

Checking on Chickpeas: Future Production in Whitman County, Washington

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Introduction

As a component of a term-long research project on the environmental constraints of increased fruit, vegetable, and nut consumption to meet the needs of an American diet in line with the Dietary Guidelines for Americans (DGAs), chickpeas were utilized as a case study crop. Classified as a vegetable and protein and steadily on the rise in American consumption, chickpeas are a feasible way for individuals' to increase their vegetable consumption. As a preliminary step in calculating the production requirements to meet increased chickpea production, a comprehensive understanding had to be set for current chickpea production.

Locating Chickpeas

The challenge of this project was to identify exactly where chickpeas are being grown within Whitman County, WA. First looking to the USDA's National Agricultural Statistics Service's CropScape Cropland Data Layer for chickpea production in the county, there was no specific available data on the crop. Despite having chickpeas within the legend, there was none to be found through the dataset for Whitman County.

Through a review of the literature, it was clear data was available on the entirety of Whitman County's production; however, I was soon to find that the Washington State Department of Agriculture (WSDA) alone gathered data on the location of this specific crop. Utilizing the WSDA's Agricultural Land Use layer, alongside their Crop Data table, the location of chickpeas was identified by the township, range, and section their field polygon resides in.

The Case for Chickpeas

Incorporation of this nitrogen-fixing pulse into rotations is beneficial not only for soil quality, but for the economic interests of farmers. Per capita chickpea (garbanzo) consumption more than doubled from 2010-2014, primarily due to hummus demand; following this demand, in 2015-2016, the farm-gate season average price of chickpeas rose \$1.40, reaching \$28.30 per cwt (Bond and Wells, 2016). In the same year, the farm-gate season average price of wheat \$2.93 cwt (ERS, 2017).

Conclusions

While we know production of chickpeas is occurring in Whitman County, further data collection is necessary to confirm the exact locations of these crops. Viewing the data at the level of the TRS the field polygon resides in gives finer data than the county level, but is not as precise as it could be with latitudinal and longitudinal coordinates.

Another issue of this data is awareness of crop rotations. Considering the lack of chickpea data in CropScape, it is possible it is the result of the data collectors making a choice between rotational crops. Compared to the major commodities it is rotated with, chickpeas are not as major of a crop, and likely to be less observed. While the WSDA does include basic rotation information, greater understanding of the exact times of each rotation alongside the crops rotated with will give a more holistic picture of what is being produced throughout Whitman County.

Next steps for this project involve further research on Whitman County's rotations, as well as expanding the scope to include Walla-Walla County. Thinking in the even bigger picture, consideration of other states where chickpeas are currently produced and could displace other crops, particularly wheat, to increase total production is a future goal.

Hummus sales have risen from less than \$10 million in the late 1990s, to recent sales of \$700-800 million (Bond, 2017). In conjunction with these sales, domestic consumption of chickpeas has increased from 0.22 pounds per person in 1999 to 0.7 pounds per person in 2014— a 300% increase in consumption (Vegetable & Pulse Yearbook, 2015; Lucier, 2000). The USDA Economic Research Service 's estimates for 2017 chickpea consumption anticipate per capita chickpea availability at 1.85 pounds per person, and national annual consumption to reach 1.3 pounds per person (Minor, 2017).

Crop Displacement

Looking to a future of increased chickpea production, expanding the crop's agricultural footprint through displacement of other crops in or near the production center is the best mechanism. Overall, domestic chickpea area planted rose 55% from 2015 to 2016, resulting in 321,000 acres planted of chickpeas across the United States (NASS, 2016). The increase has displaced wheat in Idaho, Montana, and North Dakota, while wheat production in these areas has either decreased or remained stagnant (Bond, 2017 and Bond and Wells, 2016). The trend of displacement has not been reported in Washington state; however, chickpeas and wheat are frequently utilized in rotation with one another.

There is also the question of whether other legumes could be displaced to increase chickpea production. As can be seen in figure 3, 76,363 acres of legumes other than chickpeas are currently produced in Whitman, including alfalfa, beans, lentils, and peas.

