Community Food Assessment
Central Oregon 2018
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A special thank you to those who planned and participated in the Food Education Agriculture Solutions Together (FEAST) events, including the community members in Crook County, the Confederated Tribes of Warm Springs, and Crook County on the Move. We would also like to thank Derek Hofbauer of Central Oregon Intergovernmental Council for assistance with survey development.
Executive Summary

Food systems are complex, geographically and idealistically fragmented, diverse and multi-faceted. Our food system is more than the sum of its parts, and there is unlikely a one-size-fits-all solution to any issue. Foods that are consumed at restaurants or from grocery stores may not be grown, raised or processed locally, but that does not mean that for these consumers a food system does not exist. We all have to eat, how we eat, what we eat, what our preferences are and where we find it varies tremendously. This assessment takes a big picture look at the Central Oregon food system in all its parts.

Central Oregon is community located on the east side of the Cascade mountain range and on a high plateau. The region includes three counties and the Confederated Tribes of Warm Springs, and is similar in size to the state of New Hampshire. The region has seen tremendous population growth in the past 20 years, with a sizeable increase in the last five years. With this growth comes increasing complexities in the food system: more people to feed, increased need for access to fresh and healthy food, greater land prices, and limitations on distribution and transportation of food, specifically locally grown and raised food.

The Impact of Agriculture in Central Oregon

Central Oregon farms and ranches that are producing and raising edible foods to be consumed in the region, are typically small to mid-sized farms. The United States Census of Agriculture estimated a total of 2,308 farms with 41 percent cultivating on less than 10 acres and 70% earning less than $25,000 annually in gross sales. A 2016 survey of 28
Central Oregon small to mid-sized farms and ranches found that they grow, raise and sell products with the majority of sales being beef cattle and vegetables, and their primary markets being farm direct-to-consumers and wholesale. It was estimated that those surveyed produced 26 jobs for every $1 million in sales as compared to 12 jobs among commodity-focused producers. The report also found that if farms were to improve their efficiencies on existing farm acreage, that they could almost double their impact with an additional $1.68 million in wages and $5.4 million in sales.

Farm and Ranch Challenges and Opportunities

Farmers and ranchers may face different challenges, but there are themes that stand out. Statistics show that more than more farmers are nearing retirement without a younger generation in place, but that doesn’t mean there aren’t opportunities for on-farm training and succession planning to improve labor and land access issues. Water rights are a burden for many farmers as archaic Oregon water laws dating back to 1905 limit how and when farmers can access water, as well as litigation regarding the endangered Spotted Frog. Supportive organizations exist to help navigate these difficult areas, but farmers are still at the whim of decisions that are made “up stream” of their operations. That said, improved water efficiencies are available and with time could improve water access.

Access to affordable land and labor are difficult, especially as land prices rise and the stress on urban growth boundaries increases. A survey to determine what labor shortages do or don’t exist would be beneficial. Partnering with the Oregon Department of Agriculture and Oregon State University could assist farmers with improving food safety practices and scaling up from farm direct to wholesale, and understanding the impact of the Food Safety Modernization Act.
**Individual Gardening, Foraging, Hunting and Fishing**

Central Oregon has an abundance of opportunities for individuals to not only access food from regional farms and ranches but to also cultivate their own food. Seeds are being collected by the Central Oregon Seed Exchange and are donated to schools and offered to home gardeners and farmers at reasonable prices. School gardens are in abundance and are ever growing, while community gardens are available in most every city. There are six regional farmers market, half of which provide electronic benefit transfers to access SNAP benefits. Access to hunting (deer, elk, etc.) is easy, and hunters can donate to the regional food bank. Fishing and foraging are also easy and in abundance.

**Distribution, Processing and Energy**

Central Oregon is geographically isolated from the rest of the state, which makes transporting food into and out of the region both expensive and difficult as compared to other regions in the state. While there are three meat processing facilities, two of which are USDA certified, both processors and ranchers feel a pinch in terms of time and money, which could potentially be alleviated through improved communication and commitment by both parties. Throughout the U.S., the average piece of food travels 1,500 miles from farm to plate. Central Oregon could improve this “foodprint” by providing more local food options in regional grocery stores; educating and incentivizing public and alternative transportation options by both providers and individuals; and conducting a Life Cycle Assessment of Central Oregon’s local food system to determine the carbon footprint associated with food traveling from producer to consumer.

**Food Access**

Access to food can mean different things to different people: type of transportation used to get the food, type of store or facility, type of
available food, and how one prepares the food depends on many factors. Transportation by bus is a main mode for many people experiencing food insecurity, but a survey for this assessment found that service days and times may limit accessibility. Food can of course be found at grocery stores, but stores may be up to 50 miles away from some outlying communities, making access extremely limited and cost prohibitive for some. Food is also available free of charge at 47 food pantries throughout the region, but sometimes selection at these pantries can be limited.

Education plays a large part in how we shop and prepare foods. Cooking Matters, a regional program hosted by the High Desert Food & Farm Alliance provides food skills education, and there are plenty of other programs provided by regional partners that support nutrition education. Institutions, including school districts, the Deer Ridge Correctional Institution and colleges, offer local foods and programs that teach youth and adults about growing, harvesting, eating and/or cooking with fresh, healthy foods.

Food access looks different for every person. The regional food bank, NeighborImpact, plays a large role in facilitating the movement of food from the Oregon Food Bank, grocers, farmers and consumers into the hands of underserved individuals and families. Food insecurity can affect any individual, household or community, and multiple and overlapping issues such as poverty and access to health care can be a contributing factor.

**Everyone has a part in our food system.**
Chapter One

Introduction
What is a Community Food Assessment?

A Community Food Assessment (CFA) is a collaborative, participatory project that takes a big-picture look at our food system in all its parts from production and processing, to distribution, consumption, and waste, so that we can learn how it works and how to improve our food and farms. A CFA demonstrates our most pressing needs and key community assets, and is a resource and organizing tool. Actions identified in this CFA are both tangible and complex. The information gathered here helps make the case for strategies to mitigate these issues.

Information and community input regarding food, farm, ranch, and nutrition issues were gathered and documented through surveys, focus groups, and interviews with key food system stakeholders. Opportunities and recommendations are a culmination of opportunities suggested by stakeholders interviewed for this CFA, recommendations from previously written reports, suggestions from Central Oregon food system professionals, and opinions of the author from the process.

Why now?

In 2010, a Community Food Assessment for Central Oregon was published entitled *Pioneering a Local Food System in Central Oregon*. In part and as a result of that report, the High Desert Food & Farm Alliance was established and focused on food system issues throughout the High Desert. This Community Food Assessment is an update to that 2010 report, and highlights areas of growth and responses that have occurred in the food system of Central Oregon over the past eight years.

For the past ten to 20 years, Central Oregon has seen rapid population and economic growth, most notably concentrated in the city of Bend and Deschutes County. With the growth, comes increasing complexities in the food system. A growing population means more mouths to feed, an increase in production, greater use of utilities and inputs, and expansion of social services. It is for these reasons that it was determined an update to the 2010 CFA was necessary for providing direction towards the next ten years of growth of the Central Oregon food system.

Purpose

To identify key challenges and opportunities to grow a community-based food system that promotes healthy people, food and farms, a healthy local economy, while building local capacity to increase community food security.
**Partners**

High Desert Food & Farm Alliance, NeighborImpact, Cascade East Transit, Oregon State University Extension Services, Central Oregon Intergovernmental Council, Oregon Food Bank, Crook County on the Move, and OSU Master Gardeners.

**Process**

- Gather data, information, and community input regarding food system strengths, weaknesses, opportunities, and recommendations
- Engage, educate, and empower the community through the CFA process
- Facilitate strategic visioning

Adopted from the CS Mott Group at Michigan State University.
Six Basic Principles of Community Food Security (CFS)

Community food security represents a comprehensive strategy to address many of the ills affecting our society and environment due to an unsustainable and unjust food system. Following are six basic principles of community food security:

• **Low Income Food Needs**
  Like the anti-hunger movement, CFS is focused on meeting the food needs of low income communities, reducing hunger and improving individual health.

• **Broad Goals**
  CFS addresses a broad range of problems affecting the food system, community development, and the environment such as increasing poverty and hunger, disappearing farmland and family farms, inner city supermarket redlining, rural community disintegration, rampant suburban sprawl, and air and water pollution from unsustainable food production and distribution patterns.

• **Community Focus**
  A CFS approach seeks to build up a community’s food resources to meet its own needs. These resources may include supermarkets, farmers’ markets, gardens, transportation, community-based food processing ventures, and urban farms to name a few.

• **Self-Reliance/Empowerment**
  Community food security projects emphasize the need to build individuals’ abilities to provide for their food needs. Community food security seeks to build upon community and individual assets, rather than focus on their deficiencies. CFS projects seek to engage community residents in all phases of project planning, implementation, and evaluation.

• **Local Agriculture**
  A stable local agricultural base is key to a community responsive food system. Farmers need increased access to markets that pay them a decent wage for their labor, and farmland needs planning protection from suburban development. By building stronger ties between farmers and consumers, consumers gain a greater knowledge and appreciation for their food source.

• **Systems-Oriented**
  CFS projects typically are "inter-disciplinary," crossing many boundaries and incorporating collaborations with multiple agencies.

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**What is community food security?**
Community food security is a condition in which all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice.

---

--Mike Hamm and Anne Bellows

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- Community Food Security Coalition

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"Community Food Security Coalition"
## Our Food Community

The Central Oregon Community Food Assessment covers the geographic region of Crook, Deschutes, Jefferson Counties, and the Confederated Tribes of Warm Springs. Demographics are included as accurate and necessary information which represents the population included in this assessment.

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2017 (Census Estimates)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deschutes County</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population</td>
<td>157,733</td>
<td>186,875</td>
</tr>
<tr>
<td>Percent in Poverty</td>
<td>14.8%</td>
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<tr>
<td>Percent Rural</td>
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<tr>
<td>Median Household Income</td>
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<td>$54,211</td>
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<td><strong>Crook County</strong></td>
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<td></td>
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<tr>
<td>Population</td>
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<td>23,123</td>
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<tr>
<td>Percent in Poverty</td>
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<td>14.2%</td>
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<tr>
<td>Percent Rural</td>
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<td>Median Household Income</td>
<td>$42,582</td>
<td>$39,583</td>
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<td><strong>Jefferson County</strong></td>
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<tr>
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<td>21,750</td>
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<td>Percent in Poverty</td>
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<td><strong>Confederated Tribes of Warm Springs</strong></td>
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<td>Percent in Poverty</td>
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<td>35.7%</td>
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<tr>
<td>Percent Rural</td>
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<td>N/A</td>
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<tr>
<td>Median Household Income</td>
<td>$33,282</td>
<td>$34,300</td>
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### Demographics (2016)

<table>
<thead>
<tr>
<th></th>
<th>Crook</th>
<th>Deschutes</th>
<th>Jefferson</th>
<th>The Confederated Tribes of Warm Springs</th>
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<tr>
<td>% White</td>
<td>88.6%</td>
<td>87.9%</td>
<td>60.1%</td>
<td>4.6%</td>
</tr>
<tr>
<td>% Black</td>
<td>0.2%</td>
<td>0.5%</td>
<td>1.0%</td>
<td>1.0%</td>
</tr>
<tr>
<td>% Hispanic</td>
<td>7.4%</td>
<td>7.6%</td>
<td>19.8%</td>
<td>9.4%</td>
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<tr>
<td>% Asain</td>
<td>0.2%</td>
<td>1.0%</td>
<td>0.7%</td>
<td>0.4%</td>
</tr>
<tr>
<td>% Multiracial</td>
<td>2.6%</td>
<td>2.5%</td>
<td>1.8%</td>
<td>1.5%</td>
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<tr>
<td>% Hawaiian and Pacific Islander</td>
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<td>0.086%</td>
<td>0.4%</td>
<td>1.9%</td>
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<tr>
<td>% Native</td>
<td>1.0%</td>
<td>0.5%</td>
<td>16.2%</td>
<td>81.1%</td>
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### Population Projections 2015-2065

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<tr>
<th>Area</th>
<th>2015</th>
<th>2025</th>
<th>2035</th>
<th>2045</th>
<th>2055</th>
<th>2065</th>
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</thead>
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<tr>
<td>Oregon</td>
<td>4,001,600</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Tri-County Total</td>
<td>214,547</td>
<td>258,899</td>
<td>300,926</td>
<td>340,739</td>
<td>379,237</td>
<td>416,764</td>
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<td>Crook Co.</td>
<td>21,135</td>
<td>22,404</td>
<td>23,916</td>
<td>24,962</td>
<td>25,457</td>
<td>25,640</td>
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<td>Prineville UGB</td>
<td>11,256</td>
<td>11,935</td>
<td>12,845</td>
<td>13,472</td>
<td>13,593</td>
<td>13,383</td>
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<tr>
<td>Outside UGB</td>
<td>9,879</td>
<td>10,470</td>
<td>11,071</td>
<td>11,489</td>
<td>11,864</td>
<td>12,257</td>
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<td>Deschutes Co.</td>
<td>170,606</td>
<td>210,826</td>
<td>249,037</td>
<td>285,908</td>
<td>322,045</td>
<td>357,345</td>
</tr>
<tr>
<td>Bend UGB</td>
<td>85,737</td>
<td>109,546</td>
<td>132,209</td>
<td>154,719</td>
<td>176,003</td>
<td>194,793</td>
</tr>
<tr>
<td>La Pine UGB</td>
<td>1,687</td>
<td>2,263</td>
<td>3,014</td>
<td>3,872</td>
<td>4,816</td>
<td>5,836</td>
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<tr>
<td>Sisters UGB</td>
<td>2,315</td>
<td>3,431</td>
<td>4,375</td>
<td>5,320</td>
<td>6,266</td>
<td>7,212</td>
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<td>Redmond</td>
<td>27,715</td>
<td>33,282</td>
<td>39,812</td>
<td>47,167</td>
<td>55,373</td>
<td>64,785</td>
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<tr>
<td>Outside UGB</td>
<td>53,151</td>
<td>62,305</td>
<td>69,627</td>
<td>74,830</td>
<td>79,587</td>
<td>84,719</td>
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<td>Jefferson Co.</td>
<td>22,806</td>
<td>25,669</td>
<td>27,973</td>
<td>29,869</td>
<td>31,735</td>
<td>33,779</td>
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<tr>
<td>Madras</td>
<td>7,484</td>
<td>8,700</td>
<td>9,815</td>
<td>10,867</td>
<td>11,832</td>
<td>12,749</td>
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</table>

Source: Economic Development for Central Oregon
Chapter Two

Food Production
Agriculture and Ranching

Similar to other farms throughout the state of Oregon, farms in Central Oregon are generally small in both land size and total sales. In 2012, the USDA Agricultural Census counted 2,308 farms in the Central Oregon region. Of the total farms, 1,484 were cultivating on 10-49 acres (41%) or 1-9 acres (25%). Eighty-two percent of these farms earned less than $25,000 in annual gross sales, and 70% of all farms earned less than $10,000. Sixteen percent of farms in the region engaged in direct marketing compared to 19% statewide, but direct marketing farms in the region earned roughly half the total sales of the state average in 2012.

According to Census, farms are increasingly producing vegetable, melon and potato crops and seeds (56% increase) and fruits and nuts (growing from two farms to 14) and starting to produce berries (growing from zero to 16 farms) over the past ten years (2002-2012). The agricultural census combines the number of farms producing vegetables, melons and potatoes with farms producing vegetable, melon and potato bedding plants and seeds. The region has had a historical presence in vegetable seed production, and so growth in this sector could represent either seeds or vegetables. The region’s most valuable agricultural products based on sales data in the 2012 Census were cattle and calves and hay production.

In 2016, a survey conducted by the High Desert Food & Farm Alliance of 28 farmers and ranchers found that the majority of respondents were farming on ten acres of land or less, and had begun farming within the past two to seven years. Sixty-one percent of farmers surveyed began farming in 2010 or later, and 81% after the year 2000. The largest agricultural product in Central Oregon is cattle. Of the total animal production, cattle is followed by swine, poultry, goat, lamb, and ostrich. Of the more than 44 varieties of vegetables and crops listed by producers as being grown in Central Oregon, the top ten are: carrots, tomatoes, peppers, beets, cucumbers, squash (summer), lettuce, broccoli, potatoes, and herbs. Other major agricultural products include: alfalfa, grains, dry beans, and seed (carrot, garlic, and grass).

### Challenges on the Farm and Ranch in Central Oregon

- **Water:** lack of pressurization, limitations on usage and seasonality
- **Affordable land:** for new and beginning farmers
- **Climate:** cold, short growing season, high variability in climates, microclimates, swings in temperature
- **Soil:** shallow, low organic matter and nutrient retention
- **Competition:** large-scale organic, Willamette Valley
- **Rising land prices:** competition from cannabis industry
From the conversations in the survey, as well as local knowledge and direct observations, it is clear there are currently idle irrigated acres that could be used for additional agricultural production. While the exact number of acres is difficult to determine, modest expansion is possible without displacing existing land uses. In addition, there are also agricultural practices, such as greenhouses, that could increase per acre production.

Given that Central Oregon, in particular the city of Bend, has one of the fastest growing populations in the nation (sixth as of 2017) and has a vastly growing recreation and tourism industry, demand for locally-produced food could continue to grow for many years to come. With available and underutilized irrigated land, agriculture producers have the ability to meet this demand and continue to grow themselves as a result.

Scope of Agriculture

Most of Central Oregon has a semi-arid climate, characteristic of many sunny days and clear nights. During these clear nights, the air can cool significantly along the earth’s surface (nighttime radiative cooling), leading to the potential of frost almost any time of the year, even during the growing season.

As a consequence of being a high desert plateau on the east-side of the Cascade Mountain range, Central Oregon has variable elevations and rainfall that make for a generally short outdoor growing season. Elevation, beginning and end season frost dates, average rainfall, micro climate, season extending technology, and amount of direct sunlight all factor into the average length of a growing season.

One day during the summer might send hours worth of rain upon the city of Bend, but just 20 miles north in Redmond, the city will see only clouds. As many residents of Prineville can attest, there are several lowland areas surrounded by hills that can bring as little as a 40-day growing season in some years.

<table>
<thead>
<tr>
<th>Location</th>
<th>Average Length of Growing Season (Days)</th>
<th>Elevation (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bend (Deschutes)</td>
<td>90-100</td>
<td>3,650</td>
</tr>
<tr>
<td>La Pine (Deschutes)</td>
<td>70-80</td>
<td>4,200</td>
</tr>
<tr>
<td>Madras (Jefferson)</td>
<td>90-100</td>
<td>2,230</td>
</tr>
<tr>
<td>Prineville (Crook)</td>
<td>90-100</td>
<td>2,840</td>
</tr>
<tr>
<td>Sunriver (Deschutes)</td>
<td>70-80</td>
<td>4,156</td>
</tr>
<tr>
<td>Warm Springs</td>
<td>100-120</td>
<td>1,000</td>
</tr>
</tbody>
</table>
Jefferson County
Home to nine volcanic peaks in the Cascade Range as well as deep canyons and wild grasslands, Jefferson County is rich in scenic beauty. Temperatures range from an average high of 88° Fahrenheit in July to an average low of 24° in January. The county is a dry, low-humidity climate similar to other communities in the High Desert. Elevations range from 2,798’ at Crooked River Ranch to 2,437’ in Madras and 1,539’ in Warm Springs. The soil of Jefferson County is well suited for agriculture, with sandy loam soil over a volcanic rock base.

| Total Farms | 474 |
| Farm Employment | 713 |
| Total Acres | 817,051 (not including BLM or public grazing land) |
| Average Value Per Farm Acre | $641 |
| Average Age of Farmers | 59.3 |
| Top There Products | Beef Cattle (38.2%), Hay & Other Crops (29.1%), Aquaculture & Other Animals (16.7%) |
| Farms With Sales <$25,000 | 21 |
| <25,000-$99,999 | 61 |
| <$100,000- $249,999 | 35 |
| >$250,000 | 57 |

Paradise Produce
Terri Buck grows a large variety of garden-fresh vegetables that are picked daily and sold at an on-site, self-serve, honor-system produce stand.

What Are You Currently Farming?
“We offer a variety of vegetables as well as cage-free eggs, local raw honey, vegetable starts, and bedding flowers.”

Readers May Be Interested In:
A CSA Membership, visiting Paradise Produce at the Madras Saturday Market, or farm tours by appointment

Casad Family Farms
Employing biodynamic farming practices, Chris Casad is dedicated to leaving the land better than he found it while creating a home and habitat for humans, pollinators, and essential Central Oregon wildlife.

How Do You Feel About Local Food?
“The farmers market used to just be the grocery store. But nowadays making local food work will take a community effort.”

Any Words of Wisdom?
“Give it time. stay strong, live poor and if you can survive 120 work weeks you can survive farming. It is a life of hardship but is ultimately beautiful. You’re giving life to more than just humans.”

