Bunching												
Romaine												
Sweet Corn												
Squash												
- Summer												
- Banana												

Preparation & planting  Cultivation, growth & lay-by  Harvest 

Seed crops follow seasonal cropping.
 Cattle feeding is a major operation throughout the year.
 Lamb feeding - December through March.



Preparation & planting Cultivation, growth & lay-by Harvest

Alfalfa seed is usually produced in the last year of hay production. Hay is harvested until about May 15; then seed is produced during June, July and August. Seed is harvested from about August 15 through September 15.

Grain sorghums may be planted from February 15 to August 10. The crop may be harvested from July 1 to December 15. Decisions on when to plant and the variety to be grown depend on management practices and other crop schedules.

These charts graphically illustrate the calendar of events for major crops grown in Imperial County. The periods of planting and harvesting represent the general trend and do not illustrate the variations in practices which may be utilized.

APPENDIX C

**IMPERIAL IRRIGATION DISTRICT
ANNUAL INVENTORY OF AREAS RECEIVING WATER
YEARS 1979, 1978, 1977**

Note: This survey and annual inventory revises and supersedes previous reports.

I CROP SURVEY

GARDEN CROPS	A C R E S			GARDEN CROPS	A C R E S		
	1979	1978	1977		1979	1978	1977
Broccoli	2 756	2 359	1 860	Tomatoes, Spring	2 983	3 162	4 195
Broccoli (Seed)	44	73	-	Tomatoes, Fall	155	221	160
Cabbage	754	405	230	Turnips	183	127	75
Cabbage (Seed)	38	-	11	Vegetables, Mixed	10	12	43
Carrots	9 153	6 489	4 394	Vegetables, Mixed (Seed)	80	19	11
Carrots (Seed)	45	109	35	Waterlilies	16	16	16
Cauliflower	189	-	-	Chicory	101	195	190
Cauliflower (Seed)	43	18	13	Chicory (Seed)	-	7	-
Collards (Seed)	14	-	-	Sesame (Seed)	-	1	-
Cucumbers	362	534	523	Totals	89 086	84 715	74 574
Celery	139	80	-				
Dill	14	-	-	<u>FIELD CROPS</u>			
Dill (Seed)	-	22	-	Alfalfa	187 926	178 135	176 328
Ear Corn	620	1 052	297	Alfalfa (Seed)	3 362	2 319	1 524
Endive (Seed)	-	-	7	Alicia Grass	325	965	821
Beans, Fava	5	-	-	Barley	4 098	7 735	6 761
Flowers	12	6	-	Bermuda Grass	2 211	2 351	3 047
Flowers (Seed)	-	16	-	Bermuda Grass (Seed)	4 939	2 837	1 349
Garlic	544	658	380	Cotton	82 757	61 758	138 128
Gourds	-	14	-	Grass, Mixed	845	652	5
Herbs, Mixed	8	-	1	Oats	495	182	780
Herbs (Seed)	4	28	24	Field Corn	-	484	-
Lettuce	43 647	41 596	39 230	Rye Grass	2 438	8 294	5 571
Lettuce (Seed)	-	5	8	Safflower	-	70	-
Lettuce, Chinese	12	16	-	Sesbania	-	150	-
Lettuce, Romaine	88	26	18	Sorghum Silage	510	444	465
Melons				Sorghum Grain	8 497	15 155	7 164
Cantaloupes, Spring	6 582	8 240	8 003	Soy Beans	3 092	3 342	81
Cantaloupes, Fall	3 845	4 884	2 443	Sudan Grass	24 438	11 761	6 566
Cantaloupes (Seed)	-	-	48	Sudan Grass (Seed)	-	75	-
Casaba, Spring	16	-	-	Sugar Beets	47 804	36 459	59 789
Casaba, Fall	217	451	16	Wheat	99 932	135 488	67 503
Crenshaw, Spring	91	259	4	Totals	473 669	468 656	475 882
Crenshaw, Fall	200	468	315				
Honeydew, Spring	86	18	-	<u>PERMANENT CROPS</u>			
Honeydew, Fall	1 276	1 452	985	Artichoke	-	5	-
Honeydew (Seed)	-	3	-	Asparagus	3 473	3 565	3 719
Mixed, Fall	88	62	-	Citrus			
Watermelons	3 136	1 022	3 146	Grapefruit	295	368	442
Watermelons (Seed)	-	15	20	Lemons	777	765	660
Mustard	242	155	212	Mixed	220	220	219
Mustard (Seed)	10	33	5	Oranges	334	354	380
Okra	40	36	-	Tangerines	79	96	186
Okra (Seed)	106	67	-	Dates	62	69	74
Onions	7 197	6 917	4 605	Duck Ponds (Feed)	7 178	7 243	7 635
Onions (Seed)	2 449	1 910	1 769	Fish Farms	529	529	537
Parsley	15	64	-	Fruit, Mixed	32	30	86
Parsley (Seed)	12	-	25	Jojoba	33	2	2
Parsnips	18	-	37	Nursery	7	7	-
Peas	-	69	90	Ornamental Shrubs	-	-	9
Peas (Seed)	10	-	4	Palms	1	1	-
Radishes	25	3	-	Pasture, Permanent	457	277	729
Radishes (Seed)	-	-	7	Peaches	73	21	-
Rapini	170	149	110	Pecans	43	43	46
Rutabagas	38	45	38	Totals	13 593	13 595	14 724
Squash	1 147	1 078	971				
Squash (Seed)	31	18	-	Total Acres of Crops	576 348	566 966	565 180
Sweet Basil	20	20	-				
Swiss Chard	-	1	-				
Swiss Chard (Seed)	-	10	-				