Chickpea Production Centers

In the United States, chickpeas are grown in Washington, Idaho, Montana, California, and North Dakota. In recent years, production has become increasingly concentrated in Washington and Idaho (Bond, 2017). Defining production centers as those that produce at least 10% of the national supply of a crop, Washington is a major production center producing 42% of the national supply (AgMRC, 2016). Specifically, production is centered in Walla-Walla and Whitman counties in southeastern part of the state (NASS, 2016a).



Figure 1. Chickpeas

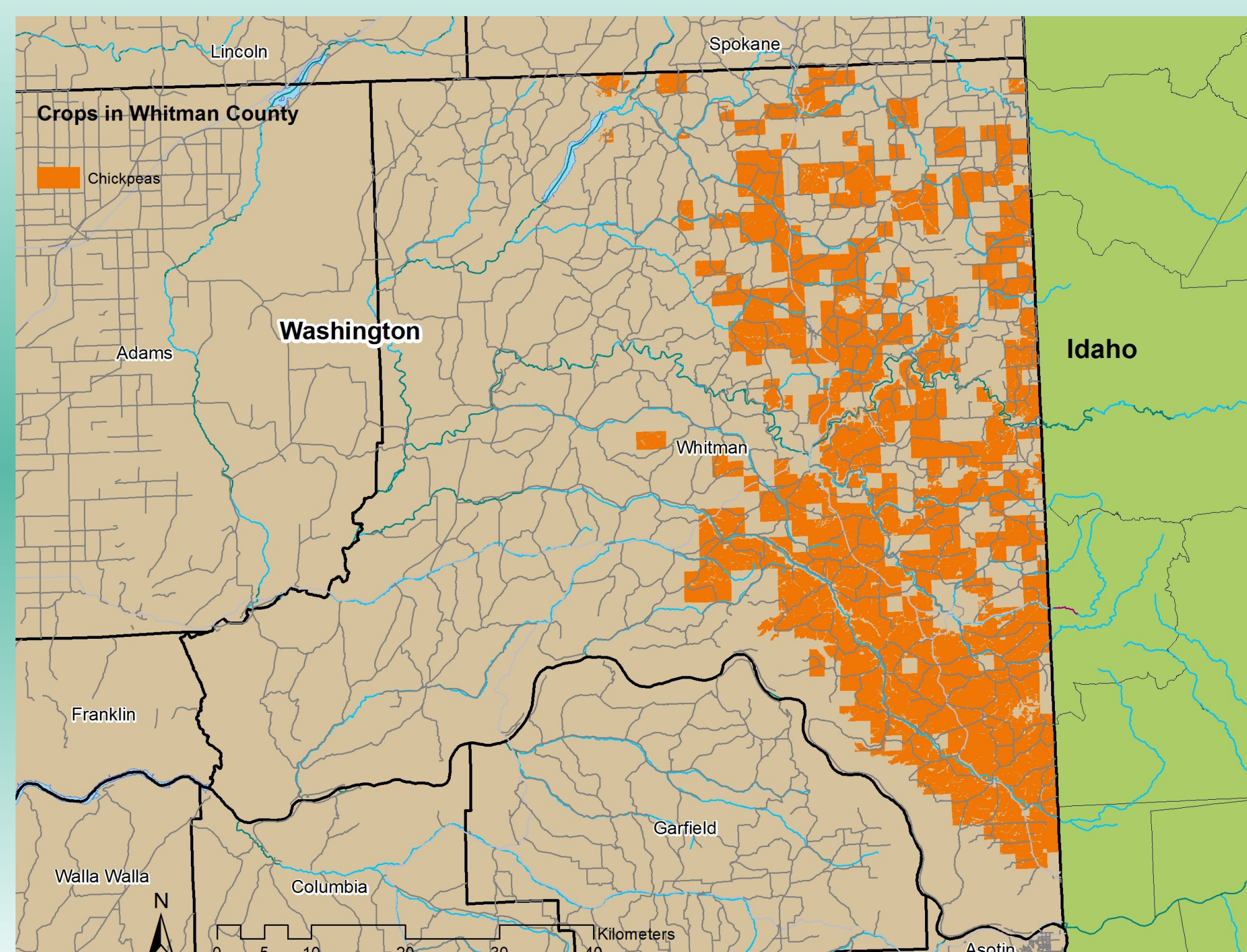


Figure 2. Wheat

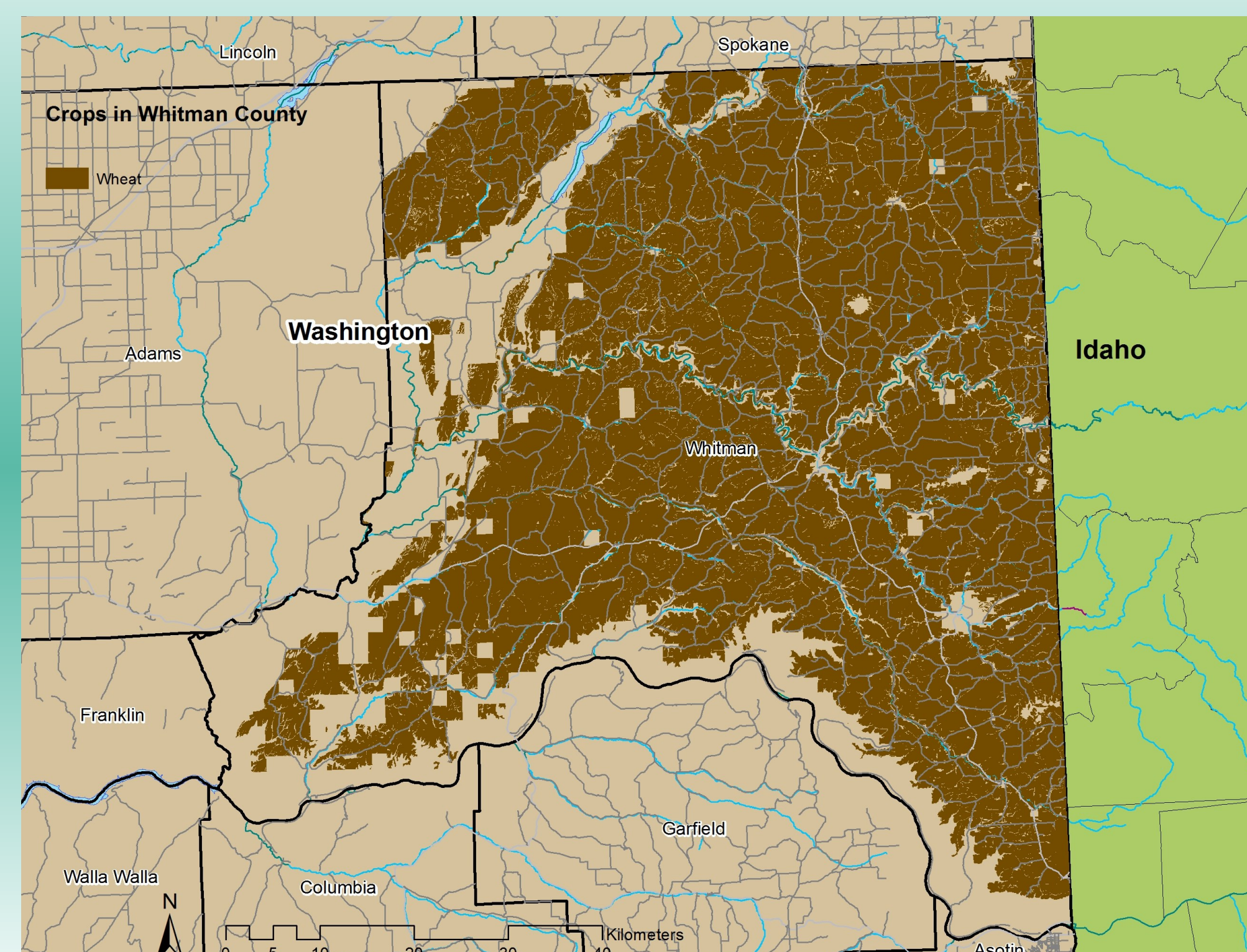
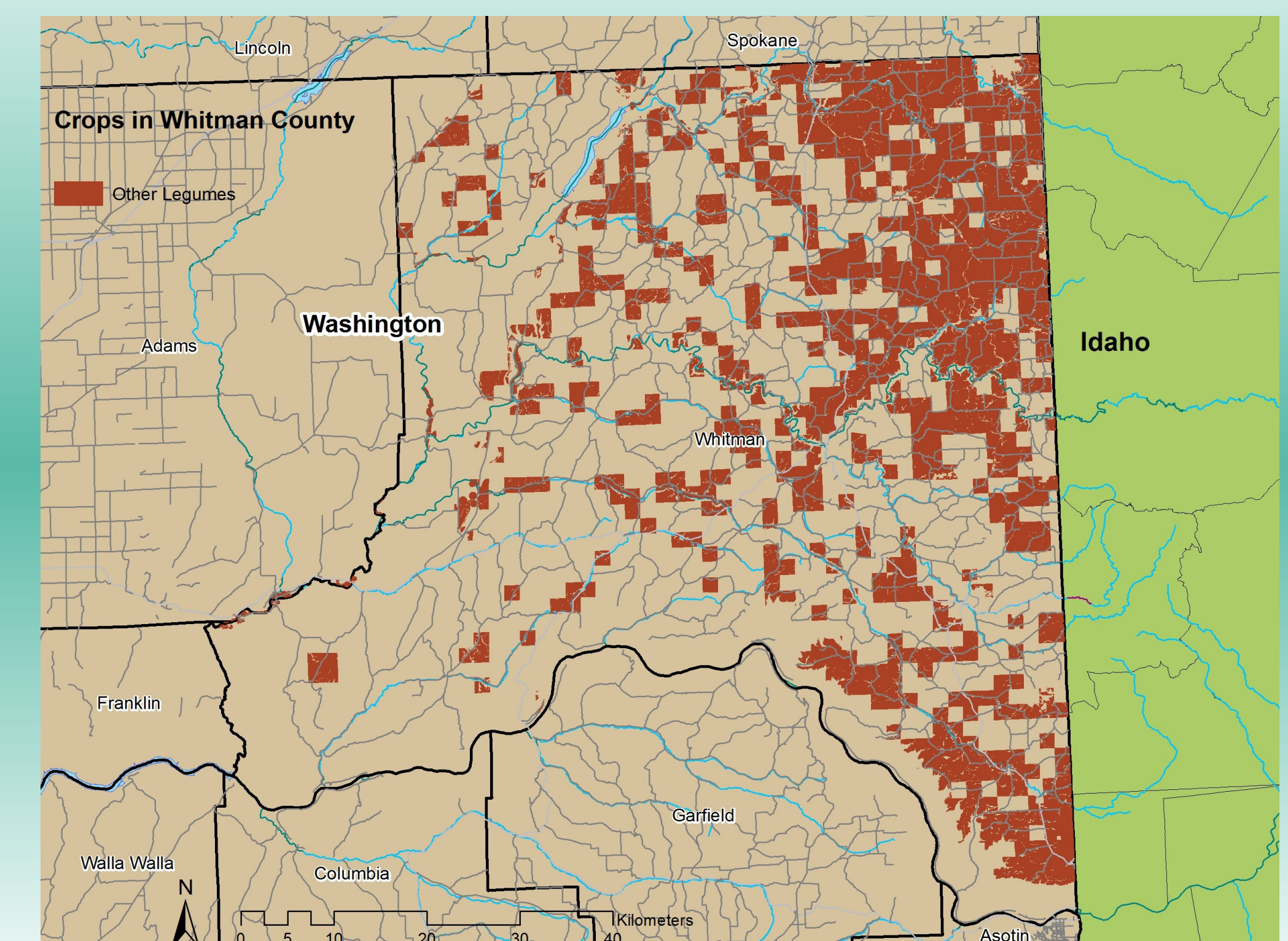


Figure 3. Other Legumes



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