Mecca Grade Estate Malt
As an eighth generation Oregon farming family, Mecca Grade is a craft malthouse located on 1,000 irrigated acres in Madras. The farm grows and malts specialty grains and sells directly to breweries and distilleries in Central Oregon and beyond.

Readers May Be Interested In:
Remarkable malts, visiting Mecca’s innovative malting facility, and learning about excellent water efficiency
**Crook County**

Typical for the semi-arid climate of the High Desert, Crook County has sunny days, low humidity, and cool nights. Temperatures can vary 30 to 40 degrees over the course of a day, and the entire growing season can be as little at 40 to 50 days with frost recorded in all 12 months. Prineville is at 2,868’, but elevations range up to 6,926’ at Lookout Mountain in the Ochocos. The soil of Crook County varies, from gravelly sandy loam to silty clay loam.

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<td>Average Age of Farmers</td>
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<td>&lt;25,000-$99,999</td>
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<td>&lt;$100,000- $249,999</td>
<td>21</td>
</tr>
<tr>
<td>&gt;$250,000</td>
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</tr>
</tbody>
</table>

**Prineville Lavender**

Kristi Hiassen considers herself a hobby farmer, and is not ashamed of that fact. While specializing in the production of lavender for essential oils, her “lavender labyrinth” is a quiet place to enjoy a picnic surrounded by several varieties of lavender, herbs and plants native to the High Desert.

**What Are You Currently Farming?**

“Lavender (obviously), pumpkins, winter squash, kale, chard, potatoes, and kitchen herbs.”

**What Is Unique About Your Farm And County?**

“Our operation pays for itself (supplies maintenance, insurance) which can be hard with lower price points. Everything in Crook County is completely different year after year. If you want to be serious you need season extenders!”

**Vaquero Valley Ranch**

Ron Miller, owner and operator of Vaquero Valley Ranch, is a fourth generation Oregon rancher, now operating in Prineville, Crook County. “Vaquero” is Spanish for “cattle-rancher”, and Ron remains true to this definition by running 135 head of cattle on 10,000 acres near Prineville Reservoir.

**What Kind Of Cattle Are You Raising?**

“I call them ‘survive’ cross-breed. You gotta have cattle that will survive in this county and be adaptable.”

**Are They Grass Or Grain Fed?**

“Their diet consists of native grasses and weeds. They have the option and freedom to eat what they want which comes out in the flavor of the meat.”

**Timber Creek Farm**

A third generation Oregon farmer, Billie Estridge has been raising sheep at her farm in Prineville since 1994. Billie sells her lambs in halves or whole, as well as specialty sausage.

**Was Farming In Your Family?**

“I grew up on a farm but it was a different time back then. Everything but salt, sugar, flour, and coffee came from the farm.”

**Any Advice For Future Farmers?**

“People forget that it’s hard work. You don’t just put seeds in the ground and get carrots. You might be enamored with the lifestyle but it takes a real skill set as well.”
Deschutes County

Deschutes County has some of the sunniest weather in the Pacific Northwest with low humidity and cool nights natural to the 3623’ high desert elevation. Summer temperatures average a high of 80° Fahrenheit and a low of 41°, while in the winter they range from an average high of 46° to an average low of 21°. Precipitation, mostly in the form of snow, is concentrated between November and March. As the dramatic backdrop for most of Central Oregon, the Cascades occupy the western edge of Deschutes County, and feed many lakes and reservoirs in the region, which allow irrigation throughout the counties. Deschutes County soil was formed over pumice and ash, averaging a loamy coarse sand mixture.

| Total Farms | 1,283 |
| Total Farm Employment | 1,473 |
| Total Acres | 131,036 (not including BLM or public grazing land) |
| Average Value Per Farm Acre | $7,015 |
| Average Age of Farmers | 59.7 |
| Top There Products | Beef Cattle (36.3%), Hay & Other Crops (27.0%), Aquaculture & Other Animals (19.6%) |
| Farms With Sales <$25,000 | 1,149 |
| <25,000-$99,999 | 103 |
| <$100,000- $249,999 | 19 |
| >$250,000 | 12 |

Boundless Farmstead

Megan, a Bend native, and David, originally from Alaska, have been active in farming and food system work for several years. Canning and preserving, environmental activism, and working with the land formed the foundation of their spirit before they began farming full time in Alfalfa in 2018.

Why Farm?
“I like to see the tangible change, and feeding people is the most gratifying thing I can imagine. It’s feeding your neighbors and doing something that supports community.”

What’s Important To You?
Soil building. It’s the original foundation of organic; if you grow good soil, you grow good food!”

Rickety Bridge Ranch

Cuyla Dudley is a one-woman show tending an heirloom apple orchard and rotating piedmontese cattle on 40 acres of irrigated land in Redmond. While her family has been in Central Oregon since the 1940s, Cuyla has been running her operation since 2006.

Why Piedmontese Cattle?
“They’re different and I was looking for a breed with learner meat. Our beef has fewer calories per ounce than salmon, and piedmontese beef contains lower cholesterol than baked chicken!”

Hope Springs Dairy

Not intending to be dairy farmers, Jeff and Lisa Severson got their first dairy goat in 2010. Since then, they have added dairy cows, and blossomed into a business that welcomes herd share members for raw milk, homemade mozzarella, and yogurt.

What Drives You?
“What keeps me going is the community that surrounds farming. We have the best herd share members and we’ve seen such supportive people within the community.”

Do Your Kids Help On The Farm?
“Yes, they take pride in it. One of our children helps bottle-feed cows every morning and another milks once a week. They’re learning through it and they are proud of themselves.”
**Marketing and Sales**

As detailed in the HDFFA 2016 producer survey, farmers and ranchers in the region are pursuing growth and adapting their production to reach new markets, while also having to balance their production (supply) with demand.

Marketing assistance was the most frequently cited need among local food producers, and marketing practices for local food producers have expanded with population growth and consumer demand through a range of distribution channels and locations. While very few producers surveyed are marketing outside of Central Oregon, there were distinct differences between crop versus animal producers as to where they marketed their products. Some challenges highlighted tracking costs of production, access to funds, barriers into entry for institutional sales, and lack of contracts for growing.
Economic Impact of Local Food Production

In 2017, the High Desert Food & Farm Alliance (HDFFA), Central Oregon Intergovernmental Council and OSU Extension Small Farm Extension Service sought to quantify the economic impact of local food on the tri-county region.

Central Oregon Agricultural Economic Impact Report

A 2017 study conducted by the Central Oregon Intergovernmental Council, High Desert Food & Farm Alliance, and Oregon State University Center for Small Farms and Community Food Systems examined the economic impact of small to mid-sized farmers and ranchers on the Central Oregon economy, and this sector’s potential for growth.

A snapshot of current Central Oregon small to mid-sized farms and ranches

An interview of 28 Central Oregon farmers and ranchers was conducted in the summer of 2016. They grow, raise and sell products with the majority of sales being beef cattle and vegetables and their primary markets being farm direct-to-consumer and wholesale.

Of those interviewed, 28 producers provided:
- 28 full and part-time jobs
- $1.5 million in sales
- $248,000 in wages and salaries on their farm operations

The local food sector generates a significant amount economic activity

For every five (5) on-farm/ranch jobs we found that the economic activity generated two (2) additional off-farm jobs. For every dollar spent by consumers on food from a local producer:

- 76¢ stays in the local economy
- Only 28¢ stays in the local economy

Study published by: Central Oregon Intergovernmental Council, High Desert Food & Farm Alliance, Oregon State University Center for Small Farms and Community Food Systems, and Rural Development Initiatives. Partial funding provided by USDA Local Food Promotion Program and the Ford Family Foundation.
According to the findings in the report, entitled *Economic Impact of Local Food Producers in Central Oregon*, local food producers create more jobs on farms and in the rest of the economy as compared to commodity-focused producers: 26 jobs for every $1 million in sales, compared to 12 jobs among commodity-focused producers. One striking finding was that for every dollar spent on food from a local producer, 76 cents stayed in the regional economy versus 28 cents for imported food.

The Economic Impact report utilized a Economics of Local Food Systems Toolkit provided by the U.S Department of Agriculture and included financial expenditure information from a sample of 28 regional farmers and ranchers. The aim of the study was not only to quantify and better understand the impact of local food, but to develop scenarios about how investments in this sector could impact the region.

### Central Oregon Food Hub

The Economic Impact of Local Food Producers in Central Oregon report also found that establishing of a food hub (see Transportation & Distribution) would create nine new jobs, and bring about an additional $642,000 of sales to the region. A food hub could provide multiple services and functions in order to facilitate the movement of local food to markets and the overall local food economy. Potential food hub functions include: marketing support, aggregation, storage, and light processing. As stated by Oregon State University's Center for Small Farms and Community Food Systems, a food hub in Central Oregon...
is, “not only an investment in the food system, but also an investment in regional natural resource economy, and community health and wellness.” For more on the Central Oregon Food Hub, see Chapter Three.

**Jefferson County Carrot Seed Production**

While relatively new to Central Oregon, seed production (in particular carrot seed) has quickly grown into a large operation in Jefferson County. According to Kevin Richards of Fox Hollow Ranch in Jefferson County, “if you eat carrots almost anywhere around the world, there’s a good chance that the seed that was used to produce those carrots was grown right here in Central Oregon.”

With a total annual impact between $30 and $35 million, Janet Brown, Director of Economic Development for Central Oregon does not underestimate how big of an impact seed production makes for the Central Oregon region. She continues by saying, “if you are a doctor, you have farmer as a patient. If you have a car dealership, grocery store, any type of business, you have farmer as a client. Even the businesses in Bend, Redmond, and outside of Madras have farmer as their customers.”

While the carrot industry is fairly new to Central Oregon, beginning roughly 20-30 years ago, the cooperation and technological developments between Jefferson County farmers and OSU Extension Service provide positive signs that the production niche will be sustainable for years to come.

**Deschutes River Corridor**

Throughout 2011 and 2012, a team of University of Michigan graduate students studied the economic value of the Deschutes River. They estimated that the river generates $185.2 million in total economic value to six industries annually, of which $40.2 million is agricultural revenue directly attributed to the river, and another $1.8 million from Lower Deschutes salmon hatcheries. The Deschutes River, as well as the Crooked River and various creeks, all provide water to farms and ranches for crop irrigation and water for livestock throughout Central Oregon. While maintaining the six industries (agriculture, tourism, recreation, hotels, real estate, and travel) requires significant balance and trade-off, agriculture and tourism related to fishing are notes as having substantial sources of economic benefit.

**Land Access**

According to a study from the National Young Farmers Coalition, access to agricultural land is one of the major challenges for new and beginning farmers. This is particularly problematic in Central Oregon due to the region’s rapid growth in recent
decades. Land use planning in collaboration with local leadership and farmland succession resources for farm owners are two ways that community members are helping to ensure that we preserve our working landscapes in the region. Access to agricultural lands is important because farm and ranch land are and will remain foundational to Central Oregon’s ability to produce food for generations to come. As stated by 1,000 Friends of Oregon, “Central Oregon’s landscape is an inspiration for many that move to this area and provides abundant recreational opportunities... and it is also very much a working landscape.”

**Rising Land Prices**

Price of land in Oregon has continued to rise every year for more than a decade, making access to affordable land one of the biggest barriers for new and beginning farmers and ranchers. A longtime rancher in Crook County noted, “the land prices are too scary high. You have to be born into it, or come into a lot of money.” There are many factors that lead to currently high and continually rising prices of farmland in Central Oregon, including location, proximity to markets, soil types, water rights, existing infrastructure, the availability and quality of existing housing, and development rights. Even those who inherit farmland often find themselves in a struggle, as inherited farmland sometimes comes with inherited debt, making it difficult to make infrastructure improvements.

**Succession Planning**

In light of these challenges and trends, succession planning – transferring agricultural land to the next generation of farmers – is critical. An estimated 64 percent of Oregon’s farmland, or more than ten million acres, will change hands over the next twenty years, according to *The Future of Oregon’s Agricultural Land*, a comprehensive report published in collaboration between Oregon State University, Portland State University, and Rogue Farm Corps.
“The future of agriculture Oregon – and the economic, environmental, and other benefits it provides – depends largely on a successful transfer of farms to a new generation of farmers,” the report’s authors urge. “Thoughtful succession planning is more important than ever now that the average age of Oregon farmers is 60 years (up from 55 years in 2002).”

Several organizations are working across the state and locally on land access programs include: the Oregon Agricultural Heritage Program, Rouge Farm Corps, Central Oregon Landwatch, and 1,000 Friends of Oregon. The Oregon Agricultural Heritage Program (OAHP) assists farmers in creating succession plans and protecting farmland from development, while also working to, “maintain or enhance agricultural and natural resources.” Operating statewide, the program formed last year in order to aid farmers in the challenges they face including, “fragmentation of parcels, conversion to non-farm uses, and the expense and complexity of intergenerational transfer.”

In February 2018, Central Oregon agricultural ranchers, farmers, and advocates came together to weigh in on the development of OAHP. Participants expressed opinions about the structure of OAHP, and the future of bringing about effective policy. When asked broadly about what it will take to accomplish succession planning in Oregon, one rancher said, “Successful succession planning has no end point. Farms change and farmlands change.” He went on to add that, to him, succession planning is very different from conservation, a point he wanted to stress because negative attitudes toward conservation in this community.

“We’re keeping linkages between succession planning and conservation for the sake of long-term sustainable food production in Oregon” he said, “but this is not a promotional thing. It’s a tool for building in practices for the future. We are not trying to turn farmers and ranchers into conservationists.”

Rogue Farm Corps, is a nonprofit whose mission is to, “train the next generation of farmers and ranchers through hands-on educational programs and the
preservation of farmland. We support our local agricultural economy and serve as a model for other communities. “As an organization, it employs a combination of efforts toward improving farm and ranch land access such as educating the public about working land easements that have provisions assuring that land will be farmed, and advising landowners on succession plans. This is all in an effort to bring assurance that farmland is not sold for purposes of development and that the next generation of farmers will have access to land; because when farmland is sold to commercial development, it is often lost as productive farmland forever.

**Water Access and Rights**

In the dry climate of Central Oregon, agricultural land is essentially useless without access to reliable sources of water. With an average annual rainfall ranging from 11 inches in Deschutes County to 17 inches in Jefferson County, compared to the U.S. average of 39 inches, Central Oregon producers rely on irrigation from rivers and reservoirs flowing from the Cascade Range to irrigate crops and nourish livestock.

Water rights have a large impact on agricultural production and thus can be a contentious and complicated resource to manage in Central Oregon. The system of water rights attached to agricultural parcels of land dates back as early as 1905. The cost of land is tied to the water rights granted to those acres, with the system characterized by the phrase, “first in time, first in right”. Thus, the system of water rights and high cost of irrigated acreage directly affects beginning farmers’ capacity to gain access to affordable land.
If water rights are transferred in a sale of land to new owners, the scarcity of other viable options will result in higher market prices. This could affect the likelihood of success for new and beginning farmers to gain access to affordable land in the long-term.

**Irrigation**

In collaboration with local, state, and federal agencies, the eight irrigation districts of Central Oregon provide irrigation to nearly 150,000 acres of fields, pastures, ranches, and farms of all sizes, as well as to households, parks, schools and towns.

**Irrigation Challenges**

With the majority of the irrigation systems in the region being more than 100 years old, there are many system-wide technological upgrades to be made in order to conserve water and more efficiently bring water to those producing food. Central Oregon has three reservoirs for consumers and food producers: Wickiup, Crane Prairie, and Crescent Lake. The current method for transporting water from these reservoirs along the Deschutes River and various streams is through open-air canals. These canals, while transporting water effectively, are inefficient in the amount of water that is lost through soil seepage and evaporation in the hot, dry summer months. One option to alleviate this loss, albeit expensive at an estimated cost of $500 million, would be to replace the canals with underground piping measuring 11-feet wide.
“Piping canals is a critical strategy in modern irrigation practices,” said Craig Horrell, Central Oregon Irrigation District manager. “During the irrigation season, we lose approximately 50 percent of water to evaporation and seepage from canals and laterals. Piped canals mitigate these losses and conserve a significant portion of this water. These conservation efforts benefit fish and wildlife in the Deschutes River ecosystem, support sustainable agriculture and help Bend to manage its water resources for the future.”

As it relates to the food system of Central Oregon, not only would piping the canal conserve water, but would also provide opportunities for new sources of energy. Using a piped, pressurized water system saves energy in areas not benefiting from gravity fed systems. Pressure from transporting water through pipes instead of canals also creates pressure which could generate hydroelectric energy. Deschutes County already has a small-scale system in place to test the potential of such a system, and in theory any of the eight districts or independent small-scale sites could produce hydroelectric energy and sell electricity back to the grid. Essentially, by making the investment to improve efficiency and conserve water, irrigation districts could offset operating costs and pay off the hefty upgrades over time.

Similarly, farmers and ranchers can invest in upgrades on their own properties to make their irrigation systems more efficient. Converting flood irrigation systems to drip irrigation systems would

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<th>Households Served</th>
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drastically decrease water usage on many farms, and provide costs-saving measures as well, which would only be possible through a pressurized system.

Municipal governments across Central Oregon are seeking new renewable energy sources to meet the 50 percent renewable energy target by 2040 (mandated by Senate Bill 1547). One such opportunity is with North Unit Irrigation District (NUID) in Madras, Jefferson County, where hydroelectric generators are incorporated at “drops” in the canal. These dips in the canal cause enough of a continuous water flow to produce usable power. This work follows a district wide irrigation modernization assessment completed in 2016 by NUID with Farmers Conservation Alliance, which outlined the potential for “gravity-fed and pressurized hydropower, water savings and environmental improvement opportunities within the canal system.”

“The district has long recognized the untapped potential its conveyance system could provide,” North Unit Irrigation District General Manager Mike Britton said. “The district also realized that conventional hydro development projects were beyond the district’s capabilities, and, as such, has developed a model that works well for the district.”

Water Rights

Western territories favor “seniority” or priority dates when their right was granted by the state. Each district has a different amount of water that they can use in a given year, and older allotments have first priority. As flows get low, senior rights holders have more access to water, resulting in a district water master instructing other users to shut off water. Actors in Central Oregon that regulate water rights and usage include the Deschutes Basin Board of Control and smaller, independent and private irrigators overseen by the Oregon Water Resources Department, which also rules on the basis of seniority.

According to an aquatic biologist and Crook County resident, the overarching issue with water rights in our area is that Jefferson County has lower elevation, better soil, and better farming potential than elsewhere in Central Oregon, but has the worst water rights. “The potential problem is that essentially right now a lot of the water in Central Oregon is supplied to hobby farms from Bend and Redmond and aren’t the best for food production. Jefferson County farms have more risk and uncertainty as far as water supply from the Deschutes River.”

For better or worse, what an operation producers (food, seed, pasture) is not taken into account in the current water rights system. A huge flood of water for a horse pasture might not mean anything for food production, but may have benefits for a community outside of a food system.
Upper Deschutes River Basin Study

Beginning in 2014, The U.S Bureau of Reclamation along with Central Oregon conservation groups, local governments, irrigation districts, and other stakeholders began a three-year process of analyzing water supply and demand from the Deschutes River Basin - striking a balance for the needs of various municipalities; fish and wildlife living in the basin; and farmers who rely on water for irrigation. At a cost of $1.5 million, the study sought to determine a balance for the needs or irrigation districts, while ensuring adequate water remains for the endangered Spotted Frog, which lives in Central Oregon waterways. The study is expected to be released to the public by September 2018.

Spotted Frog Controversy

When researching irrigation and water rights in Central Oregon, it is difficult to avoid the controversy surrounding the Spotted Frog – listed as a threatened species by the U.S. Fish and Wildlife Service, which is authorized to protect its habitat under the Endangered Species Act. Everyone has an opinion, and generally those opinions run deep into the political sentiments of environmentalism versus jobs and culture. Below is a brief and abbreviated look into the controversy.

North Unit and Central Oregon Irrigation Districts receive water from Wickiup Reservoir throughout the summer growing season by way of the Deschutes River.
When it comes time to fill up the reservoir each winter, flows along the river are reduced, at times by 100-fold. Since many parts of the river are inundated wetlands, and home to the Spotted Frog, these fluctuations in water flow can threaten the species spawning patterns and lead to premature death. In an effort to protect the Spotted Frog, environmental protection groups have filed lawsuits on behalf of the threatened species, which would force the federal government to ensure that the frogs have enough water to survive and thrive. This in turn would mean that farmers and ranchers would have their water rights restricted, down the list of seniority, and may not have enough water to keep their production afloat.

As this relates to the discussion surrounding water rights, if the result of this controversy is to restrict flows, that means more junior water rights holders would be affected first. This leads to speculation as to who should have more access: those that consider themselves to be “actually producing the food, or farms near Bend growing food people can’t afford,” as one Jefferson County farmer put it. Some folks say too much water is being used which will need to be remedied through advancement in new technologies, while others claim they’ve been doing things the same way for 100 years and the frog is still alive. As one aquatic biologist summarized, “either way, advancements to improve the efficiency of irrigation systems are essential and necessary for agriculture and our food future, and everyone can win. Even the Spotted Frog.”

