



IRZ CONSULTING, LLC

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July 6, 2004

Dear Mr. Flynn,

Thank you for contacting IRZ Consulting to do this land use classification and crop rotation study of the WRIA 31 watershed. We have enjoyed working on this project and hope to be able to work with you again in the future.

Attached are two pages containing our results. If you have any questions please feel free to contact me at (541) 567-0252 or on my mobile phone at (541) 571-1113. Thanks.

Best,

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WRIA 31 - Agricultural Production

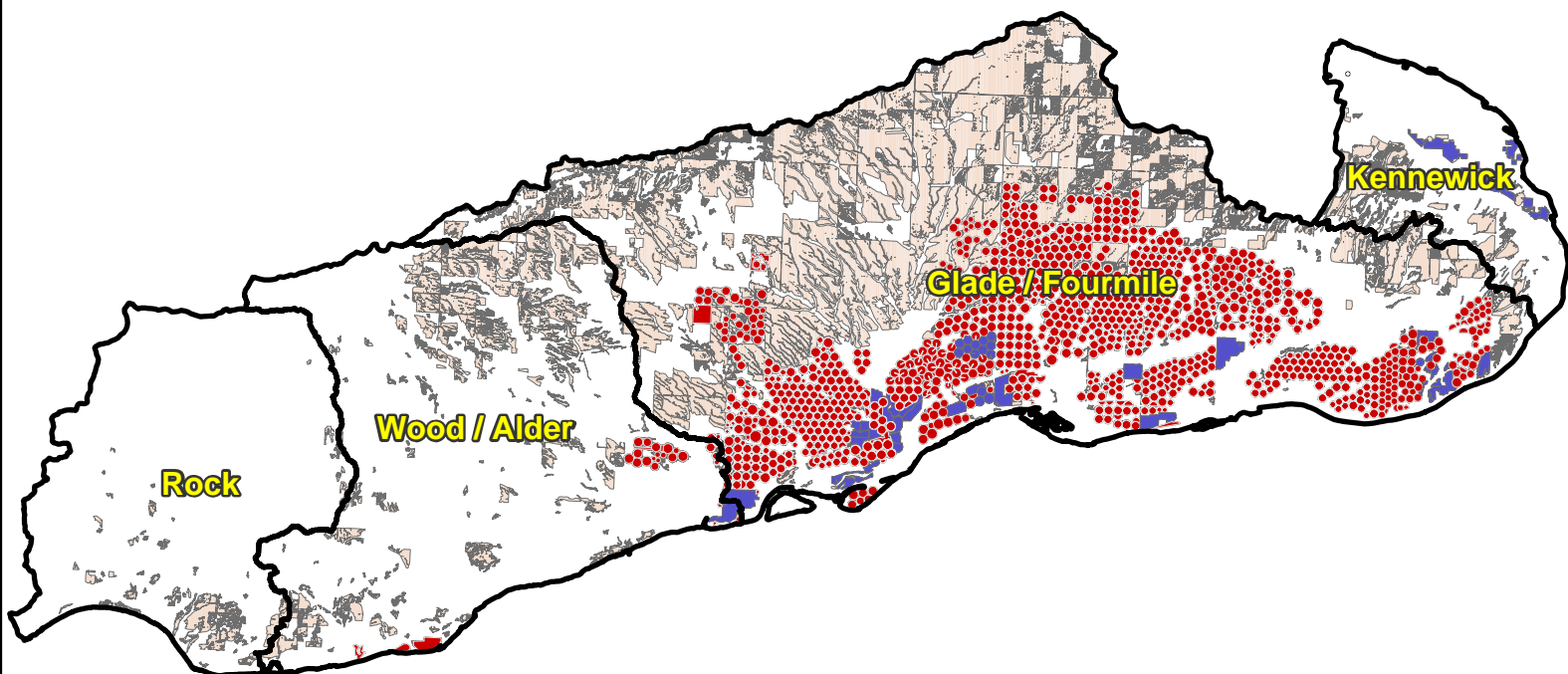


Table 1: WRIA 31 Acreage by Sub-basin

	Total Acres	Ag Production Acres	Total Dryland Acres	Total Irrigated Acres	Irrigated	
					Permanent Acres	Row Crop Acres
Glade / Fourmile	529,275	315,088	184,079	131,009	11,303	119,706
Kennewick	70,596	14,937	12,158	2,779	2,746	32
Rock	165,084	7,284	7,284	0	0	0
Wood / Alder	255,282	43,366	39,568	3,798	759	3,039