Note: Crops are listed for the year in which they are predominately harvested.

SUMMARY

	1979	1978	1977
Number of Farm Accounts	7 102	6 768	6 893
Number of Owner-Operated Farm Accounts	(41.1%) 2 919	(41.4%) 2 799	(42.1%) 2 902
Number of Tenant-Operated Farm Accounts	(58.9%) 4 183	(58.6%) 3 969	(57.9%) 3 991
Average Acreage of Farm Accounts	69.15	71.83	70.62

IF SUMMARY OF AREA SERVED

	A C R E S		
	<u>1979</u>	<u>1978</u>	<u>1977</u>
Field Crops	473 669	468 641	475 882
Garden Crops	89 086	84 715	74 574
Permanent Crops	<u>13 593</u>	<u>13 595</u>	<u>14 724</u>
Total Acres of Crops	576 348	566 951	565 180
Total Duplicate Crops	<u>116 414</u>	<u>115 371</u>	<u>105 551</u>
Total Net Acres in Crops	459 934	451 580	459 629
Area Being Reclaimed: Leached	<u>184</u>	<u>568</u>	<u>300</u>
Net Area Irrigated	460 118	452 148	459 929
Area Farmable but not Farmed during Year (Fallow Land)	<u>19 551</u>	<u>23 469</u>	<u>16 665</u>
Total Area Farmable	479 669	475 617	476 594
Area of Farms in Homes, Feed Lots, Corrals, Cotton Gins, Experimental Farms, and Industrial Areas	13 564	13 847	12 791
Areas in Cities, Towns, Airports, Cemeteries, Fairgrounds, Golf Courses, Recreational Parks	<u>16 006</u>	<u>12 561</u>	<u>12 442</u>
Total Area Receiving Water	509 239	502 305	501 827
Area in Drains, Canals, Rivers, Railroads, and Roads	73 278	73 252	73 442
Area below -230 Salton Sea Reserve Boundary and Area Covered by Salton Sea	39 419	39 411	39 379
Area in Imperial Unit not Entitled to Water	63 933	63 933	63 933
Undeveloped Area of Imperial, West Mesa, East Mesa, and Pilot Knob Units	<u>289 218</u>	<u>296 186</u>	<u>296 506</u>
Total Acreage Included - All Units	975 087	975 087	975 087
Acreage Not Included - All Units	<u>87 203</u>	<u>87 203</u>	<u>87 203</u>
Total Gross Acreage within District Boundaries	1 062 290	1 062 290	1 062 290

IMPERIAL IRRIGATION DISTRICT

J. R. Wilson

J. R. WILSON, Manager
Water Department

Area within District Boundaries that is not Included in District