Seeds: Saving and Exchange

Central Oregon has a unique growing climate: hot sun, early and late frosts, volcanic soil, and low rain volumes. For these reasons, it is particularly essential for food growers in Central Oregon to select seeds that are specially adapted to the climate, ensuring longevity and diversity of seed genetics. From informal conversations with local seed producers and agriculture stakeholders, it seems that the majority of large food producers in Central Oregon either save their own seeds, or purchase from large seed producing organizations. This section highlights seed production, exchange and saving activities of Central Oregon, and initiatives that promote seeds particular to the unique Central Oregon growing climate.

Central Oregon Seed Exchange

Central Oregon Seed Exchange (COSE) in Bend is at the forefront of collective seed saving and exchange in the region. With an overarching mission of strengthening Central Oregon’s farming and gardening community, COSE works to
“increase local seed saving, increase seed exchange, provide education around how to effectively save seed and develop seed stock acclimatized to our unique area, and generally support sustainable agriculture, local food supply, and regional biodiversity in Central Oregon”.

Additionally, COSE has an educational program to support Central Oregon’s regional food system in schools, aptly named Seed to School. Through grant funding, COSE provides locally grown vegetable and flower seed packets free of charge to all Bend-LaPine School District children. The organization also hosts growing and seed saving classes in schools where students learn the basics of seed saving, storage, and how to avoid cross-contamination.

**Central Oregon Seeds Inc.**

Focusing mainly on the grass and vegetable seed varieties, Central Oregon Seeds Inc. has a worldwide market for their seeds grown in Jefferson County. Mike Webber, of Central Oregon Seed, says that what the organization mainly does is, “multiply private varieties for companies around the world.” According to carrot seed producer Michael Kirsch of Madras Farms, “Central Oregon Seeds is the organization that got the carrot seed industry started in Central Oregon, taking all the risk to bring it to the area... and have turned it into a very important industry that affects a lot of people in our county.”

While the majority of COS’ seeds do end up traveling internationally, Webber believes the positives of the industry, such as benefits to the local economy and collaborative research with OSU Extension Service, are universally worthwhile, adding, “as a farmer in this area it’s kind of neat to think that you’ve grown one of the top three vegetables in the world and it ends up in a country feeding people in a very healthy way.”

**Deschutes Pollinator Increase Project**

One of the most important things a bee can do is to pollinate. Pollination is essential for plants to reproduce, and so many plants, including the majority of food crops, depend on bees as pollinators. According to a United States Department of Agriculture study...

Deschutes Pollinator Increase Project works to increase the amount of habitat space in Central Oregon for pollinator species like bees by providing a variety of native and non-native perennial wildflowers to residents in Deschutes County with that hope that the increase of habitat will bring about a resurgence of pollinator species. Wildflower breeds having success in Central Oregon so far include echinacea, California poppy, and calendula.

Production Practices, Energy, and Regulations

Energy and Production Practices

In Central Oregon, eating locally inherently means eating seasonally. Given Central Oregon’s precarious and unpredictable climate, producing food year-round requires additional season extenders and energy inputs not necessary for other regions. Oregon receives most of its energy via hydroelectric, coal, and natural gas; energy that is used to run farm and ranch operations, power greenhouses and processing facilities, coolers and freezers for storage, etc. According to the U.S. Energy Information Administration, Central Oregon has eight hydroelectric operations, five solar photovoltaic fields, and one outlet for a natural gas pipeline from Gas Transmission NW (British Columbia). With regards to growing in Central Oregon’s temperamental climate, some food producers have opted to bypass the elements altogether by growing entirely indoors and controlling and maintaining their own micro-climates.

Volcano Veggies, an aquaponic farm operating in Bend, is particularly concerned with its carbon footprint, saying that simply living in Central Oregon requires more energy than in other areas. They aim to mitigate the carbon footprint of their aquaponics system where they can. “We do use heaters for growing, and grow lights as well,” says owner and founder Jimmy Sbarra. “So we participate in incentive programs for energy reduction, and would like to transition into fully renewable energy in the future.” Furthermore, Sbarra believes Volcano Veggies’ technique of having an indoor aquaponics system in and of itself is beneficial for food production. “Conventional farms use more energy than I think they realize,” says Sbarra.
Chris Casad, from Casad Family Farms in Jefferson County, believes permaculture land design is the most energy-efficient way for conventional farmers to produce food. “Our farm has long been utilizing permaculture land practices to save on energy,” says Casad, “With our permaculture land design, we don’t have to spend all day driving a tractor back and forth across 80 acres.” According to Casad, in terms of environmental footprint, permaculture practices give as much back to the land and environment as they utilize, since plants absorb carbon dioxide and produce oxygen.

**Raw Milk**

Raw milk production remains a hotly contested issue nationwide, as well as in Central Oregon. As recently as 2014, an Oregon-based dairy owner sued the Oregon Department of Agriculture stating the department’s ban on raw milk advertising violated her first amendment rights. The suit was settled before reaching court, with the agency agreeing to no longer enforce the ban and motion for the State Legislature to repeal it, with nothing to the effect happening as of December 2017.

Similarly, raw milk consumers in Oregon are at odds with the attempts of Oregon Dairy Farmers Association to pass an outright ban on the sale of raw milk statewide. Since 1999, sales of raw milk have been prohibited in stores, with sale permitted in small-scale operations through a system called “herd shares”, which are not as regulated as commercial pasteurized milk operations. Herd shares are essentially a cooperative arrangement between a farmer and a consumer.

Central Oregon currently has two licensed dairy farms that produce raw milk for consumer purchase through herd share programs. They offer a variety of raw milk products through a herd share subscription with pick up at local food purveyor, Central Oregon Locavore in Bend, as well as direct pickups on farm.

**Organic Labeling**

The USDA Organic label is one of several options for product verification to meet regulations set by the US Department of Agriculture (USDA) and the Food & Drug Administration. To be considered certified USDA Organic, farms must meet approved methods to protect natural resources and conserve biodiversity, and are only allowed to use approved methods and substances for weed and pest management. A number of farms in Central Oregon are not opting to become certified organic, feeling that the labeling is no longer necessary, too expensive, or does not adequately describe their sustainable farming practices. This is reflective of a national trend. According to a study by Purdue University, 36 percent of farms surveyed dropped certification over the course of their farming career, yet 72 percent of those farms continued organic practices after dropping the certification.
Boundless Farmstead, near Alfalfa in Deschutes County agrees, “our produce is grown using beyond-organic practices. We are not certified because we believe that small-scale local farms do not need to pass the cost of the certification to the customer.”

Many small to mid-sized farmers with local customers claim that in-person knowledge of a farm’s practices is the best certification. Lanny Berman of Central Oregon Butcher Boys in Crook County feels similarly about his operation (see Processing), “we don’t do anything like that, as far as having an organic certification. If a small farm raises a decent product, why would they need an organic label?” Berman says the certification process would be a headache. “We are inundated with paperwork as it is being a USDA-inspected facility, so getting that organic aspect would put things over the top with more paperwork and cleaning regulations. The organic stuff wouldn’t be able to touch the non-organic stuff or the same equipment, and that would make things difficult.”

**Friends of Family Farmers**

Many small- to mid-sized ranchers and farmers find it difficult to compete within a system that seems to be designed around larger-scale growers and processors. Friends of Family Farmers (FoFF) is a grassroots organization promoting, “sensible policies, programs, and regulations that protect and expand the ability of Oregon’s family farmers to run successful land-based enterprises while providing safe and nutritious food for all Oregonians”. In an effort to remove the barriers that prevent broader prosperity for smaller producers and processors running clean and sanitary operations, Friends of Family Farmers details the current regulatory environment while providing priority action items regarding rules, regulations, and food safety in an updated version of their 2015 report – *Agricultural Reclamation Act (ARA): A Roadmap to Sound Agricultural Policies Writing by Oregon’s Family Farmers and Ranchers*. After interviewing farmers and ranchers across the state (including Central Oregon) for the report, several themes emerged:
1. Rules and Regulations are seen as reactive and crippling, as opposed to proactive and supportive, driving some producers out of business that face unreasonably high costs for regulatory compliance.

2. Family-scale farms are subject to the same levels of compliance as industrial producers, creating an imbalance that needs unique rules that differentiate between scale.

3. Federal Food Safety Modernization Act restricts local markets, skews the playing field towards industrial production, and interferes with the relationships between producers and consumers.

4. A large majority of the market-damaging food-borne illness outbreaks come from industrial food production, and not family-scale farms and ranches.

Labor

Farming in and of itself is a tough business, often times without taking into consideration the back-breaking labor that comes along with long days of harvesting, washing, packing, and planting. Many of the smaller farms in Central Oregon have ongoing, regular farm workers who return year after year, if they aren’t on board year-round. “More well-established farms stick with crews they’ve had for a long time” says Jessie Suleiman, Central Oregon Chapter Coordinator for Rogue Farm Corps, “There does not seem to be a lot of turn-over. I haven’t heard anything about a labor shortage.”

Furthermore, labor needs vary heavily with farm size. The size of the farm dictates the level of mechanization versus human scale labor needed to for a successful operation. Central Oregon has both a burgeoning number of small farms that attract many skilled laborers and interns, with a number of well-established larger acreage farms (such as garlic and potato farms in Madras). Although no official data exists, through conversations with locals as well as farmers, on-going work exchange opportunities are plentiful. Farms and ranches with land to spare will allow for individuals or couples to build a small house or park a trailer and trade labor for weekly or monthly rent. The nature of the short growing season in Central Oregon dictates the very seasonal availability of jobs with most farm employment being between May through October.

Migrant Farmworkers

Across Oregon, many laborers in the food system labor industry are labeled as Migrant and Seasonal Farm Workers (MSFW). Compared to other Oregon counties such as Marion County, with an estimated 23,013 individuals, or Hood River County,
with an estimated 13,269 individuals, Central Oregon has a relatively low population of nearly 700 individuals mostly based in Jefferson County. The negative consequences of our industrialized food system are often unleashed on those that have the least amount of capacity to resist – the disenfranchised immigrants beholden to the system itself. Seventy-five percent of U.S farmworkers were born in Mexico, and 68 percent of those people live below the poverty line. Several industries, including food production and processing and others, are subsidized by immigrant labor in order to keep costs low.

Additionally, farm workers suffer from the highest rates of toxic chemical exposure and injury as well as lower height and weight, diabetes, respiratory diseases, and a lower life expectancy. According to Daniel Quinones of WorkSource Oregon, “the average life expectancy of an immigrant farmworker is 49 years, or 24 years less than national average. So, when you ask yourself, what is the real cost of one pound of potatoes, understand that the answer is 69 cents and 24 years.”

### Field Agriculture, Nursery/Greenhouse, Food Processing Migrant and Seasonal Farmworkers (MSFW) in Central Oregon

<table>
<thead>
<tr>
<th>County</th>
<th>MSFW Worker Estimates</th>
<th>Migrant Workers</th>
<th>Seasonal Workers</th>
<th>Non-farm workers in Migrant Households</th>
<th>Non-farm workers in Seasonal Households</th>
<th>Total MSFW Workers and Non-farm workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crook</td>
<td>75</td>
<td>25</td>
<td>50</td>
<td>19</td>
<td>37</td>
<td>131</td>
</tr>
<tr>
<td>Deschutes</td>
<td>125</td>
<td>40</td>
<td>80</td>
<td>30</td>
<td>60</td>
<td>210</td>
</tr>
<tr>
<td>Jefferson</td>
<td>471</td>
<td>158</td>
<td>313</td>
<td>119</td>
<td>236</td>
<td>826</td>
</tr>
<tr>
<td>Central Oregon</td>
<td>666</td>
<td>223</td>
<td>443</td>
<td>168</td>
<td>333</td>
<td>1,167</td>
</tr>
</tbody>
</table>


While the MSFW in Central Oregon estimates provide some comparison to other regions, the counts exclude many who work in some aspect of the food system including those who work with livestock or poultry, in dairies or fisheries, perform ranching activities, operate farming equipment, or drive trucks to transport agricultural products. Given that ranching and livestock operations are abundant in Central Oregon, and the latest data is from 2013, the true number of migrant and seasonal farmworkers working in the region is likely much higher. Even migrant and seasonal farmworkers who may not experience such detrimental effects regularly, may still find it difficult to find jobs in the future. Nellie McAdams of Rogue Farm Corps states, “migrant labor is unregulated and difficult to record without an HR
department. It is also increasingly becoming more and more difficult to find farm labor with increases in mechanized farm infrastructure.”

Another aspect of ensuring a stable workforce for farm labor is ensuring those new to farming can learn the trade. As we’ve seen in various other chapters in this assessment, Rogue Farm Corps has its finger on the pulse of labor in a variety of ways. Jessie Suleiman, Central Oregon Chapter Coordinator, says that Rogue Farm Corps is, “looking to address the issue of labor, and help farms tap into getting into the field of agricultural labor with very little knowledge or training.” In Central Oregon farms tend to fall on opposite ends of the experience spectrum: young farmers with only a handful of years of experience under their belts or lifelong farmers who grew up farming.

**Internships and Apprenticeships**

Internships can be a win-win for both farms and those new to farming or ranching looking to learn and expand their skill set. It is difficult to assess how many farms or ranches in Central Oregon have interns, as arrangements are often informal.

According to Jessie Suleiman, who has had dozens of conversations with small to midsize farmers, “the internship programs tend to be a pretty helpful resource for farmers who are smaller (1-10 acres), and who are newly established.” According to the 2017 Local Food Impact Study report writing by High Desert Food & Farm Alliance and Oregon State University, the majority of farm operations in Central Oregon have been established in the past one to ten years. Suleiman added, “we also work with larger more established farms in the Valley, they tend to have a crew and bring on folks to train. Farmers who have been in this area for generations would never take on interns (from Rogue Farm Corps) because the program is too young to be fully vetted. They need people who are already trained up. We want to have farms that are roughly four years established before hosting interns.” This is not to say that large farms in Central Oregon or elsewhere, would never take on interns; rather, they draw on existing relationships in the area and rely on community and migrant workers.
Community, Home & School Gardening

Seed to Supper

A program of the Oregon Food Bank, Seed to Supper is a free six-week gardening class to instruct beginners on the basics of growing food. While also an opportunity to learn how to utilize healthy produce in a budget friendly way, Seed to Supper provides an opportunity for participants to work outside and connect with their neighborhood and community. Thanks to local partnerships, participants are not only given seeds and soil, but also space to grow via a growing container or plot. Seed to Supper connects communities to healthy food, as well as one another.

High Desert Food & Farm Alliance (HDFFA) was the regional sponsor for this program, working in all three counties of Central Oregon as well as Warm Springs. Unfortunately, HDFFA canceled the program due to lack of interest by partner organizations to continue operating the garden beds. One organization that continues to use the garden beds is St. Vincent De Paul in Bend. “The folks in our community need to know how to cook healthy. The garden has made our lives healthier by giving us the opportunity to grow our own vegetables.” says Mr. Chip Aims of St Vincent DePaul.

As of 2017, 151 participants went through 14 courses at seven area community gardens.

Central Oregon Community Garden Manual

Prepared by the Central Oregon Intergovernmental Council in 2012, the Central Oregon Community Garden Manual is a comprehensive document that outlines timelines for planning, explains common tools and soil amendments, and offers trouble shooting tips. This manual contains no shortage of online resources, all specific to Central Oregon, that will aid in gardening pursuits.
### Community Gardens in Central Oregon

<table>
<thead>
<tr>
<th>Crook County</th>
<th>Baptist Church; Inactive as of April 2018</th>
<th>Leaders of project moved away or lost interest, but a sizable plot with infrastructure, tools, and irrigation system remains in place.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Presbyterian Church Community Garden, Prineville</td>
<td>Baptist Church; Inactive as of April 2018; Leaders of project moved away or lost interest, but a sizable plot with infrastructure, tools, and irrigation system remains in place.</td>
</tr>
<tr>
<td></td>
<td>Ward Park Community Garden, Prineville</td>
<td>1771 NW Madras Highway; This garden has 30 plots that range in size from 15 feet by 20 feet to 30 feet by 40 feet. Each plot costs $30 for the season, Contact Kim Kambak 541-771-1923. Around 1 acre in size; Seed to Supper classes are held here; at one point produce was being utilized by Redemption House.</td>
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<tr>
<td></td>
<td></td>
<td>1143 NW 9th Street; Located at the Gary Ward Park, this garden has 12 plots that are 10 feet by 12 feet, and 12 plots that are 10 feet by 20 feet. Small plots cost $30, large plots cost $40; Contact Crook County Parks and Recreation 541-447-1209. Half of the plots were cultivated in 2017, more than in previous years.</td>
</tr>
</tbody>
</table>

<p>| Jefferson County             | The Margaret Dement Garden of Eatin’, Madras | 395 SE C Street; Managed by two Madras churches, this garden has four raised beds that are 4 feet by 25 feet and can be split up into smaller sections for individuals; Contact Dale Heckathorn 541-556-0026 or <a href="mailto:heckie4846@crestviewcable.com">heckie4846@crestviewcable.com</a> |
|------------------------------| Willow Creek Community Garden, Madras      | C Street &amp; 11th; Originally managed by Mountain View Hospital, this community garden now falls under the purview of the Madras United Methodist Church. It has 20 plots with an average size of 4 feet by 8 feet. No cost; Contact Jill Plant 541-460-3333 or <a href="mailto:jillplant3@gmail.com">jillplant3@gmail.com</a> |
|------------------------------| Metolius Community Garden, Metolius        | 5th Street &amp; Adams Ave; This garden does not have any individual plots and instead consists of one large irrigated space where members of the community are free to help plant the crops; Contact Deb Mulkey 541-546-6109 |</p>
<table>
<thead>
<tr>
<th>Garden Name</th>
<th>Address</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warm Springs Community Garden</td>
<td>6130 Lower Dry Creek Road; Originally a family's private garden, the Peaceful Spirit Community Garden has two trailer-sized plots that are open to the general public for free - provided they help with its maintenance; Contact Lucinda Green 541-460-3996</td>
<td></td>
</tr>
<tr>
<td>Warm Springs Community Garden</td>
<td>1233 Veterans Street; This garden will have 20 to 36 plots that will range in size from 10 feet by 20 feet to 20 feet by 20 feet. There is no charge to plant them. Contact Edmund Francis 541-553-2460</td>
<td></td>
</tr>
<tr>
<td>Deschutes County</td>
<td></td>
<td></td>
</tr>
<tr>
<td>St. Alban’s Episcopal Church, Redmond</td>
<td>3277 NW 10th Street; Managed by St. Alban’s Episcopal Church; garden features 12 plots that are 19 feet by 20 feet. Gardeners must do their own weeding. No cost; Contact Don Scott 541-504-7744</td>
<td></td>
</tr>
<tr>
<td>COCC Collaborative Garden, Bend</td>
<td>2600 NW College Way; Built by students, this garden has 24 beds that are open to students and faculty at Central Oregon Community College Community College and OSU-Cascades; Contact Lisa Barnett 541-678-5565 or <a href="mailto:lbarnett@cocc.edu">lbarnett@cocc.edu</a></td>
<td></td>
</tr>
<tr>
<td>Franklin’s Corner Community Garden, Bend</td>
<td>NE 8th Street and NE Franklin Ave.; Devoted to using organic and sustainable gardening techniques, this garden has 28 raised beds that range in size from 4-by-10 feet to 10-by-10 feet. Small plots cost $15, large plots $25; Website <a href="http://www.franklinscorner.org/">http://www.franklinscorner.org/</a></td>
<td></td>
</tr>
<tr>
<td>Hollinshead Community Garden, Bend</td>
<td>1237 NE Jones Road; garden has 72 10-feet-square plots that cost $25 and 18 that are 10 feet by 15 feet and cost $35. It is managed by the OSU Extension Service’s Master Gardeners; Website <a href="http://extension.oregonstate.edu/deschutes/hollinshead-community-garden">http://extension.oregonstate.edu/deschutes/hollinshead-community-garden</a></td>
<td></td>
</tr>
<tr>
<td>Community Garden Name</td>
<td>Address</td>
<td>Description</td>
</tr>
<tr>
<td>-----------------------------------------------------------</td>
<td>-------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Kansas Avenue Community Garden, Bend</td>
<td>16 NW Kansas Ave; while most of this garden is used by students at Amity Creek Elementary School, this garden does have a few 3-by-6 foot beds that are open to the public; Contact Denise Rowcroft 541-385-6908 or <a href="mailto:denise@envirocenter.org">denise@envirocenter.org</a></td>
<td></td>
</tr>
<tr>
<td>Miller’s Landing Community Garden, Bend</td>
<td>80 NW Riverside Blvd; Managed by the Bend Park &amp; Recreation District, garden has 24 plots that are 4 feet by 10 feet ($15) and 16 plots that are two feet by 10 feet ($10); Contact Patricia Moreland 541-480-5550 or <a href="mailto:oregonpat@gmail.com">oregonpat@gmail.com</a></td>
<td></td>
</tr>
<tr>
<td>Nativity Community Garden, Bend</td>
<td>60580 Brosterhous Road; Managed by the Nativity Lutheran Church, this garden features 80 plots that are 5 feet by 5 feet. It has a U-pick area for berries and bee hives for pollination; Website <a href="http://nativitv">http://nativitv</a> inclination bend.com/ action/nativitys-edible-gardens</td>
<td></td>
</tr>
<tr>
<td>Northwest Crossing Community Garden, Bend, Bend</td>
<td>Northwest Crossing Drive and Clearwater Drive; 59 plots that are 5 feet by 10 feet and cost $30; Website: <a href="http://www.northwestcrossing.com/amenities/Community_Garden/">http://www.northwestcrossing.com/amenities/Community_Garden/</a></td>
<td></td>
</tr>
<tr>
<td>Plainview Community Garden, Bend</td>
<td>17509 Paradise Alley; Equipped with three new greenhouses, this garden has space for 16 families who live between Redmond and Sisters and donate their produce to a local food bank; Contact Don Schnack 541-389-4440</td>
<td></td>
</tr>
<tr>
<td>Redmond Community Organic Garden, Redmond</td>
<td>724 SW 14th Street; Sponsored by House of Hope Ministries, this garden has 40 raised beds that are 4 feet by 14 feet and cost $25 per person; Contact Darlene Woods 541-309-1594 or <a href="mailto:houseofhopeministries@gmail.com">houseofhopeministries@gmail.com</a></td>
<td></td>
</tr>
<tr>
<td>Sisters Community Garden, Sisters</td>
<td>15860 Barclay Dr.; This community garden features 40 plots that range in size from 4 feet by 18 feet to 4 feet by 20 feet. The smaller plots cost $35 a piece while the large plots cost $50; Contact Kathie Magnum 541-848-768</td>
<td></td>
</tr>
</tbody>
</table>
The Central Oregon Master Gardener Program, now in its thirty-seventh year, trains volunteers on gardening best practices who, in turn, teach their communities. Certified Master Gardeners receive training on topics including: botany and entomology, integrated pest management and pesticide safety, soils, fertilizers and composting, ornamental, herbaceous plants and woody plants, vegetable, indoor and container gardening, sustainable landscaping, and plant pathology.