Agricultural Cropland

- Permanent Crop
- Seasonal/Row Crop
- Dryland Crop



0 2.5 5 10 Miles



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Crop Rotation

Dryland acres and Irrigated acres have been delineated based on Spot Satellite imagery from 2001 as well as crop rotation records from the same year. The numbers provided are approximate based on the best and most recent information available. A more accurate study would require gathering satellite and ground data over several growing seasons. High accuracy is difficult to obtain due to changing variables such as water availability, power costs and market demands.

The five farms used in this crop rotation study are located within the Glade/Fourmile sub-basin of the WRIA 31 boundary. They range in size from 2,000 to 15,000 acres and are representative of the farming practices in the area.

Table 2 shows a typical row crop rotation for each farm as a percentage of the total row crop acres as well as an average of all the farms studied. The total percentage is over 100% representing the usage of wheat cover crops for erosion control and the practice of double cropping or planting two consecutive crops on the same field during the same growing season (e.g. peas followed by sweet corn). We estimate water usage in wheat cover crops to be approximately 1/3 that of a full season wheat crop.

Table 2: Typical Row Crop Rotation as a Percentage of Total Row Crop Acres

Farm A		Farm B		Farm C		Farm D		Farm E		Average	
Sugar Beets	0%	Sugar Beets	0%	Sugar Beets	0%	Sugar Beets	17%	Sugar Beets	0%	Sugar Beets	3%
Field Corn	0%	Field Corn	19%	Field Corn	39%	Field Corn	29%	Field Corn	0%	Field Corn	17%
Grass Seed	20%	Grass Seed	0%	Grass Seed	0%	Grass Seed	5%	Grass Seed	0%	Grass Seed	5%
Onions	5%	Onions	0%	Onions	1%	Onions	1%	Onions	7%	Onions	3%
Potatoes	31%	Potatoes	32%	Potatoes	31%	Potatoes	29%	Potatoes	30%	Potatoes	31%
Sweet Corn	37%	Sweet Corn	30%	Sweet Corn	6%	Sweet Corn	2%	Sweet Corn	26%	Sweet Corn	20%
Wheat	1%	Wheat	13%	Wheat	24%	Wheat	18%	Wheat	37%	Wheat	19%
Peas	12%	Peas	0%	Peas	0%	Peas	0%	Peas	0%	Peas	2%
Alfalfa	7%	Alfalfa	0%	Alfalfa	0%	Alfalfa	0%	Alfalfa	0%	Alfalfa	1%
Carrots	4%	Carrots	0%	Carrots	0%	Carrots	0%	Carrots	37%	Carrots	8%
Wheat (cover)	40%	Wheat (cover)	51%	Wheat (cover)	70%	Wheat (cover)	76%	Wheat (cover)	74%	Wheat (cover) ¹	62%
Total	157%	Total	146%	Total	170%	Total	176%	Total	211%	Total ²	172%

1 Wheat cover crops are used primarily for erosion control. We estimate the water usage to be approximately 1/3 that of a full season wheat crop.

2 Totals of over 100% represent wheat cover crops for erosion control and the practice of double cropping (e.g. peas followed by sweet corn) in the same growing season.

Permanent crops (orchards/vineyards) are not included in Table 2. We estimate, based on personal knowledge of the area, that there is an even split in permanent crops between orchards (including apples, cherries and poplar trees) and vineyards.