The Master Gardener Program educates Oregonians about the caring for growing plants specific to their climate and region, while promoting reliable science-based education, relevance of customized gardening information, and reachability for any and all questions. The program also facilitates training sessions so certified Master Gardeners can lead classes in their communities.

OSU Extension Service in Central Oregon has a large variety of information for food systems related education, information, and knowledge. On their website and in the classrooms, students and participants can be educated on a variety of food systems-focused topics from food preservation, safety, and storage to soil testing and amendments, livestock and range management, gardening, and a plethora of horticulture resources.

Other examples of classes and initiatives for the 2018 Summer growing season include water-wise landscapes for gardens, pollinators, insect management, winter garden bed prep, and a High Desert Garden Tour.

Located in the city of Sisters, Seed to Table Oregon has a mission of connecting food, wellness, and education to the 1,300 students educated on their 1.5-acre nonprofit farm every year. According to their own statistics, 20,000 pounds of food are produced each year to provide 200 families with local, healthy, and nutritious food each season. “We focus completely on garden-based wellness education and providing equal access to healthy nutritious food”, says Cailyn Brierley, Farm Manager for Seed to Table. “It’s such a great opportunity for the kids who go to school two blocks away and can walk here every day.”

Cailyn Brierley, Farm Manager Seed to Table.
Photo by Andrew May
The Environmental Center

With a mission to embed sustainability into daily life in Central Oregon, it is easy to see how The Environmental Center has been at the center of the community for over 30 years. The Environmental Center has a variety of programs that deal directly with concerns and needs associated with the food system in Central Oregon.

The School Garden program, with a vision of a garden for every school in Central Oregon, educates leaders on garden-based curriculum and provides grants for school garden or food-based growing projects. According to The Environmental Center, research indicates that integrating garden-based learning into the school environment generates a variety of positive outcomes for students - including physical, intellectual, psychological and more. They also operate the ReThink Waste program which tracks food waste and educates individuals and households about tools and resources to reduce the amount of waste they produce (See Waste & Food Recovery).

Hunting, Fishing, and Foraging

Hunting, fishing and foraging are common activities for many Central Oregon residents, and provides individuals and families with additional sources of food and income, as well as recreational opportunities. Commonly hunted animals include: Black-tailed Deer, Elk, Bighorn Sheep, Mule Deer, and Pronghorn Antelope, while Rainbow Trout and Smallmouth Bass are abundant in Central Oregon reservoirs and lakes, and rivers.

Some hunters said that there limited options for hunting near the larger towns of Bend or Redmond, and travel of up to two hours deeper into Crook or Jefferson counties is necessary. Fishing, however, seems to be less of a commute. As one Deschutes County resident said, “If you’re into fly fishing, there’s an endless supply of lakes and streams within an hour or so drive from town (Bend). And there can be some pretty good fishing literally in town at times.”

Oregon Department of Fish and Wildlife

Oregon Department of Fish and Wildlife (ODFW) has a mission of “protecting and enhancing Oregon’s fish and wildlife, and the habitats they use, for the use and enjoyment of present and future generations.” There is one regional offices of ODFW in Central Oregon, one based in Deschutes County, and a field office in Prineville, Crook County. Each department has a wealth of information for all fishing and hunting needs for Central Oregonians, including regulations and licensing, up to date
reporting on game availability, as well as education and information on conservation efforts.

In 2016, the Department commissioned an independent agency to conduct a statewide report entitled “Oregon Residents’ Opinions on and Values Related to the Oregon Department of Fish and Wildlife”. While the report included Central Oregon in the category of “East”, meaning all counties East of the Cascade Mountains or two-thirds of the entire state, the report displayed a variety of attitudes towards ODFW as well as the most pressing problems facing fish and wildlife in Oregon today. For example, with regards to department priorities, ecological efforts are at the top, including protecting and restoring native fish and wildlife species in Oregon.

When asked roughly what number of folks are hunting for food or for sport, a representative of the Bend Regional Office said that she had never met a hunter who did not hunt for food, “all the people who come in here are hunting to feed themselves and their families.” While it is difficult to say how many individuals are hunting and fishing in Central Oregon in total, each hunting unit has a limited number of tags per species, distributed in an annual application system.

**Hunting & Fishing Rules and Regulations**

In order to hunt and fish in Central Oregon, an individual must have a general license as well as tags. Unlike areas west of the Cascades, where general season hunts require hunters to purchase tags over the counter, hunt units in Central Oregon offer limited entry permits, which require advance applications. Controlled hunts are divided based on location as well as species, and hunters apply in February for Spring bear hunting and May for all other species. The three counties of Central Oregon are included within the boundaries of several hunting units including Upper Deschutes (34), Paulina (35), Maury (37), Ochoco (37), Grizzly (38), and Metolius (39). There are no hunting opportunities on National Park land or tribal lands open to the general public, including The Confederated Tribes of Warm Springs.

General restrictions prevent hunters from hunting before sunrise or after sunset, using drones to track, hunting on private or BLM (Bureau of Land Management) land, or using certain types of weapons. For fishing, general statewide regulations include maximum number of fish taken in one day and annual limits for certain types of species, possessing fish that are smaller than size limit, and fishing outside of daylight hours, among many others.

**Central Oregon Mushroom Club**

Foraging is also a popular activity in the region. Central Oregon Mushroom Club (COMC) has been around for several years, and takes pride in organizing and educating the public about hunting for mushroom throughout the Central Oregon
region. With well-attended monthly meetings, and a website updated regularly with pictures and advice, it is easy for even a newcomer to get involved in mushroom hunting.

For those who are looking to explore the forests of Central Oregon searching for mushrooms, COMC has stark advice, “here are some things you should know about if you don’t already…. eating certain mushrooms can make you painfully dead. Others can make you painfully sick. Others can make you painfully in jail. Harvesting wantonly can make you a pig. Going on private or closed property will cost you money.”

According to one mushroom hunter in Deschutes County, being responsible about your harvest is key to mushrooms returning annually, and respecting your fellow hunters. From the COMC website, “ignorance is a bad thing to take into the woods; it’s your responsibility to inform yourself and make your own decisions about where you go and what you eat.”

**Warms Springs**

Until the settling of the reservation restricted access to historical lands, the three nomadic tribes of the Confederated Tribes of Warm Springs did not require agriculture because natural food resources were in abundance. Salmon from the nearby Columbia River was a staple for the Wasco and Warm Springs tribes, while the high-plains Paiutes diet centered on deer and other large game. Gathering and preparing food, roots and berries, is a substantial part of daily life and culture for all three tribes. Roots were harvested from the ground while berries were gathered in baskets, and salmon captured in nets along the river.

No longer a nomadic population, many of these foods and the methods of obtaining them are still an important part of life on the Warm Springs Reservation. Most of these fishing and gathering efforts go along with the seasons; roots are dug from early spring through late summer, fruits such as huckleberries are harvested throughout the summer and fall, while hunting and fishing occur year-round.
Chapter Three

Processing and Distribution
Processing

Food processing is a wide overarching term meaning the transformation of raw food ingredients into food products or other processed forms. Food processing could include primary-processing like dicing, slicing, freezing, or drying produce to be added to other products. It could also involve activities like liquefaction (juices), emulsification (salad dressings), cooking, pickling, pasteurization and other methods of preservation.

Beef

For ranches wishing to sell their meat products commercially, whether it be to restaurants and grocery stores, or out of state through national distributors, the only processing option is to take animals to USDA-inspected processing facility for butchering. There are two facilities in the region – Oregon Beef Company in Jefferson County, and Central Oregon Butcher Boys in Crook County. Some ranchers still choose to leave the region and process their animals elsewhere due for a variety of reasons. With more than 1,000 cattle operations in Central Oregon, both producers and the processors feel the pressure of tight scheduling.

Relationships are key to getting meat processed, and scheduling butcher dates well in advance is necessary to ensure consistent availability from both the rancher and processors point of view. Scheduling for both parties can be difficult. Cancellations from farmers mean lost opportunities for business at the slaughter facility. Lanny Berman, owner and operator of Central Oregon Butcher Boys puts it this way, “If they can’t bring what they had scheduled, I lose money. This happens quite often. I have to be careful about who I bring in and book. They want me to commit to them, but won’t commit to me.”

One would think that scaling up would be the logical next step; if there is high demand, and scheduling is tough on both ends, hire more workers to meet the demand and alleviate some of the pressure. But as Lanny says, it is not that easy. “we would love to do more processing and grow our operation. The biggest barrier is lack of labor and employment. Skilled or unskilled, it doesn’t matter. No one is looking to be in the business like they were 20 years or even ten years ago. This is the case in
other areas, like our colleagues up in The Dalles. They can't find labor either. I cannot expect my staff to go faster to make things easier for us or anything like that.”

**Poultry**

Central Oregon consumers and farmers have expressed a desire to have USDA certified facility options for processing poultry in Central Oregon, which could lead to greater opportunities for increasing the supply of Central Oregon raised poultry in the meat market. While poultry producers in Central Oregon who meet certain conditions have the option of slaughtering their poultry in an open-air setting as allowed by House Bill 2872A (stipulating no more than 1,000 birds per year, birds are of his or her own raising, processed birds are sold direct to household consumers, at the farm itself), those who wish to expand beyond the 1,000 bird limit have no local option for processing. The on-farm sales stipulation is also limiting because the consumer must travel to the farm.

**Small Scale, Wild Game, and Personal Processing**

For Central Oregon’s small-scale producers, hunters, and the everyday consumer, processing options are available to meet most needs. Hunters processing meat for personal consumption or ranchers planning to sell their meat directly to consumers from the farm, can process animals in a mobile slaughter facility, or through a custom-exempt slaughter facility, neither of which require a USDA inspector on-site. These purchases direct from farm to consumer constitute what is known as “on the hoof” purchasing. Hunters may also use custom exempt or mobile slaughter facilities to process their wild game, or simply process on their own if consumption will be personal or through family and friends.

As far as fishing is concerned, it is assumed that the vast majority of fish caught in Central Oregon are processed independently from both USDA and custom exempt facilities, especially anglers not looking to sell their catch commercially. As it stands, there are no official fish-related processing facilities in Central Oregon. It is unknown what percentage of those fishing and hunters in Central Oregon process on their own or use facilities. Having said that, many facilities exist in Central Oregon to serve this need (see Hunting and Fishing as well as Food Assistance & Food Banking).

**Central Oregon Meat CSA (Community Supported Agriculture) Feasibility Study 2011**

In 2011, the Central Oregon Intergovernmental Council (COIC) conducted a feasibility study to determine whether or not a meat-only CSA would be a viable opportunity for residents of Central Oregon. COIC found that a Meat CSA would be
feasible and profitable, however “the transition from selling through a commodity market to a niche market” might prove difficult. The study found that a CSA could strengthen the connection between consumers and producers, while also generating more business for local USDA-certified producers, and therefore more business for local processors. This Meat CSA would provide an opportunity for processors to, “expand infrastructure and employment to accommodate a stronger market,” which would arise from an increase in CSA ranchers and consumers.

Local Food Businesses and Processing

There are a variety of folks at varying levels processing and preparing food in Central Oregon, transforming local ingredients into marketable and consumable products. Central Oregon provides for varying degrees at which local processors can utilize products from local farms and ranchers, and contribute greatly to the spirit of entrepreneurialism, new food businesses, and culture of appreciation of local food. Because Central Oregon has a relatively small population, local producers and businesses work in an interconnected food web, processing and buying from one another.

Prep, A Chef’s Kitchen

Located in Bend, Prep, A Chef’s Kitchen, is a certified multi-use kitchen renting hourly work stations and facilities to businesses such as food trucks, caterers, vendors and bakers throughout Central Oregon. There are more than 15 businesses that utilize the space at Prep regularly, of which at least five say they regularly utilize Central Oregon products whenever possible. According to General Manager Melisa Erickson, Prep has done great things for the food system of Central Oregon since opening in June 2017. “We provide Central Oregonians the ability to start a business, expand, and grow. Everyone here shares ideas with one another, networks, and shares marketing tips for their food business.” While business might have been slow at first, Prep has seen tremendous growth in its first year, and is hoping to grow and expand to provide even more to the community. “Before, businesses might have rented out a bar kitchen or at a church”, Erickson said. “Now, the public doesn’t have to wonder where these food trucks are preparing their food any more.”

There at least three other commercial kitchens operating in Central Oregon as of July 2018: Kindred Creative Kitchen and Central Oregon Collective in Bend, and Busy Chef Kitchen in Redmond.
Transportation and Distribution

Central Oregon is located in the middle of the state with three main highways and a regional airport. People have expressed a concern about the geographical isolation and that it causes for higher food prices due to importation of food products. Additional concern by citizens and emergency responders is the impending “Great Cascadia Earthquake”, which is similar to the earthquake of 1700. Experts predict this may occur some time within the next 50 years. Many organizations across Oregon have implemented mitigation strategies and distribution plans to handle such a disaster.

The expectation is that Central Oregon will suffer less destruction than others in Oregon, and will therefore play a vital role in the state-wide food system (Highway 97 could be the only remaining roadway leading to NeighborImpact, a regional food bank, and Redmond Municipal Airport.

“Irrastructure is a broad term that covers many factors that influence how we live, and, as it relates to transportation, includes things like roadways, railways, waterways and aviation systems – all of which affect how your food gets to you.” says Robin Madel of GRACE Communications Foundation, a national organization and advocate for public awareness in our food system. “Transportation infrastructure is what makes this country - including our food system - work, and when we fail to fund and maintain it properly, it fails to provide for us.”

Transportation and Producers

Transporters of food in our region are dependent upon three major highways: 97 (running north and south) 20 and 26 (running east and west). The Cascades Range is a unique transportation and distribution barrier for Central Oregon producers who must get their product over the mountains to access bigger markets in Portland and the Willamette Valley. Furthermore, the majority of the highways going through the mountains periodically close in the winter due to snow accumulation.

Transportation can be a major barrier towards the success of any farming or ranching operation, especially when it comes to hauling livestock long distances to processing facilities. This is also the case when transporting products to a farmer’s market, grocery store, or CSA (Community Supported Agriculture) drop off site.

Midsize and larger operations, or a farm or ranch with sales greater than $250,000, may have fleets of vehicles that are regularly maintained, packed to the maximum capacity of efficiency, and make the optimal number of trips to meet their purchasing demands, but smaller operations do not have these advantages.

According to the most recently available data from 2016, of the 2,308 farms in Central Oregon, only 4.3 percent have sales exceeding $250,000. In order to
maximize efficiency, one option is for smaller operations in Central Oregon to cooperate in order to optimize their transportation efficiency and emulate the effectiveness that larger operations have mastered.

**Agricultural Connections**

For the past seven years, Agricultural Connections (AC) has worked to bridge the gap between producers and consumers, while developing networks and relationships that exist at the heart of our community food system. Agricultural Connections, an aggregation and distribution business, transports and stores Central Oregon local and Pacific Northwest regional foods for wholesale and direct to consumer markets.

Owner/Operator Liz Weigand says AC plays a pivotal role in distributing local food. “Agricultural Connections acts as a liaison that connects with both ends, all consumers and producers intangibly and tangibly. Physical equipment infrastructure is utilized to connect throughout the supply chain, then also help to build networks that connect within the food system as well. We touch on all these points of view on a spectrum, and relationships knit it all together.”

Relationship building is key to the logistics of transporting and distributing locally produced food, according to Wieland. AC provides information from the producer about product quality, quantity and consistency to wholesale markets, and market intelligence – which products are in demand and when they are needed – back to the producer. In the future, Wieland believes working with stores to source local food directly to the average consumer shopping at a larger grocery store will be an essential step necessary for building and scaling up a community food system.

Similarly, Wieland speaks to the difficulties of aggregation and distribution by adding, “It costs a lot to have a vehicle on the road and a critical mass (in terms of level of sales) is needed just to break even.”

**Central Oregon Food Hub**

In 2010, the previous Central Oregon Needs Assessment found that lack of infrastructure was a barrier to a robust regional food marketplace for both producers and consumers. In response, Central Oregon Intergovernmental Council (COIC) partnered with regional stakeholders to explore the development of a food hub model. In 2012, a Central Oregon Food Hub Feasibility Study was published with the support of a Food Hub committee made up of representation from: agricultural agency and producer, food business, chefs, distribution, economic development, government, grocer, institution, low-income access was formed.
The Central Oregon Food Hub would need to be a facilities that provides services such as aggregation, storage, and minimal processing for regionally grown, raised, and produced food products from small and medium sized farms, ranches, and food businesses. The Food Hub will connect these small and medium sized suppliers with wholesale buyers to satisfy institutional demand.

In 2014, COIC partnered with the High Desert Food & Farm Alliance to work with community members to develop a food hub value-chain model. This project focused on the WealthWorks framework, which brings together and connects community assets to meet market demand in ways that build livelihoods that last. Outcomes from this project were the development of a regional team, demand data to support the notion that buyers want local food, and next steps identified.

To further understand the food system, COIC and partners determined cold, dry and freezer storage needs, current fresh food supply, demand by wholesale/retail consumers, and the current workings of the supply and value chain. Simultaneously, COIC partnered with the High Desert Food & Farm Alliance and Oregon State University to conduct an economic impact of small to mid-sized farms on the Central Oregon economy. This study also determined the potential number of jobs and total revenue that could be generated if a Food Hub were to be built (see Economic Impact of Local Food Production section).

According to a study from 2014 titled “Improving Systems of Distribution and Logistics for Regional Food Hubs”, Jonah Rogoff states, “despite the rise of demand for local food, food hubs continue to grapple with distribution-related issues that limit their size and scale. Many large conventional distributors (e.g. Sysco and UNFI) manage fleets of hundreds of trucks with regional distribution centers that provide easy access to different urban markets. This contrasts starkly with food hubs or mid-sized distributors with one or two distribution centers. Due to their larger economies of scale and expansive network of suppliers, larger distributors offer competitively low prices for goods that food hubs, for the most part, simply cannot match. Although branding helps differentiate local products, consumers in the conventional retail market mainly buy food based on its cost and quality.”

As of July 2018, an advisory board for the Central Oregon Food Hub has been established consisting of stakeholders in many sectors from farmers and ranchers to investment groups and site developers. A private-sector operator of the Food Hub has been established, and plans are in development to add additional services such as increased storage, light processing and aggregation, collaborative marketing, growth to the distribution network and wholesale economy. Additionally, an independent consultant has been hired to develop a business plan, which will be available by August 2018, with a comprehensive fundraising plan to follow.
Energy and Environmental Footprint of Transportation

Quantifying energy usage in the food system is a complicated task. Larger food operators, while being more complex and diverse, may be easier to measure in terms of environmental footprint because distribution is streamlined, while tracking individual trips to a grocery store or farmer’s market is difficult to measure. This chapter attempts to assess how energy is used with regards to the Central Oregon food system, while making broad recommendations for future assessments, research, and developments to reduce the carbon footprint of our food system.

Food systems can impact the health of the environment both negatively and positively. For example, increased use of mineral fertilizers is responsible for much of the growth in productivity in U.S. agriculture over the past 50 years, but it also has led to negative impacts on the environment, such as greater greenhouse gas (GHG) emissions and deterioration of water quality. GHG emissions also can result from the burning of fossil fuels in the food manufacturing process and during food distribution.

By eating more locally-produced foods, consumers reduce the number of miles their food is transported, which reduces the amount gasoline for trucks and shipping, as well as energy consumed by refrigerated trucks. Local foods also generally require less plastic packaging, which contains petroleum products, and contain fewer preservatives used to extend shelf life. By eating less meat and more vegetables, consumers are lessening the amount of energy, water, food, and land that goes into raising an animal.

Shopping Trips

Consumer shopping trips can be a surprisingly large source of greenhouse gas emissions within the journey of foods traveling from producer to consumer. The modes of transportation consumers use to shop for food in Central Oregon vary, including walking, biking, taking public transit, driving a personal vehicle, or carpooling. In Warm Springs for example, there are no major grocery stores located on the Reservation, and the selection and prices at the small convenience markets is limiting. Warm Springs residents report typically traveling between 15 to 50 miles, one way, to make grocery store purchases. When it comes to shopping, personal vehicles and carpooling are usually the only options, with occasional public transportation usage, though infrequent.

Similarly, residents of Prineville in Crook County have described the process of getting certain foods not carried at grocery stores in town as daunting. “You really
have to weigh out the costs of getting something you want that may be cheaper in Bend with how much you’ll spend in gas”, says one long-time resident. “If I can wait until I have to make other trips to do it all at once, that’d be best, but other times if I want certain greens, or other veggies, I don’t have a choice but to make that hour and half round trip.”

**Packaging and Wasted Food**

While energy use in some areas of the food system have long-been documented, experts are just beginning to measure the impact of wasted food on carbon emissions. According to studies highlighted by the State of Oregon Department of Environmental Quality, “...nationwide a family of four spends $130 per month on food that is thrown away, resulting in 130 million tons of greenhouse gas emissions”.

While the total amount of wasted food in Central Oregon is currently unknown, one answer to mitigating the amount of wasted food, and as a result reducing carbon emissions in our region, is through better packaging to increase a food’s shelf life. Better packaging restricts oxygen from reaching food which causes it to spoil quicker. This, in combination with better education around consumer habits such as Central Oregon based nonprofit Environmental Center’s program Rethink Food Waste Challenge (see Education), could mean ongoing and future abatement strategies will reduce the environmental footprint of our food system in the long term.
Chapter Four

Consumer Access and Retail

Photo Credit: Paradise Produce
Consumer Access

Central Oregon, nearly the size of the state of New Jersey, varies within the scope of travel and accessibility to food outlets, whether that be a commercial grocery store, independently-owned specialty foods purveyor, or honor-system farm stand. While Bend residents have several options for large grocers within three to five miles, such as Walmart, Albertson’s, Safeway, Food 4 Less, Whole Foods, or Grocery Outlet, residents of the the region’s outlying communities travel long distances to grocery shop. Warm Springs residents drive up to 50 miles one way to access the groceries they need. Similarly, residents of Crook County may find themselves making the 45-minute drive to Bend to find the specialty or locally-produced products they desire.

Several Central Oregon markets focus on sourcing local or regional products. The nonprofit, Central Oregon Locavore in Bend, is an indoor year-round farmers’ market with a mission of supporting local farms and ranches while striving to improve food access for all. Similarly, The Humble Beet, on the west side of Bend, offers produce and handcrafted food items like lettuce and soups from Central Oregon farmers. Other grocers that carry local produce and products include Newport Avenue Market, an independent and employee-owned grocery with two locations in Deschutes County, Market of Choice and Whole Foods (both located in Bend). Of the 65 farms and ranches listed in the High Desert Food and Farm Directory, 58 percent sell their products in a retail grocery setting, and/or at a local restaurant.

Rural Grocer Survey

Those living in the more rural communities of Central Oregon, as shown in various chapters throughout this assessment, may rely on rural grocery stores for their day-to-day food needs.

In an effort to better understand industry challenges and strategies for the success of rural grocery stores in the region, this assessment utilized the Rural Grocery Store Survey developed by Kansas State University, surveying seven rural grocery store owners in all three counties and the Warm Springs Reservation. The survey includes questions on products and services offered, suppliers, purchasing and delivery, if locally-grown food is offered, challenges, collaboration, and basic store information (see Appendix).

Charlie’s Produce, a West Coast distribution network, and United Salad, serving the Pacific Northwest as well as Alaska and Idaho, were the two main distributors that grocers sourced their produce from. While 100 percent of stores surveyed stated they would be interested in sourcing locally grown vegetables (one store surveyed does currently, although very minimally), all of the stores stated consistency in availability as
a major issue. “A farmer might show up here one week with the most beautiful lettuce or tomatoes I have ever seen, and offer me a fair price, and then I’ll never see them again”, stated one grocery store owner in Deschutes County. “Or they come in and I say this is great, when can I get more? And they say they don’t know. That just doesn’t work for me.”

Results of the survey vary greatly, both in terms of geographic isolation, products carried and services offered, as well as what customers coming to the store want to purchase. All of the stores, while in a “rural” town in terms of population, were within 5 miles of another, larger grocer. While locally grown vegetables may present an issue for store owners, other locally produce products such as honey, eggs, beef, and jelly were available in 75 percent of stores surveyed. Grocery Bandit in Crook County did not carry any fresh produce, but the store manager clarified that many of the customers came looking for good deals on other products such as frozen meat, soups, sauces, and snacks, saying, “Most of our customers come here to begin with, then head to other stores after they get essentials.”

One common theme for all grocers was the pressure of competition from larger grocery chains and narrow profit margins. Other major challenges for the stores included: old buildings with infrastructure issues, high turnover rate for employees, and customer theft. One grocer stated the biggest challenge to their day-to-day operation was time spent educating consumers on seasonality and the short growing season of Central Oregon. “People come in to the store in the middle of winter and see an avocado from Chile and cannot believe it isn’t local.” The store owner continued by saying their store is unfairly compared to larger, nation-wide grocers in terms of price, but believe they are doing all they can to keep and prices low and stock local products.

Even with these challenges, only one store owner thought an alliance of small, independently-owned grocers would be beneficial for their operation because most said they do better operating on their own.

**Farm and Workplace CSA**

Community Supported Agriculture (CSA) is a collaborative buy-in relationship between consumers and a farm, or cooperative of several farms, where consumers pay a lump sum at the beginning of a growing season, and then receive a weekly box of fresh food for the duration of the growing season. This allows for farmers to have money upfront to cover planting costs, and an avenue for consumers to support their local farming community.

Of the 65 farms and ranches listed in the High Desert Food & Farm Directory, a total of ten or roughly 15 percent operate a CSA. Two of those farms are dairies
operating a herd-share (CSA for raw milk), while the other 13 produce fruits, vegetables, herbs, flowers, value-added products, eggs and meat.

Similarly, High Desert Food & Farm Alliance (HDFFA) launched Workplace CSA program in 2018, connecting local farms with business office employees. The aim of the program is to combine all of the benefits of a CSA with the convenience of a delivery right to the office door for 18-20 weeks. Businesses identify a CSA coordinator, and HDFFA plays the role of a matchmaker to connect to the business to one vegetable producer and one meat producer. HDFFA then provides organizational support and facilitates the initial producer to business meeting. This program also meets workplace wellness goals through the incorporation of healthy food into employee diets.

**On-Farm Sales**

As compared to other laws restricting what a farm or ranch can or cannot do with their products, the sale of produce on-farm direct to the final consumer is straightforward. Some producers opt for a farm stand that has varying days and times of operation, while others choose an honor-system approach where customers can leave cash for their selections in a drop box. This can allow for farmers to develop a regular client base without having to search for, or rely upon relationships with distributors – especially if the farm cannot meet the minimum requirements of volume and consistency that many distributors, restaurants, or grocery stores require. Similarly, as mentioned in the Processing section, some producers may find it easier to maintain a smaller level of production for certain products such as poultry, so they are able to process on-site and sell directly to consumers without having to navigate some rules and regulations required for larger operations.

Of the 65 farms and ranches listed in the High Desert Food and Farm Directory, 48 percent report on-farm purchases as an option to buy their products directly from the source.

**Farmer’s Markets**

With six Farmer’s Markets throughout Central Oregon, customers have many options for accessing local and regionally produced food during the growing season. Deschutes County boasts the most markets, with three in Bend, one in Sisters, and one in Redmond with Jefferson County hosting one in Madras. Crook County does not have a farmers market but farmers do offer a series of on-farm events throughout the summer called Crooked River Open Pastures (C.R.O.P). These rotating pop-up markets and farm tours are hosted at different farms where visitors can experience a local farm and purchase produce, meat, and value-added products like jams and baked goods.
With such a bounty of local food purchasing options, the ability to utilize SNAP (Supplemental Nutrition Assistance Program, formerly food stamps) and WIC (Women, Infant, and Child) benefits at said markets allows more residents to take part. These federal food assistance programs can play an important role in the ability of some Central Oregon residents to access fresh and healthy food (see Food Assistance & Food Banking), so combining that opportunity with a farmers market is a natural fit. However, only the two Bend Farmers Market and Madras Saturday Market accept electronic benefit transfers for SNAP-eligible patrons.

In the past, some Central Oregon markets participated in the state-wide SNAP Match program where SNAP-eligible customers could double their benefits. In the 2018 season, however, no markets participated. Providing matching benefits at local markets could be a step toward bridging the gap between food security and support for Central Oregon producers.

**Produce Delivery**

The popularity of fresh food delivery companies has grown in recent years. Locally, Agricultural Connections (see Transportation and Distribution) is a business that aggregates local products from various Central and state-wide Oregon farms for pickup. Unlike Community Supported Agriculture (CSA), Agricultural Connections does not require a pre-payment, allowing customers more flexibility. Customers order online and select either a weekly pick-up or home delivery option.

Food4All, based in Bend and serving all of Central Oregon, has a mission of connecting farmers and artisan food producers to consumers. Emphasizing convenience, transparency, and simplicity, Food4All is an online platform where farmers can set up an account determine pick up locations or choose to offer delivery services, then begin selling their products. Consumers then set up their own account, check availability of what they are looking for, and make their purchases from home.

Farm to Friends Country Market based in Redmond has a mission of helping people eat fresh food as a part of an everyday, healthy lifestyle, with home delivers and weekly drop off and pick-up sites.

**Public Transportation and Food Access Survey**

Throughout Spring and Summer 2018, a survey developed by the author in cooperation with Central Oregon Intergovernmental Council’s Cascade East Transit, was administered to riders of the public transportation bus system in order to gauge if riders were using public transportation to access food, as well as any potential solutions to improve access to food via public transportation.

Of the respondents, 29 percent said they use public transportation daily to access food, while 35 percent use it weekly. Reasons given for never using
transportation to access food included the respondent being able to walk to a grocery store nearby their home, or that another member of household did the majority of the food shopping. Half of respondents said increased hours of transit service would provide for more food access opportunities. This would include routes being expand to run earlier in the morning and/or later in the evening during the work week. More than 80 percent of respondents said that Sunday service hours would allow them to access food more frequently, as well as allow them to work more hours at their job since the bus is their main form of transportation. Several respondents, when elaborating on this question, stated that Sunday service would positively impact their lives in several ways, such as more time with family and friends, and ability to have more recreation or leisure time.

More data will be necessary to understand further ways to improve the relationship between food access and public transportation in the region. For example, many respondents stated without prompting that they use the bus to go to food banks and food pantries. Anecdotally, bus drivers also commented that they often see riders carrying boxes of food from pantries. “I pick up people with food pantry boxes all the time, several per day, and oftentimes it’s a lot of food and difficult to carry, you know, not easy to walk around with,” states a driver.

Similarly, additional data would be beneficial to determine if the existing transit system is providing a direct connectedness between low income and rural communities and food retail locations. Since rural transportation services in Central Oregon are utilized on an as-needed basis, it was very difficult to gather the opinions and perspectives of those living in rural communities who utilize public transportation.
Institutions and Food

Large institutions, such as hospitals and schools, purchase (and sometimes grow), prepare, and distribute large volumes of food to many people on a daily basis making them a powerful player in local food systems. When any institutions has the ability to grow food for themselves, or purchase from local farms and ranches, this spending can be a boon to the local food system and economy. Meeting the generally higher volume demands as well as consistency and quality institutions typically require can be a challenge for small and mid-size local farmers. However, as agriculture in the region continues to grow, there is an increased interest both for producers seeking to sell to institutions, and institutions looking to purchase from local producers. There are several Central Oregon institutions highlighted below that are taking the steps to increase local food procurement and ensure the food they are serving supports their communities.

**Bend-LaPine School District**

Bend-LaPine School District is the second largest employer in Central Oregon and has a student population of over 18,000. Approximately 15,000 meals are served each day by the Nutrition Services team, making this the largest district in Central Oregon.

According to the Central Oregon Food Hub Feasibility Study, Bend-LaPine School District purchases some food products from Oregon-based farms and businesses. Most of those items come from within 130 miles of Bend while the flour products (such as bread and pizza dough) come from Portland (155 miles) and Pendleton (242 miles). The school district prioritizes Oregon products, but does procure outside of the Central Oregon area because the supply and price are consistent and better meet their needs. As stated in the feasibility study, barriers for the Bend-LaPine School District purchasing more local products include: lack of volume of food available from Central Oregon producers, lack of consistency in the product, limited established relationships with producers, and price point.

According to the 2015 USDA Farm to School Census, 42 percent of school districts nationwide reported that they participate in some form of Farm to School activities, a record high.
Central Oregon Community College

Colleges and universities are also purchasing more local food than in previous years to serve in their cafeteria. Central Oregon Community College (COCC) has approximately 16,500 students and a dining service that feeds several hundred students every day. According to COIC Sodexo Dining Services Manager Melissa Miller, students are asking for more local food. Through connections made by HDFFA, COCC started working with Agricultural Connections in 2017 to source mixed vegetables and meat from Rainshadow Organics.

“As a dining service provider with 325 clients, it is our objective to serve what our customers are demanding,” Miller said. “We are working to source local food from within the community we operate in.” Miller adds that sourcing local food is not where the college’s commitment to supporting local farms ends, “we are hoping to have more product on hand next year for use on our menu and salad bar options. The chef is also on the committee to talk about challenges facing food establishments/farmers on getting the product to those who would benefit from it the most.”

Deer Ridge Correctional Institution

Deer Ridge Correctional Institution (DRCI) is located in Jefferson County has a population potential of 945 inmates. In order to alleviate some of the costs of food for the dining services, DRCI has a vast garden system totaling over 10 acres with growing spaces both inside and outside the institution.

Travis Brown, one of the garden managers for DRCI, says that the program has made a huge dent in the cost of food for the facility. “Our harvest for 2017 was 16,912 pounds of food, and that is just from the area outside of the fences,” he said. Brown said the biggest alleviation of cost for dining services has been the production of herbs. “We grow basil, thyme, sage, rosemary, chives, and garlic all on drip lines to save water, and combat weed growth. This has saved dining a huge amount of money.”

The produce grown throughout the season means the facility no longer has to purchase some crops like lettuce during the summer months. Furthermore, the
produce from the garden does not end with the growing season. With more 1,700 pounds of tomatoes grown in 2017, and “an unbelievable amount of squash” says Brown, the dining facility is still using produce they prepped and froze nearly one year after the harvest.

DRCI next plans to reinvigorate the OSU Master Gardener certification program with Central Oregon Community College, which used to be offered at the facility. Additionally, Brown believes that with all of the space surrounding DRCI, there exist several opportunities to expand production. “Since Deer Ridge along with all of the facilities across Oregon prepare their own bread, I think we could be running our own dry-land wheat program, and grown enough wheat to produce our own bread, and possibly enough for other facilities as well,” he said.
Chapter Five

Food Insecurity and Assistance
Food Insecurity

Food insecurity refers to having limited or uncertain access to adequate food for an active and healthy lifestyle. Food insecurity differs from hunger - a physical response someone experiences – in that it can be experienced at the individual, household, or community level. Multiple and overlapping issues such as low wages, poverty, affordable housing, access to health care can all contribute to food insecurity. While poverty and food insecurity are often closely related, not all people living below the federal poverty level are food insecure, and those living above the poverty line may experience food insecurity as well. This section focuses on the most recent available data detailing food insecurity rates in Central Oregon.

Source: Adapted from the USDA Economic Research Service.
Map the Meal Gap

Since 2011, Feeding America’s annual Map the Meal Gap report estimates food insecurity rates and average food prices down to the county level. The results of the study are portrayed through an online interactive map, showing food security rates among the overall population, children, average meals costs, and what portion of food secure individuals likely qualify for federal food assistance benefits such as SNAP (formerly food stamps). Below are snapshots of Oregon as a whole as well as each Central Oregon county in 2016 from the 2018 Map the Meal Gap report.
Average Meal Cost

One component measured by the Map the Meal Gap is average cost per meal. Nationally, that average rests at $3.00 per meal, with $2.93 per meal for the state of Oregon as a whole. In Central Oregon however, grocery prices are estimated to be higher than average. In Deschutes County, the average meal cost is $3.30, $3.56 in Jefferson County, and remarkably $6.20 in Crook County, according to the 2018 report. This led some to doubt the methodology used for these estimates – namely a survey of prices of common grocery items at local stores.

Many residents were skeptical after hearing of the statistics. One Prineville resident said, “I live in Prineville, and if it were 40 percent cheaper to buy groceries in Madras (as the figures claim), I’d sure do my shopping in Madras. I might not drive to Bend to save 40 percent on groceries, but I’d sure go to Madras.”

In February 2018, local newspaper The Central Oregonian investigated the accuracy of the meal cost estimate. While the newspaper found no definitive evidence to dispute the estimates, they did find large price fluctuations between stores and season.

These graphs show the total cost to purchase 15 standard food items, including milk, bread, sugar, and beef, at various local stores. Graph courtesy of Jamie Wood of The Central Oregonian.
**Voices Project**

A project by Oregon Food Bank (OFB), Voices focus groups, brings attention to stories and insights of Oregonians facing food insecurity and the issues that matter to them. The collected stories are intended to help guide Oregon Food Bank's work and allow for more effective and efficient progress toward ending hunger in Oregon.

In the Spring of 2018, Oregon Food Bank partnered with NeighborImpact Regional Food Bank to host focus groups in Bend and Metolius (Jefferson County). Participants discussed concerns such as recipes for stretching food out when on a tight budget, and feeding neighbors in need. “I’ve found the people who are the poorest give more and help people that are hungry and needy than people who have a lot,” said one participant. “I think it’s because maybe people who haven’t had food, they know what it’s like, and then help people, other people.”

**Hunger Factors Assessment**

Another project from OFB is the Hunger Factors Assessment survey which is used to identify the demographic, economic, social, health and related factors that affect people visiting a food pantry (see Food Assistance & Food Banking). According to the 2015 Report, “understanding the factors of income, race and place on the people we serve - as well as their coping strategies - allows us to design programming. We are also able to create upstream interventions with clients and community partners that can support longer term food security.”

As detailed in the report, a variety of factors may lead to an individual or household experiencing food insecurity including but not limited to poverty, difficulty accessing food, unemployment, health, or housing costs. For example, 48 percent of respondents said at least one member of their household had high blood pressure, 70 percent had experienced unemployment at some point during the past two years, and 72 percent were living at or below the federal poverty level.

**Hunger Among College Students**

Recently, the issue of hunger among college students has received more attention nationally. In 2018, the Wisconsin HOPE Lab released a national survey of need among college students titled “Still Hungry and Homeless in College.” Thirty-six percent of college students surveyed reported not getting enough to eat while one in ten students reported going at least one day per month without eating. Many colleges and universities have recognized this need and opened food pantries or offered food assistance programs on their campuses in recent years.
Locally, the Associated Students of Central Oregon Community College (COCC), provides a free, year-round food pantry to all COCC students. COCC campuses throughout Central Oregon also provide students in need with bags that contain approximately three meals. Similarly, Oregon State University Cascades Campus in Bend offers a food pantry available to both students and non-students.

**Food Assistance and Food Banking**

**Supplemental Nutrition Assistance Program (SNAP) & Women, Infant and Children (WIC)**

SNAP (formerly food stamps) and WIC are federally-funded programs which provide monthly benefits for low-income people to buy food. According to the Oregon Department of Human Services, as of April 2018 there were 27,412 individuals in Central Oregon receiving SNAP benefits, totaling $3,531,454 in annual benefits. Between 2011 and 2015, roughly 20 percent of households in Central Oregon participated in SNAP, ranging from an average of 17.3 percent of households in Jefferson County and an average of 24.7 percent of households in Crook County, according to a Food Research and Action Center analysis of American Community Survey data. In 2017 (the recent data available), there were 8,465 women, infants and children of Central Oregon participating in WIC totaling $3,113,778 in annual benefits.

It is clear that both SNAP and WIC are widely utilized and beneficial programs in Central Oregon given the high levels of participation and need. If SNAP or WIC benefits don’t meet a family’s needs in a given month, they have the option of patronizing partner food pantries or meal sites of the NeighborImpact Food Bank to supplement their other food benefits. SNAP, WIC and other federal feeding programs like the Free and Reduced Lunch program are outlined in the Farm Bill, which must be reauthorized by Congress every five years. Proposed changes to SNAP in the 2018 bill currently under debate at the time of this report’s writing could significantly reduce the number of Central Oregonians eligible for benefits or impose additional work requirements for receiving benefits.

“If there was a reduction [in SNAP benefits], the food bank would have a greater burden”, says NeighborImpact Food Program Director Carly Sanders, “greater demand means greater resources are necessary to keep up with need.”
**Free and Reduced School Lunch Program**

The National School Lunch Program (NSLP) is a federal meal program operating in public and nonprofit private schools and residential childcare institutions. It provides nutritionally balanced, low-cost or free lunches to children each school day. Central Oregon has several school districts, each with varying levels of student participation in the Free and Reduced Lunch Program. In the 2017-2018 school year, 48 percent of Crook County students, 74.4 percent of Jefferson County students (including The Confederates Tribes of Warm Springs), and 42.3 percent of Deschutes County students, were eligible for the program, according to publicly available data.

**NeighborImpact Food Bank**

As the regional food bank of the Oregon Food Bank Network serving Central Oregon, NeighborImpact Food Bank has one of the largest geographic areas of any food bank in the state. NeighborImpact and its 47 partner agencies serve all three counties of Central Oregon including portions of The Confederated Tribes of Warm Springs. The food bank is responsible for overseeing direct service agencies like food pantries and meal sites, which distribute food directly to clients, as well as two direct client services programs, which NeighborImpact operates independently. This all adds up to 3.8 million pounds of food distributed per year. As more people flock to the natural beauty abound making Central Oregon their new home, an even greater pressure is put on NeighborImpact Food Bank to keep up with need. “One of the greatest challenges right now,” says Food Program Director Carly Sanders, “is keeping up with population growth in Central Oregon and lack of affordable housing options.”

**Oregon Food Bank (OFB) Client Food Preference Survey**

In the spring of 2017, Oregon Food Bank conducted a statewide Client Food Preference Survey to identify which foods pantry clients want and what storage and cooking facilities clients have available. These results were particularly helpful for Regional Food Bank NeighborImpact as it helped to identify which foods are too expensive for folks, and asked respondents to prioritize foods commonly offered at pantries. As an example, the five most desired foods from the food pantry were:

1. Meat
2. Dairy
3. Fresh fruits and vegetables
4. Eggs
5. Cooking staples (oil, margarine, flour)
Clients who took the survey voiced that they are more often looking for meat and dairy when patronizing food pantries. As one food pantry patron from the city of Metolius in Jefferson County stated, “we don’t buy steak or seafood at the store. That just isn’t a consideration.” According to pantry staff, families are more likely to purchase large, economical meat cuts such as, pork roast when on sale to cut up and eat throughout the week or freeze, as opposed to prime meat cuts and seafood. This indicates that certain cuts of meat are not an option, and reinforces the survey results.

**Fresh to You Mobile Market**

NeighborImpact Food Bank is a leader for providing healthy and fresh food to low-income communities throughout Central Oregon. One of its newest programs, which will be launched in 2019, is called the ‘Fresh to You’ mobile market. In partnership with the High Desert Food & Farm Alliance and healthcare providers, the mobile market refrigerated truck, which will travel to remote communities and health clinics in the region not currently served by a food pantry to distribute fresh produce and staple items. According to Food Director Carly Sanders, “‘Fresh to You’ will build NeighborImpact’s capacity to distribute fresh and healthy foods to underserved areas.”

**Grow & Give Campaign**

Beginning in 2015, the High Desert Food & Farm Alliance (HDFFA) began a fresh food donation program called Grow and Give. This ongoing campaign works to collect fresh produce from Central Oregon Farmers Markets as well as through gleaning events with local farms for donations to NeighborImpact Food Bank.

Gleaning, or the collection of excess harvest from the field of farms, is a volunteer powered component of Grow and Give which brings produce directly from the field to NeighborImpact (see Waste & Food Recovery). Individuals and families can also participate in the program by growing additional crops in their gardens or donating excess produce from home, sharing in their bounty and contributing to their community. Customers at the farmers market can contribute as well by donating funds used to buy crops directly from the farmers. “This donation program is a triple win”, says HDFFA Board Member and program founder Jane Sabin Davis, “farmers market shoppers can donate $5 to HDFFA and are entered to win a $30 gift basket from local farmers; HDFFA supports our local farmers by purchasing their fresh food at retail prices; and food bank patrons receive locally grown fresh food at the pantry.”

The success of the program is palpable on all levels, particularly from food bank clients who see a greater variety in terms of freshness and types of produce. NeighborImpact’s Food Program Director Carly Sanders says, “every other week throughout the summer we were able to donate fresh lettuce, tomatoes, kale,
potatoes, and more to help folks have fresh food on their families’ plates”. Grow & Give operates at two farmer’s markets in Bend, one in Redmond, and one in Sisters, all located in Deschutes County. HDFFA hopes to expand their efforts to other regions in Central Oregon in the future.

**Bend Food Project**

The Bend Food Project is a volunteer-run nonprofit with a mission of developing a sustainable process to collect donated food and deliver to food pantries throughout the city of Bend. Neighborhood Coordinators collect food every other month from households, schools, churches, and local businesses they recruit. By focusing on non-perishable food items, Bend Food Project is able to utilize other organizations to distribute food to clients, such as The Giving Plate, who has distributed over 2.8 million pounds of food in Central Oregon since 2010, making it one of NeighborImpact’s largest partner pantries.

**Wild Game and Food Assistance**

As of 2018, NeighborImpact is actively looking into the expansion of a program that allows for hunters to donate hunted game to the food bank which can be processed in either USDA-inspected, retail-exempt, or stationary custom-exempt processing facilities. For wild caught fish, such a program would require that whole fish are inspected, stored, transported, and distributed to the food pantry patron at the proper temperatures. This would require a large investment of resources for cold storage infrastructure and education for at-home processing. As of June 2018, there are no fish processing facilities, state-licensed or otherwise, in Central Oregon (See Hunting, Fishing, and Foraging).

Currently, 33 states in the U.S are involved in with Farmers and Hunters Feeding the Hungry (FHFH) in allowing hunters to more effectively donate hunted game to local food banks. Barriers for this program include changing legislation to incorporate game birds into the donation stream, as well as giving local processors the ability to participate in the program in cooperation with hunters and adequate funding. As it stands, most hunters tend to keep and eat their own hunted game. Similarly, the high cost of processing makes it less likely that hunters could afford to donate hunted game.

For example, according to Daniel Crunican, Food Resource Developer with the Oregon Food Bank, “The difference between a one-time random donation versus an ongoing donation program makes the cost and effectiveness of a program difficult to determine. In a situation where $.30/pound offset of 1,400 pounds donated elk, compared to $.80/pound offset of 50,000 pounds of donated pears, it is clear to see
where offsets, costs, and availability coincide to make game donations not only difficult, but impractical."

One such opportunity to overcome these barriers would be to examine the ways in which donation funds are being used in other states. For Montana’s FHFH program, donations are automatically incorporated into the cost of tags purchased by hunters. These funds, totaling nearly $70,000 annually, are used for the processing game for donation the following year. Processing facilities apply to receive funds, and hunters are notified which processors will accept their game. The game is dropped off by a hunter at no cost, processed, packaged and frozen by the facility then later picked up by a pantry or food bank. This system allows for the highest of food safety standards at a minimal cost to hunters, and a streamlined approach to funding, that ensures an ease and continuity of availability of meat for the food banks.

FEAST

FEAST (Food, Education, Agriculture, Solutions, Together) is a community organizing process developed by Oregon Food Bank (OFB) that allows community members to engage in a facilitated discussion about food resources, challenges and opportunities for their food system. OFB believes each community is uniquely situated to identify strengths and opportunities for their own food system and allows FEAST to bring folks together to share a meal, share thoughts, and collaborate on an action plan to improve their local food system.

Crook County FEAST

In March of 2018, more than 50 community members of Crook County including ranchers, gardeners, nutritionists, farmers, food pantry volunteers, nonprofit staff, and community members gathered together in Prineville for a FEAST event organized by members of Crook County on the Move. Crook County on the Move is a network of Crook County stakeholders working towards a vibrant and healthy lifestyle for all Crook County residents. Together FEAST participants identified a wide variety of challenges, resources, and opportunities including:

**Challenges:**

- Lack of knowledge surrounding resources
- Overlap in services; lack of coordination between service providers
• High food prices locally
• Reality of what it means to be “low income

Resources:
• Strong network of local farmers and gardeners who work closely with one another
• Several food assistance options via pantries, school programs, and a senior meal site
• 4 large grocers
• Network of nonprofits and food/farming agencies

Opportunities:
• In order to effectively work towards improving the local food system, a group of post-FEAST leaders opted to create a Food for Folks Resource Guide, the first addition of which was published in June 2018. The guide includes resources for gardening, food assistance, volunteer opportunities, and where to find local food.

As another outcome of the FEAST, the community planned regular community garden events throughout the 2018 growing season, and is developing a program to share excess home garden produce. With volunteers and community members hard at work, the FEAST event has inspired more action toward strengthening existing programs and encouraging and promoting new projects and initiatives.

Warm Springs Community Food Conversation

In June, 2018, a small group of tribal members and local stakeholders met for what was described as a “First Course of Community Food Conversations” for the Confederated Tribes of Warm Springs. With both tribal leaders and area nonprofit stakeholders actively participating, many topics were discussed surrounding themes of “feeding our people”.

With a FEAST leadership team in place, the Confederated Tribes of Warm Springs are working towards a larger, community-wide conversation about food in the next year. Identified ideas for improving the food system include:

• A food pantry
• A program to leverage bulk and co-op purchasing power
• An Elders kitchen for intergenerational learning and food preservation
While this is not the first initiative geared towards tribal food system development for Warm Springs, the collaboration with Oregon Food Bank and other Central Oregon partners shows promise for long-term growth in the region. Food preservation, family bonds, larger community involvement, and reclaiming food sharing strategies began what shows the promise of many more thoughtful, active, and engaged conversations to come.
Chapter Six

Community Health & Wellness
Health and Wellness

Food security and access to healthy foods is a major contributing factor to one’s health. Incorporating fresh and healthy fruits and vegetables is one preventative measure to address diseases, such as Type 2 Diabetes or Cardiovascular disease. According to Feeding America’s Map the Meal Gap Study, an estimated 28,340 Central Oregonians experienced food insecurity in 2016, meaning that at times during the year they did not have enough food to eat or worried their food would run out. (see Food Insecurity and Assistance).

Central Oregon Regional Health Improvement Plan 2016-2019

The Central Oregon Health Council (COHC) is a nonprofit serving as the community governing board for the Coordinated Care Organization (CCO) in Central Oregon. Together with healthcare partners, COHC developed the Central Oregon Regional Health Improvement Plan (RHIP) in order to develop policies and strategies for health promotion, and to give organizations comprehensive information about the community’s current health status, needs, and issues. The RHIP addresses the broad issues of health as well as the specifics of health care within the diverse region of Central Oregon. Workgroups composed of healthcare professionals, dietitians, nonprofits, and experts in the healthcare sector use the RHIP as a guiding document to strategize health improvement initiatives to meet the plan’s goals.

An example of a funded program through the RHIP workgroup is the Veggie Rx program being delivered by the High Desert Food & Farm Alliance. Veggie Rx is a fresh produce prescription program that improves healthy eating habits for individuals experiencing food insecurity and diagnosed with diet-modifiable disease. The pilot aims to increase the access to and consumption of fresh vegetables and fruits by participants who receive vouchers for produce and nutrition education at Bend Farmers Markets.

In terms of diabetes prevention and control, the RHIP emphasized various strategies to decrease obesity rates and other risk factors for developing Type 2 Diabetes. For example, a focus on, “partnering with grocery stores and farmers markets to increase pre-diabetes and diabetes awareness programs” and encouraging, “healthy community design and policies that increases opportunities for access to healthy food” stand out as community food system strategies related to health and wellness.
Assessment of Central Oregon Nutrition Wellness Programs

One aspect of Central Oregon Health Council’s Regional Health Improvement plan listed as “critical” includes community linkages to manage, “the health of residents by connecting the clinic with community programs that share the goal of improving the health of residents in the community.” In an effort to create more linkages in Central Oregon communities for improved diet-related health concerns, specifically cardiovascular disease and Type 2 Diabetes, High Desert Food & Farm Alliance was funded by the Central Oregon Health Council to produce an Assessment of Central Oregon Nutritional Wellness Programs during Fall 2017.

The overarching objective of the assessment was to, “establish and disseminate a comprehensive needs assessment of nutritional programs in Central Oregon, and identify gaps and barriers regarding their availability, dissemination, and implementation” by targeting three groups of stakeholders: Central Oregon residents and users or potential users of nutritional programs, health care practitioners who refer or may refer patients to nutritional programs, and professionals implementing nutrition programs. Key findings were:

- Residents and health care practitioners were aware of nutrition assistance programs (such as WIC) versus nutritional education programs (such as Cooking Matters).
- Residents to not make a connection between their own health and their diet
- Those most at-risk for diet modifiable diseases, because of low fresh food consumption, are not routinely referred to nutrition education programs
- Fresh food is too expensive for most people and that health care professionals agree that fresh food is critical to implementing nutrition education programs.

Recommendations and opportunities highlighted in the assessment include:

- Develop and implement an online resource for nutrition education programs to facilitate health care referrals and usage
- Promote “food as medicine” campaign to increase the understanding of the link between diet and health
- Systematically identify people at risk for diet-modifiable disease and/or food insecurity and automatically refer them to a nutrition education program
- Implement a Veggie Rx (fresh food prescription) program with the medical community alongside nutrition education program for low-income residents.
Mosaic Medical Food Insecurity Screenings

In 2018, Central Oregon-based Mosaic Medical began a pilot initiative to screen for food insecurity among new patients at the Redmond Clinic in Deschutes County over the course of nine weeks. The screening used the nationally recognized Hunger Vital Sign screening tool asking patients to answer yes or no to the following statements:

- Within the past 12 months we worried whether our food would run out before we got money to buy more.
- Within the past 12 months the food we bought just didn’t last and we didn’t have money to get more.

The clinic chose to only screen new patients in order to better incorporate the process into existing beginning paperwork. Of the new patients screened, 30 percent responded positively to experiencing food insecurity. This is higher than overall rate in Oregon of 14.6 percent, and U.S rate of about 12 percent; however Mosaic is a local non-profit community health care system that provides services regardless of income or insurance status and typically see a higher rate of food secure patients.

The screenings supported past research finding that patients with health conditions such as obesity, hypertension, and depression show higher rates of food insecurity. Similarly, patients utilizing Medicaid, tested positive at higher than average rates for food insecurity, or two times the national average.

Those who screened positive for food insecurity received pamphlets with food pantry information in Central Oregon, follow-ups with community health workers to enroll in eligible food assistance programs such as SNAP and WIC.

Next steps for program include working with the High Desert Food & Farm Alliance to expand and develop the Veggie Rx program, develop an internal Veggie Rx program at Mosaic and expand screenings to those who are positive for obesity. Colette Whelan, a doctorate student at University of Portland who spearheaded the screening initiative said, “my hope is that it gets extended to all Mosaic clinics, for all patients. We’re working to provide the most resources in the best way, by working with community partners.”

Programs Impacting Community Wellness

Veggie Rx

In an environment where access to health foods could be a remedy for diet-related health issues, Veggie Rx is one program addressing barriers to healthy eating. There are several Veggie Rx programs throughout the nation and Oregon including a
large program in the Columbia River Gorge. In Central Oregon, the High Desert Food & Farm Alliance is spearheading a pilot project funded by PacificSource Foundation for Health Improvement and the Central Oregon Health Council.

Under the program, patients who screen positive for food insecurity or diet-related diseases such as heart disease, Type 2 diabetes or pre-diabetes, are eligible to receive vouchers to purchase fruits and vegetables at the two Bend Farmers’ Markets, and also receive one-on-one counseling and nutrition education at the farmers’ markets where they redeem their vouchers. The program is designed to meet the community’s food needs by connecting clinicians, at-risk members community members, and farmers.

“Patients come to the farmer’s market eight weeks in a row and each week they get their vouchers,” says Hannah Brzozowski, Community Health Worker with High Desert Food & Farm Alliance. “We also provide nutrition info, help with shopping tips, and check in to see what was bought and what meals were made”. In total, patients will receive $180 worth of produce over eight weeks.

In the end, Veggie Rx is an opportunity to access healthy food, improving people’s health while also supporting local farmers in Central Oregon. Furthermore, the education component and curriculum is a crossover with Cooking Matters (see Education). All Veggie Rx participants are also eligible to take the Cooking Matters course to gain more comfort and skills in the kitchen. “The bottom line is about increasing access to fresh vegetables and fruits, which we hope will lead to changes in diet, and an increased health status,” says Brzozowski. “We are proud to offer this pilot program in Central Oregon to empower patients as well as health care providers to prescribe produce to those who need it most.”

Healthy Life Schools Challenges

A program of PacificSource, Healthy Life Schools Challenge in Central Oregon is an effort to, “encourage participants to learn how healthy snacking can have a positive impact on their overall health.” This program is in response to new data that links obesity rates in Oregon to an increase in caloric intake and a decrease in physical activity. Targeting staff and teachers at K-12 schools, the goal of the four-week challenge is to have teachers set health examples for their students and encourage more physical activity.

Another goal of the program is to measure how much sugar kids consume, according to Chelsie Carter, health and wellness program specialist for PacificSource in Central Oregon. “So far, we have seen a huge impact in Warm Springs, and hope to replace high calorie snacks with fruits and veggies in other schools very soon.”
Cooking Nutrition and Healthy Eating Education

Cooking Matters

Since 2014, High Desert Food & Farm Alliance has been providing the Cooking Matters curriculum throughout communities in Central Oregon in collaboration with Oregon Food Bank, Share Our Strength, and No Kid Hungry. The Cooking Matters program utilizes home cooks, professional chefs, and nutritionists who volunteer their time and expertise to lead hands-on courses that teach adults how to purchase and prepare nutritious meals on a budget. Participants learn to shop smarter, use nutrition information to make healthier choices and cook delicious, affordable food. Cooking Matters classes are held one evening a week for six weeks, twice a year for a total of ten each year in 7 of the 8 counties in the region. To date, HDFFA has taught 19 courses to 696 participants, and utilized over 630 volunteer hours throughout Central Oregon.

OSU Extension Services: Nutrition Education Program

The Nutrition Education Programs of OSU Extension Services in Central Oregon serves a variety of audiences in Crook, Deschutes and Jefferson Counties. The Oregon Family Nutrition Program (OFNP) provides nutrition education, food safety and food resource management education to individuals, receiving or eligible for SNAP (formerly food stamps). Nutrition education is offered to children, adults, families, including senior and single adults. The Oregon Family Nutrition Program provides educational opportunities at schools, community sites, businesses and agencies. OFNP offers the following:

- Partnerships with public and private service providers to enhance and expand education services
- One-time single events such as workshops, demonstrations, exhibits, etc.
- Series of nutrition education classes that includes:
  - Making healthy food choices
  - Eating fruits and vegetables
  - Choosing meals and snacks that reduce fats, sugar and salt
  - Preparing inexpensive healthy meals
  - Food safety
  - Staying physically fit
Central Oregon Community College, Cascade Culinary

As important as it is to educate our next generation of farmers and gardeners to grow our food to build a strong community food system, it is just as important to educate our next generation of chefs and kitchen managers. Cascade Culinary faculty and students are strong collaborators in food systems initiatives throughout Central Oregon. Each year Central Oregon Community College’s (COCC) Culinary department partners with NeighborImpact for the food bank’s annual Empty Bowls fundraiser. Similarly, a longtime partnership with HDFFA has allowed instructors of the Culinary program to teach Cooking Matters classes in some Central Oregon communities.

Furthermore, COCC has a variety of courses offered through their continuing education program, taught on campus at the Collaborative Garden and throughout Central Oregon. Classes include gardening with medicinal herbs, high desert gardening basics, and flowers to feed your soul.

Food Corps

As a program of AmeriCorps, FoodCorps has a mission of connecting kids to healthy food in school through hands-on gardening and cooking classes, implementation of healthy school meals, and fostering a school-wide culture of health.

“Overall, to really incorporate garden education into schools, the lessons have to meet state standards so teachers can actually use academic time” said Claire Londagin, FoodCorps member for Deschutes County for the 2017-18 school year. “I am working on a lesson sequence for each grade level that is related to the climate of Central Oregon that future FoodCorps members can use and offer to teachers as a package with greater food systems concepts appropriate for each age level and connected to grade standards.”

With several years of FoodCorps members having served in Deschutes County over the years, it is easy to see how the addition of more members would benefit the children and communities of Central Oregon. “Hands on garden education has been shown to have a greater impact on behavior changes”, continued Londagin. “We are working to get to a point where things will be self-sufficient.”

With the current FoodCorps member being housed at The Environmental Center and schools in Deschutes County, they are the only member serving in all of Central Oregon. However, there are plans in development to bring more FoodCorps members to all three counties of Central Oregon. “We want to cluster more FoodCorps members together in Central Oregon. One in each county for a more focused, connected, and robust program”, said Denise Rowcroft, sustainability educator with The Environmental Center.
Chapter Seven

Food Waste and Recovery

Gleaning Event at Casad Farms, Madras Credit: HDFFA
Food Waste and Recovery

According to the USDA, 40 percent of edible food in the U.S. is wasted either: in the fields because it doesn’t make financial sense to harvest the full crop, in processing facilities, at supermarkets and restaurants across the country, or in our homes. As shown in the figure below, the EPA issued Food Recovery Hierarchy details the levels at which food should be reclaimed and utilized, beginning with consumer reduction. Local efforts working towards these strategies include: the Grow and Give Campaign of High Desert Food & Farm Alliance with NeighborImpact, as well as Food Too Good to Waste of The Environmental Center.

Waste Reduction

One key step that individuals can take to reduce waste is to scrutinize their own purchases and habits. According to some estimates, 90 percent of people throw away food too soon, before it expires. Mitigating this comes down to individual consumer choices to eat what they buy, make use of leftovers following cooking a meal, and being conscious of planning ahead to reduce food spoiling.

Locally, Food Too Good to Waste, a program of Rethink Waste and The Environmental Center aims to target household food waste by recruiting 100 houses to measure the food waste they generate for six weeks during the Spring and Summer. The program will also offer strategies for preventing waste in the future such as tips for food storage and prep, and planning for leftovers. With this first cohort of households, program leaders hope to quantify how much the tips’ reduce waste and then incorporate their learnings into the Rethink Waste program as a whole.
Gleaning

Within the food recovery hierarchy, the second most preferred strategy for reducing waste is funneling food already produced to programs feeding hungry people. Gleaning is defined as the collection of excess wholesome food, or salvageable produce from farms for distribution to those in need. NeighborImpact Food Bank participates in several programs to recover food that can feed hungry Central Oregonians including the Grow and Give campaign with High Desert Food & Farm Alliance (See Food Insecurity and Assistance), on-farm gleaning events, and the Fresh Alliance grocery recovery program, which collects excess food or foods close to sell-by dates from area grocery stores. Nearly 20 area stores participate in the Fresh Alliance program, donating about one million pounds of food to the food bank each year. For the past two years, NeighborImpact has also partnered with local farmers to glean corn, potatoes, and other crops.

Grow and Give

High Desert Food & Farm Alliance’s Grow and Give campaign is a collaborative effort with NeighborImpact’s Food Bank to collect fresh food donations at five local farmers’ markets and glean excess food from farms. Since 2015, Grow and Give gleaned over 34,000 pounds of fresh, local food for families in need, including lettuce, squash, tomatoes, potatoes, and many others. Even home gardeners can contribute. “I have donated freshly harvested carrots, zucchinis and tomatoes from my garden,” said Bend resident Jules Greene. “Sharing your garden’s bounty is one of the easiest and helpful donations you can do for our community”. The goal for the 2018 season is 18,000 pounds.

Schools and Institutions

In partnership with High Desert Food & Farm Alliance (HDFFA), Central Oregon Community College and Cascade Culinary Institute will be conducting a peer-to-peer waste audit for both personal student and faculty food waste as well as kitchen and dining food waste. The goal will be to first identify how much food is being wasted, and then develop programs to reduce and mitigate that loss. Accomplishing these goals will require fluid communication and cooperation across many partners.

Food Waste, Animal Feed, and Composting

Composting, or the natural process of recycling organic materials such as yard debris and food scraps into a rich soil amendment, is a simple solution for recovering
organic materials that would otherwise end up in a landfill. Since soils here in Central Oregon are sandy, coarse, high in pumice and low in humus, compost can be a tremendously beneficial method for adding nutrients and increasing the soil’s capacity to hold water. Healthy soil results in a healthier growing environment for our food.

**Municipal Waste Management**

For individuals and families without access to backyard composting, there are various outlets to still compost their household food scraps via municipal waste collection organizations. Bend Garbage & Recycling offers a food waste collection service for commercial and residential customers within the city of Bend. Commercial customers have the opportunity to recycle their food waste and keep this material out of the landfill. The material goes to Deschutes Recycling where it will be processed into nutrient-rich compost. Deschutes County Recycling has a municipal composting facility collecting food scraps as well as yard trimmings to produce four different types of compost which is available to the public to purchase.

![Completing the Cycle](image)

**Conclusion**
This assessment focused on what is taking place within in the Central Oregon regional food system, made up by The Confederated Tribes of Warm Springs and Deschutes, Jefferson, and Crook counties. This process began in September 2017 and concluded in August 2018. Over 11 months, many formal and informal conversations, interviews, meetings, listening groups, brainstorming sessions, and independent observations were held that informed the content of this assessment. Furthermore, the opportunities and recommendations were drawn from these same sources of input, as well as recent reports, past assessments, perspectives of professionals in specific fields.

Food systems are complex, geographically and idealistically fragmented, diverse, and multi-faceted to say the very least. Our food system is much more than the sum of its parts, and there is unlikely a one-size-fits-all solution to any issue. It is unlikely that food served at the majority of restaurants or fast-food chains was grown, raised, or processed in Central Oregon. Most food being consumed anywhere in the U.S. has travelled far – across the state, country, or even globe – to where it is ultimately consumed. This does not mean that for these consumers a food system does not exist. For even if an individual has never eaten food that was grown within 1,000 miles of where they live, that food is still a part of their reality and therefore included in their community food system. Conversely, some food that is shipped out of and is never consumed in Central Oregon will still bring income to that business, keeping at least a portion of that money in our regional economy and therefore, in our food system.

Attempts were made at all points in this process to remain neutral and simply assess. This Central Oregon Community Food Assessment is a union of many new and long-standing ideas, brought together as a jumping off point in a never-ending process of reflection, management and improvement.
Opportunities and Recommendations
For Central Oregon’s Food System

Agriculture and Ranching
• Host more workshops on season extension solutions for the region including hoop houses.
• Provide concise information on preventing the spread of local weeds and damaging insects to the wider community.
• Facilitate more conversations between farmers and potential buyers

Potential Partners: Agricultural Connections, HDFFA, OSU Extension

Land Access
• Build connections between experienced and aspiring farmers in order to help make land more accessible, give young farmers needed experience, and ensure that retiring farmers have a full range of options for passing on a legacy of land that will remain under cultivation.

Potential Partners: Friends of Family Farmers, Oregon Agricultural Heritage Program, Rogue Farm Corps

Irrigation & Water
• Take note of suggestions made in the upcoming “Upper Deschutes Basin Study: Water for Agriculture, Rivers and Cities.”
• Invest in technological updates for the flow of water to ranches and farms including updates to canals through pressurized piping and moving away from flood irrigation towards drip irrigation systems.
• Allow for inter-district transfers of water rights to distinguish between food producers and hobby farms not seeking growth or markets.

Potential Partners: Central Oregon Irrigation District, Deschutes Soil and Water Conservation, Wy’East
**Seeds**

- Support Central Oregon’s diverse and unique growing climate by purchasing seeds from local purveyors of local seeds.
- Dedicate a portion of home gardens or farms toward growing crops out to seed to ensure seed genetics continue.
- Expand the Pollinator Increase Project to all thee counties to ensure support for pollinator species that generate healthy food ecosystems for Central Oregon.

*Potential Partners: Central Oregon Agricultural Research Center, Central Oregon Seed Exchange, Central Oregon Seeds Inc.*

**Labor**

- Conduct survey to determine if farmer’s labor needs are being met
- Create opportunities to bridge the information and knowledge gap between experienced, large scale farms, and smaller agricultural operations
- Support the long-term sustainability of farmer training programs like Rogue Farm Corps by formalizing on-farm internships programs, and secure community funding sources as to not rely on federal grants for internship coordination.

*Potential Partners: Central Oregon Community College, OSU Cascades, Rogue Farm Corps*

**Community & Home Gardens**

- Encourage partnerships with home gardener groups to donate extra food to hunger-relief agencies such as local food pantries and the NeighborImpact regional food bank.

*Potential Partners: HDFFA, Crook County on the Move, NeighborImpact, OSU Extension, OSU Master Gardeners*

**Hunting, Fishing, & Foraging**

- Research opportunities for participation in Farm and Hunters Feeding the Hungry, or similar program developed by NeighborImpact for donation of game to food banks.

*Potential Partners: 1017 Cattle Project, Central Oregon Mushroom Club, Oregon Department of Fish and Wildlife, Powell Butte Cowboy Church*

**Local Economy**
• Support for and development of Central Oregon Food Hub. By establishing a food hub and purchasing a minimum of $610,000 of local food products, it’s estimated that nine new jobs, $329,000 in wages and $642,000 sales would be generated.

• Encourage residents to buy directly from farmers. If Central Oregonians shifted five percent of their food purchases from buying at commercial grocery stores to buying from local farmers, consumers would contribute 13 full and part-time jobs and generate $263,000 more in wages with 52 percent of those wages going directly to farmers.

• Intensifying on-farm production levels. If farmers were to more intensely farm existing acreage to $3.1 million, 63 farm and non-farm jobs would be created with an additional $1.68 million in wages and a total of $5.4 million in sales.

Potential Partners: Central Oregon Intergovernmental Council, HDFFA, OSU Extension, OSU Center for Small Farms and Community Food Systems, Oregon Economic Development Association for Central Oregon

Processing

• Improve harvest date forecasting and committed scheduling of processing date in meat processing facilities to ensure maximum productivity.

• Expand current meat processing facilities for small- and medium-sized farmers and ranchers to increase their production including exploring adding a USDA-certified meat processing facility in Deschutes County, which could decrease the producers’ current travel times and fees.

• Establish a training or apprenticeship program to increase the number of workers in the meat processing sector.

Potential Partners: Central Oregon Butcher Boys, Central Oregon Intergovernmental Council, Madras Beef, Oregon Beef Company, OSU Extension

Transportation & Distribution

• Extend service hours and add Sunday service to public transportation routes, based on the transportation survey conducted for this assessment.

• Work with Cascade East Transit to ensure existing and new transit routes provide direct connections between low-income communities and food retail locations.

• Develop relationships and connections that link farms and distributors with larger organizations looking to implement institutional purchasing of local foods.
Potential Partners: Central Oregon Intergovernmental Council’s Cascade East Transit, HDFFA, NeighborImpact

Energy & Environmental Footprint

- Encourage residents to reduce or combine the number of shopping trips they make by car.
- Educate, incentivize, and encourage alternative and public transportation options for food access.
- Conduct a Life Cycle Assessment of Central Oregon’s local food system to determine the carbon footprint associated with local food traveling from producer to consumer, average food-based consumer shopping trips, and recommendations for improvements.

Potential Partners: Bonneville Power Administration, Central Electric Cooperative, Central Oregon Irrigation Districts, The Environmental Center, Pacific Power, Wy’East RC&D

Consumer Access

- Research the opportunity for expanding home deliveries of Central Oregon products
- Research the potential for grocery development in rural Central Oregon communities (Warm Springs, Crook County)

Potential Partners: Council on Aging, HDFFA, NeighborImpact, Oregon SNAP, Oregon WIC, State FDNP

Education

- Target education to shoppers around Central Oregon’s climate and availability of seasonal foods in grocery stores.
- Expand FoodCorps programs to all Central Oregon communities to provide garden-based and food literacy education to children.
- Secure funding for a paid garden coordinator at every school in Central Oregon to manage on-site school gardens for food production and garden-based education.

Potential Partners: The Environmental Center, Food Corps, Seed to Table
**Institutions**

- Continue to incorporate of local food into Central Oregon school district purchasing.
- Continue to develop of Central Oregon Food Hub with aggregation, storage and market intelligence could help address product volume, and consistency.

*Potential Partners: Central Oregon Community College, Central Oregon Intergovernmental Council, Central Oregon School Districts, HDFFA, OSU-Cascades*

**Food Assistance & Food Banking**

- Expand existing programs such as Grow and Give to donate excess homegrown produce, increase donations at farmer's markets, and recruit more volunteers for on-farm gleaning events.

*Potential Partners: HDFFA, NeighborImpact*

**Health & Wellness**

- Expand Mosaic Medial food insecurity screening pilot, from new incoming patients to all existing patients. Implement screening programs with all interested healthcare providers and clinics throughout Central Oregon.

*Potential Partners: Central Oregon Health Council, HDFFA, Mosaic Medical, St.Charles Health System*

**Waste & Food Recovery**

- Develop more streamlined call tree for farmers with food for gleaning for HDFFA Grow & Give campaign.
- Create a waste prevention toolkit and guidelines for homes, restaurants, and stores of Central Oregon to reduce overall food waste.
- Expand the availability of composting services outside of Bend, Redmond, and Sisters for to allow for more composting options in and out of the home.

*Potential Partners: County Landfills, The Environmental Center, OSU Extension, Central Oregon Intergovernmental Council, Bend-LaPine School District, St. Charles Medical, HDFFA*
Agriculture & Ranching

- Oregon Rural Communities Explorer: http://oe.oregonexplorer.info/rural/CommunitiesReporter/

Community & Home Gardens


Consumer Access

- Farm to Friends Country Market: https://www.farm2friends.com/
- Agricultural Connections: https://agriculturalconnections.com/
- Central Oregon Locavore: https://centraloregonlocavore.org/
- HDFFA Workplace CSA: https://hdffa.org/portfolio-posts/workplace-csa/
- 2018 High Desert Food and Farm Directory: https://issuu.com/highdesertfoodfarmalliance/docs/2018_hdffa_food___farm_directory Hunting, Fishing, & Foraging
- Oregon Department of Fish and Wildlife: https://myodfw.com/
- Central Oregon Mushroom Club: www.mushroomsinbend.org
Education

- Central Oregon school gardens with contact information, usage in cafeteria, certain products grown: Oregon School Garden Data
- Seed to Table: https://www.seedtotableoregon.org/
- State of Oregon, Oregon Harvest for Schools campaign to promote Oregon foods in school settings and to families, with promotional materials, instructions for beginning a program, communications/newsletters, specific information for individual crops with visuals, nutritional content of each vegetable, recipes, growing tips, outlets for purchasing in cafeteria: http://www.oregon.gov/ode/students-and-family/childnutrition/F2S/Pages/OregonHarvestforSchools.aspx
- The Environmental Center School programs: https://envirocenter.org/programs/school-programs/
- Food Corps: https://foodcorps.org/
- High Desert Food & Farm Alliance: www.hdffa.org
- Central Oregon Community College: www.cocc.edu
- OSU Central Oregon Extension Services:
  - Deschutes: http://extension.oregonstate.edu/deschutes/
  - Crook: http://extension.oregonstate.edu/crook/
  - Jefferson: http://extension.oregonstate.edu/jefferson/
- OSU Master Gardener Program: http://extension.oregonstate.edu/deschutes/horticulture/mg

Energy & Environmental Footprint

- Photo and related article: http://www.bendbulletin.com/localstate/1830112-151/a-look-into-the-oregon-power-portfolio
- Food Transportation and Energy: http://www.oregon.gov/deq/FilterDocs/PEF-FoodTransportation-ExecutiveSummary.pdf
  


- Distribution of energy used by the food system in the U.S. State of Oregon Department of Environmental Quality. Oregon Sustainability Board. Center for Sustainable Systems, University of Michigan. Martin Heller 2017

- U.S Energy Information Administration: https://www.eia.gov/state/?sid=OR
• Oregon Energy levels: [http://www.oregon.gov/deq/mm/food/Pages/Product-Category-Level-Footprints.aspx](http://www.oregon.gov/deq/mm/food/Pages/Product-Category-Level-Footprints.aspx)

**FEAST**

• Oregon Food Bank FEAST: [https://www.oregonfoodbank.org/our-work/partnerships/community-food-systems/feast/](https://www.oregonfoodbank.org/our-work/partnerships/community-food-systems/feast/)

**Food Assistance + Food Banking**

• OSU Cascades Food Pantry: [http://osucascades.edu/ASCC/student-support-programs/food-pantry](http://osucascades.edu/ASCC/student-support-programs/food-pantry)
• Farmers and Hunters Feeding the Hungry: [https://www.fhfh.org/](https://www.fhfh.org/)
• Free and Reduced Lunch Statistics: [https://www.ode.state.or.us/sfda/reports/r0061Select2.asp](https://www.ode.state.or.us/sfda/reports/r0061Select2.asp)
• Bend Food Project: [https://bendfoodproject.com/ Land Access](https://bendfoodproject.com/)
• The Future of Oregon’s Agricultural Land, Rogue Farm Corps + OSU Center for Small Farms & Community Food Systems September 2016
  • "As older farmers retire over the next two decades, over 10 million acres, or 64 percent of Oregon’s agricultural land, will pass to new owners. How that land changes hands, who acquires it, and what they do with the land will impact Oregon for generations."
  • [http://centerforsmallfarms.oregonstate.edu/sites/centerforsmallfarms.oregonstate.edu/files/futurefarmland_brief_final.pdf](http://centerforsmallfarms.oregonstate.edu/sites/centerforsmallfarms.oregonstate.edu/files/futurefarmland_brief_final.pdf)
• Real market Value of Property: Accessed from the Communities Reporter Tool on 7/7/2018; Oregon Department of Revenue; California Board of Equalization, Annual Reports

Food Insecurity & Hunger

• Feeding America: http://map.feedingamerica.org/
  ◦ Map the Meal Gap food insecurity rates by county: http://www.feedingamerica.org/research/map-the-meal-gap/2016/overall/OR_AllCounties_CDs_MMG_2016.pdf
• American Fact Finder for poverty and demographic data: https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml
• Oregon Food Bank
  ◦ Hunger: https://www.oregonfoodbank.org/our-work/hunger-in-oregon/
• “How do Prineville Groceries really stack up?": https://pamplinmedia.com/ceo/164-features/389317-279957-how-do-prineville-grocery-prices-really-stack-up
• USDA Food Insecurity data (used by Feeding America for their reporting): https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us/

Health & Wellness

• Food insecurity rates statewide: https://www.oregonfoodbank.org/our-work/hunger-in-oregon/
• Oregon-based Veggie Rx programs: http://ocfsn.net/veggie-rx/

Irrigation & Water

• “Piping canals is a critical strategy in modern irrigation practices,” said Craig Horrell, Central Oregon Irrigation District manager. “During the irrigation season, we lose approximately 50 percent of water to evaporation and seepage from canals and laterals. Piped canals mitigate these losses and conserve a significant portion of this
water. These conservation efforts benefit fish and wildlife in the Deschutes River ecosystem, support sustainable agriculture and help Bend to manage its water resources for the future.” Source: Cascade Business News November 21, 2017

- Deschutes’ Basin Board of Control (Jess connect to Shaun Roe); 8 districts total that provide water for households as well irrigation for farming; website has stats and numbers http://dbbcirrigation.com/about/
- Irrigation map source: http://coid.org/maps/
- Spotted Frog under Endangered Species Act: https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=D02A

Institutions
- Bend-LaPine School District Data: https://www.bend.k12.or.us/district/home/about-us
- Checklists, tips on finding local food, webinars for purchasing: http://www.oregon.gov/ode/students-and-family/childnutrition/F2S/Pages/FarmtoSchoolPurchasing.aspx
- State of Oregon provides links for schools to food hub websites where they can purchase and incorporate Oregon grown products into their cafeteria and menus: http://www.oregon.gov/ode/students-and-family/childnutrition/F2S/Pages/OregonHarvestforSchools.aspx
- USDA Farm to School Census data: https://farmtoschoolcensus.fns.usda.gov/
- COIC Facts: https://www.cocc.edu/about/cocc-quick-facts.aspx
- Deer Ridge Correctional Institution: https://www.oregon.gov/doc/OPS/PRISON/Pages/drci.aspx

Labor
- Daniel Quinones w/ WorkSource Oregon & Frances Alvarado w/ Oregon Human Development Organization: http://www.worksourceoregon.org/
- CASA; housing development for farmworkers: http://www.casaoforegon.org/programs/housing-program-overview
- ‘Trump Doesn’t Really Want to Stop Immigration’ Erik Hazard | 02.01.2017; https://foodfirst.org/trump-doesnt-really-want-to-stop-immigration/
- Friends of Family Farmers; https://www.friendsoffamilyfarmers.org/

Local Economy

- Deschutes River Corridor Study: [A Value of Natural Resources- Deschutes River Corridor and its Water](http://jeffcoseed.com/); April 19, 2011


- Central Oregon Seed Inc.: [https://cosi.ag/](https://cosi.ag/)

**Our Community Food System (Demographics)**

- U.S Census Bureau
  - Urban and rural classification 2010: [https://www.census.gov/geo/reference/ua/urban-rural-2010.html](https://www.census.gov/geo/reference/ua/urban-rural-2010.html)

- U.S Data: [https://datausa.io/](https://datausa.io/)

- Portland State University Population Research Center; [https://www.pdx.edu/prc/population-reports-estimates](https://www.pdx.edu/prc/population-reports-estimates)


**Processing**


- Dairy Processing: [http://oregonstate.edu/foodsci/dairy/welcome.htm](http://oregonstate.edu/foodsci/dairy/welcome.htm)

- Food Safety Licenses Index: [http://oda.state.or.us/dbs/licenses/search.lasso?&division=fsd](http://oda.state.or.us/dbs/licenses/search.lasso?&division=fsd)


- Oregon meat and poultry slaughter and processing facilities listing: [http://articles.extension.org/pages/26087/oregon-facilities](http://articles.extension.org/pages/26087/oregon-facilities)

- Cattle and calves inventory production: [https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1_Chapter_2_County_Level/Oregon/st41_2_011_011.pdf](https://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1_Chapter_2_County_Level/Oregon/st41_2_011_011.pdf)

- Prep Commercial Kitchen: [https://www.prepbend.com/](https://www.prepbend.com/)

**Rules, Regulations, and Food Safety**


- Excerpts from [Agricultural Reclamation Act: A Roadmap To Sound Agricultural Policies Written By Oregon’s Family Farmers And Ranchers](https://www.denverpost.com/2018/04/10/additional-organic-certification-food-label/)
• Hunting and Fishing Regulations: http://www.eregulations.com/oregon/big-game-hunting/
• Learn the Language of Labels: https://nutritionbyjules.com/2017/05/23/learn-the-language-of-labels/

**Seeds**
• Central Oregon Seed Exchange, Seed to School, Deschutes Pollinator Increase Project: http://seedexchange.weebly.com/
• Jefferson County Seed Growers Association: http://jeffcoseed.com/
• Central Oregon Seeds Inc.: https://cosi.ag/

**Transportation + Distribution**
• Food Transportation and Energy: http://www.oregon.gov/deq/FilterDocs/PEF-FoodTransportation-ExecutiveSummary.pdf
• Transportation and food; the importance of access: http://eatbettermovemore.org/sa/pdf/transportation_and_food.pdf
• Transportation and food access: https://www.cdc.gov/healthyplaces/healthtopics/healthyfood/transportation.htm
• How transportation infrastructure spending impacts the food system: http://www.gracelinks.org/blog/8299/how-transportation-infrastructure-spending-impacts-the-food
• Oregon by county data indicators: http://ocfsn.net/state-of-the-food-system/

**Waste & Food Recovery**
• Soil in Central Oregon: http://www.juniperandsage.com/garden/chap2.htm
• Bend Garbage: https://bendgarbage.com/food-waste-collection/
• Deschutes Recycling: http://www.deschutesrecycling.com/organics.html
• Rethink Waste Project: http://www.rethinkwasteproject.org/
  ◦ http://www.rethinkwasteproject.org/reduce/reduce-wasted-food/
• HDFFA Grow & Give Campaign: https://hdffa.org/portfolio-posts/grow-and-give-2/
Resources

Central Oregon Harvest Chart
Your guide to seasonal bounty

<table>
<thead>
<tr>
<th>SPRING</th>
<th>SUMMER</th>
<th>FALL</th>
<th>WINTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAR</td>
<td>APR</td>
<td>MAY</td>
<td></td>
</tr>
<tr>
<td>beans</td>
<td>beets</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bok choi</td>
<td>broccoli</td>
<td></td>
<td></td>
</tr>
<tr>
<td>brussels sprouts</td>
<td>cabbage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>carrots</td>
<td>cauliflower</td>
<td></td>
<td></td>
</tr>
<tr>
<td>chard</td>
<td>corn</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cucumber</td>
<td>eggplant</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fennel</td>
<td>green onions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>greens (mustard &amp; arugula)</td>
<td>garlic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>kale</td>
<td>kohlrabi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>leeks</td>
<td>lettuce (head)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>onions</td>
<td>parsnips</td>
<td></td>
<td></td>
</tr>
<tr>
<td>peas</td>
<td>peppers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>potatoes</td>
<td>radishes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>rhubarb</td>
<td>salad mix</td>
<td></td>
<td></td>
</tr>
<tr>
<td>shallot</td>
<td>spinach</td>
<td></td>
<td></td>
</tr>
<tr>
<td>summer squash &amp; zucchini</td>
<td>winter squash</td>
<td></td>
<td></td>
</tr>
<tr>
<td>sunchoke</td>
<td>tomatoes (slicers)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tomatoes (cherry)</td>
<td>turnips (sweet)</td>
<td></td>
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</tbody>
</table>
**LABELS**

**Local**
HDFFA defines local as the high desert (Central Oregon tri-county) region. Ask around and you’ll probably find that everyone has a different definition.

**Free Roaming/Pasture Fed/ Meadow Raised**
These labels refer to the environments in which animals are raised and must either be connected to a certified symbol or have a definition on the product to verify the claim.

**Grass-Fed/Grain-Finished/ Vegetarian Fed**
Labels referring to an animal’s diet clarifies what they have been fed throughout their lives, and requires that they have only eaten the diet claimed on the label.

**Natural**
This term has USDA guidelines, but no regulation, and suggests that a product does not contain artificial ingredients or colors and is only minimally processed. Individual companies can, and do, make up their own definitions for their products.

**Cage-Free Chicken**
This is not a regulated label since conventionally grown meat birds are typically not grown in cages, but rather large open structures.

**USDA REGULATED LABELS**

**Cage-Free Eggs**
Hens must be housed in a way gives them unlimited access to food and water, and freedom to roam during the laying cycle. This doesn’t mean they aren’t in cages at some point during their lives, or that they have access to the outdoors. Look for egg cartons with the US Grademark seal to verify USDA certification.

**Free-Range Poultry**
This label is for poultry only and means that the birds must have access the outdoors. However, this may only be a “pop-hole” with no full-body access. There is no definition (including laying hens). If you see the claim on beef, it is valid if sufficient documentation shows no hormones have been used to raise the animal. Look for the USDA Process Verified Seal.

**Raised without Antibiotics**
Producers must provide sufficient documentation showing that no antibiotics were used in the feed, water or injections when raising the animal. Look for the USDA Process Verified Seal.

**USDA Organic**
Farms must meet approved methods to protect natural resources and conserve biodiversity, and are only allowed to use approved substances.

**CERTIFICATIONS**

**GMO-Free**
This label is verified by the Non-GMO Project, a nonprofit, and is not government regulated. This label verifies that a product does not contain GMOs (genetically modified organisms).

**Organic & Humane**
If you see these logos on your products, you know that your food has been certified and meets or exceeds USDA standards: the Oregon Tilth® logo tells you the product is organic, and the American Humane® or Processed and Certified Humane® logos ensure that animals are treated humanely in the way they are raised, fed and processed.

**Animal Welfare**
A Greener World is based in Terrebonne and is a HDFFA Sponsor. They certify that animals are raised following the highest standards. Only family farms are approved. Standards are unique.
LEARN THE LANGUAGE OF LABELS

On average, supermarkets are filled with 42,000 different products – and what can feel like almost that many labels. Each of us has our own priorities for what we feel is important. It can be confusing to figure out what’s true and verified, or what’s unregulated or a gimmick. Understanding the basics of labels can help you decide what works best for you and fits your values.

While some labels are legally defined, others are not. To help you navigate, the High Desert Food & Farm Alliance put together tips and information about some of the more common labels so you know what you’re buying.

- A label is a claim – or a value statement – made on a product which may or may not be certified or verified by the government or another agency.
- A regulation is a rule or definition that is maintained by an authority.
- Certification means the product is verified to meet regulations set by the US Department of Agriculture (USDA) or the Food & Drug Administration (FDA), or go beyond government standards.

FOOD FOR THOUGHT

Differentiating between the label and the actual farming practice or animal’s welfare is important. For example, chicken that is labeled “organic” does not necessarily mean that the hens were raised in a humane manner.

TIPS FOR SHOPPING SMART

- Look for a recognized symbol
- Look for a definition of the word
- Ask your farmer
Appendix: Surveys

Rural Grocer Survey

Name of Store: _______________________________________________________________

Address: ____________________________________________________________________

Phone Number: ______________________________________________________________

Contact Person for Store: _______________________________________________________

1. What major products and services does your store offer? *Check all that apply.*

| _____ ATM/ Bank | _____ hunting/fishing/camping supplies |
| _____ books/cards/gifts | _____ institutional supply (school, hospital) |
| _____ café/restaurant | _____ pharmacy |
| _____ catering | _____ photo development |
| _____ delicatessen | _____ pre-packaged snacks |
| _____ fuel | _____ self-serve snacks/drinks |
| _____ groceries | _____ video rental |
| _____ other (specify) | |

2. Who is/are your primary grocery supplier(s)?

____________________________________________________________________________________

3. Who is/are your primary vegetable supplier(s)?

____________________________________________________________________________________

*Have you ever considered purchasing directly from a local farmer(s) or would you be interested in purchasing local produce if prices were competitive and quality and consistency could be assured?

4. What products do your secondary suppliers supply?
5. Do minimum (purchasing/ordering) buying requirements create a problem for your grocery store?
   _____ yes    _____ no

   If yes, how?

6. If minimum buying requirements are a problem, what solutions might you suggest?

7. As an independent grocer, do you feel you are getting fair pricing from your suppliers compared to chain stores?
   _____ yes    _____ no

   Comments:

8. Have you had problems getting products delivered because of your location?
   _____ yes    _____ no

   Comments:

9. Do you sell locally produced food in your store?
   _____ yes    _____ no

   If yes, what products?

10. Which of the following are major challenges for your store? Check all that apply.

| ____ availability of satisfactory labor | ____ lack of community support |
| ____ competition with large chain grocery stores | ____ low sales volume |
| ____ debt and/or high payments | ____ narrow profit margins |
| ____ government regulations | ____ required minimum buying requirements from vendors |
| ____ high inventory costs/ low turnover | ____ shoplifting/bad checks/ internal theft/unpaid accounts |
| ____ shortage of working capital | ____ taxes |
| ____ high operating costs (utilities, building lease, repairs/maintenance, etc) | ____ other (specify) |
11. Do you collaborate with other small independently owned stores?
   ____ yes  ____ no

   If yes, for which purposes? Check all that apply.
   ____ cooperative advertising/marketing
   ____ grocery distribution purposes
   ____ sharing concerns and/or ideas
   ____ to achieve minimum buying requirements
   ____ other __________________________________________________________________________

   If no, would you be interested in doing this?
   ____ yes  ____ no

   Why or why not?

12. Do you feel that a statewide alliance of small, independently owned grocery store owners may have value?
   ____ yes  ____ no

   If yes, how could it help?

13. Do you accept Food Stamps/SNAP?*  ____yes  ____no

   Do you accept WIC?**  ____yes  ____no

   * Supplemental Nutrition Assistance Program
   ** Women, Infant, and Children

   Do you know what percentage of your sales are SNAP?  WIC?

14. Do you or have you ever participated in gleaning activities (retail donations, food recovery programs), or donations to local food banks or pantries?

15. What percentage of your customers likely use your store as their primary grocery store?

   When running a grocery store, how important is it to you to offer each of the following? Rate the importance of each by circling the number that best fits your response.

<table>
<thead>
<tr>
<th></th>
<th>Not Very Important</th>
<th>Very Important</th>
</tr>
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<tbody>
<tr>
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<td></td>
<td></td>
</tr>
</tbody>
</table>
How does your store do at providing the following to customers? Rate your store by circling the number that best fits your response.

1. Quality of food .................................
   Comments:
   1  2  3  4  5

2. Availability of food (variety, brand choices)
   Comments:
   1  2  3  4  5

3. Prices of items offered .........................
   Comments:
   1  2  3  4  5

4. Customer service ..............................
   Comments:
   1  2  3  4  5

5. Business hours ...............................
   Comments:
   1  2  3  4  5

6. Buying locally ..............................
   Comments:
   1  2  3  4  5

Which of the above do you feel is the most significant for you and your store?

How do you assess the buying needs of your customer?

Is your stocking of products responsive to customer requests?

What other concerns or comments do you have?
Tell us about your store:

How long have you been in the grocery business as an owner?  __________

How long has there been a grocery store at your current location?  __________

Do you have more than one location?  _____  How many?  _____

What are your hours of operation?

Mon  _____  to  _____
Tues  _____  to  _____
Wed  _____  to  _____
Thur  _____  to  _____
Fri  _____  to  _____
Sat  _____  to  _____
Sun  _____  to  _____

Are you open on the major holidays (Christmas, New Years, Thanksgiving, etc.)?  _____

Are there other grocery outlets in your community?

_____ a 'quick shop'
_____ another full service grocery

How far is it to the nearest discount grocery (Wal-Mart, etc?)  _____

How many employees do you have, not counting yourself?

_____full-time (40 hrs/week minimum)  _____ part-time (less than 40hrs/week)

What are your average weekly gross sales?

_____Less than $5,000
_____Between $5,000 and $10,000
_____Between $10,000 and $20,000
_____Greater than $20,000
Central Oregon Food Access Transportation Survey

I. How often do you use transit to acquire food?
   a. Daily
   b. Weekly
   c. Monthly
   d. Rarely or Never-----why?

a. Which of the following food outlets do you access using transit:
   b. Grocery Store or Corner Market
   c. Deli
   d. Fast Food
   e. Restaurant
   f. Farmer’s Market
   g. Farm Stand
   h. Food Bank or Food Pantry

a. What forms of transportation do you use to access food?
   b. Driving alone
   c. Bicycle
   d. Walking
   e. Carpool
   f. City Bus
   g. Dial-A-Ride Bud
   h. Other _____________________________ e.g. Mobility device, skateboard, etc.

a. What modifications or enhancements could be made to Cascade East Transit to increase your ability to access food? Select 3 or all that apply.
   b. Increased hours of operation (e.g. later in the evening)
   c. Sunday service
   d. More frequent service (e.g. every 15 minutes as opposed to every hour)
   e. Routes and stops that are closer to food shopping?
   f. Better bus shelter
   g. Other ________________________________
a. How do you typically get to and from the bus stop or station?
   b. Walking
   c. Bicycle
   d. Carpool
   e. Mobility Device

a. What are any concerns you might have around shopping for food and taking the bus?
   b. Carrying and transporting items
   c. Transit does not go close to where I shop
   d. Transit is too expensive, high cost of transit pass
   e. N/A, I already use transit

Demographics
   ○ City
   ○ Car owner
   ○ # of people in household
   ○ Ethnicity
   ○ Gender
     ○ Male
     ○ Female
     ○ Gender non-conforming
Oregon Food Bank Client Food Preference Survey

We need your help! Please take a few minutes to fill out this survey.

Everything in the survey is confidential.

- You do not have to fill out the survey to get food today.
- Pantry staff will not look at your answers.
- Do not write your name.

When you finish the survey, fold it in half and place it in the large envelope or survey drop box with the Oregon Food Bank logo.

Background information:

This month, food pantries like this one all over Oregon and Clark County, Washington are asking people to take this survey from the Oregon Food Bank. Oregon Food Bank is a nonprofit agency that supplies food to a network of regional food banks that, in turn, supply some of the food to this pantry. The purpose of the survey is to help us to understand your food preferences. We do not have control over all the food that we supply, but we will use this information to see whether or not we should consider making changes to some of the foods we supply to food pantries.

Thank you!

Begin Survey

1. Including today, how many times have you or other members of your household gotten food from any food pantry in the last 12 months?
   - 1 time □ 2-3 times □ 4-6 times □ 7-9 times □ 10-13 times □ 14-20 times □ 21 or more times

2. Which of the following statements best describes your decision about coming to get food here today? (select one)
   - I usually wait to come until I run out of food
   - I plan to get food here on a regular basis to help with my monthly food budget
   - This is my first visit to a food pantry

3. In a month, how many visits to any food pantry would be best for you to meet your food needs?
   - Not every month □ One □ More than once a month

4. Choose one of the following statements that best describes your food needs when you come to the food pantry (select one):
   - The fresh and frozen items (produce, meat, dairy) are most important to meet my food needs
   - The shelf stable items (canned goods, pasta, rice, beans, etc.) are most important to meet my food needs
   - A mix of fresh and shelf stable foods are important to meet my food needs
5. Choose the 5 foods that would be most important for you to get from a food pantry (select five)

- Canned fruits and vegetables
- Fresh fruits and vegetables
- Frozen fruits and vegetables
- Dairy (milk, non-dairy milk, cheese, yogurt)
- Cereal (oats or other cereal)
- Pasta
- Rice
- Meat (beef, chicken, fish, pork)
- Beans
- Eggs
- Peanut butter or other nut butter
- Cooking staples (flour, oil, margarine)
- “Ready to eat” meals (canned stew, canned chili, soups, macaroni and cheese, etc.)
- Snacks (cookies, crackers, etc.)

6. Oregon Food Bank tries to supply foods that meet a variety of dietary needs and preferences. We are not able to supply every food that people might want, but we want to know: What is one food that is not available at your pantry that would be useful to your diet?

7. What type of tomato product would you prefer to get from the food pantry? (select one)

- Diced tomatoes
- Pasta sauce
- Tomato sauce
- No preference
- I don’t eat these foods

8. What type of rice would you prefer to get from the food pantry? (select one)

- Brown rice
- White rice
- No preference
- I don’t eat rice
9. What type of pasta would you prefer to get from the food pantry? (select one)
- White pasta
- Whole grain pasta
- No preference
- I don’t eat pasta

10. When I visit the food pantry I would prefer to get vegetables that are (select one)
- Fresh
- Frozen
- Canned
- No preference
- I don’t eat vegetables

11. When I visit the food pantry I would prefer to get fruit that is (select one)
- Fresh
- Frozen
- Canned
- No preference
- I don’t eat fruit

12. Do you get enough fresh produce from this pantry?
- Yes -&gt; skip to question 14
- No

13. If you said NO, what would be most helpful for you to get enough fresh produce from this pantry? (select one)
- Increased quantity of the fresh produce
- Increased variety of fresh produce options
- Other: _________________________________

14. When I visit the food pantry I would prefer to get beans that are (select one)
- Canned
- Dried
- No preference
- I don’t eat beans
15. What type of beans would you prefer to get from the food pantry? (select up to two)

- □ Black beans
- □ Garbanzo beans (also known as chickpeas)
- □ Kidney beans
- □ Lentils
- □ Pinto beans
- □ No preference
- □ I don’t eat beans

16. A “ready to eat meal” is something that just needs to be heated and served (such as canned stew, chicken chili, cream of mushroom soup, macaroni & cheese, or a frozen meal). How many times in a typical week do you eat “ready to eat” meals?

- □ 0
- □ 1-2
- □ 3-5
- □ 6-7
- □ 8 or more

17. What, if any, cooking staples would be most useful for you to get from the food pantry to help cook a meal? (select up to two)

- □ Baking Mix
- □ Flour
- □ Masa flour
- □ Margarine
- □ Oil
- □ Other: _____________________
- □ None

We know that sometimes people do not have a lot or any refrigerator or freezer space. For questions 18-22, please help us understand whether or not refrigerator or freezer space in your home affects the foods you choose from the food pantry.

18. Do you have enough refrigeration space to take home all of the refrigerated items available to you at the food pantry?

- □ Yes - > skip to question 20
- □ No
I don’t have a refrigerator -> skip to question 20

19. If you said NO, what types of refrigerated foods are most useful for you to get from the food pantry because you have limited refrigerator space? (select up to two)
  □ Condiments (salad dressing, mayonnaise, ketchup)
  □ Dairy (milk, non-dairy milk, cheese, yogurt)
  □ Eggs
  □ Fresh fruits and vegetables

20. Do you have enough freezer space to take home all of the frozen items available to you at the food pantry?
  □ Yes - > skip to question 22
  □ No
  □ I don’t have a freezer -> skip to question 22

21. If you said NO, what types of frozen foods are most useful for you to get from the food pantry because you have limited freezer space? (select up to two)
  □ Frozen beans or lentils
  □ Frozen meals
  □ Frozen pasta
  □ Frozen vegetables
  □ Frozen meat

22. Oregon Food Bank often has different kinds of frozen vegetables (each bag is about 2 pounds). Thinking about the space in your freezer and your food preferences, how many bags of frozen vegetables would be useful to you when you visit a food pantry?
  □ 0
  □ 1-2
  □ 3-4
  □ 5 or more

23. Which town are you currently living in? ____________________________

24. What is your age?
  □ 0-17 years □ 18-30 years □ 31-50 years □ 51-64 years □ 65 years or older □ Prefer not to answer

25. Including you, what is the total number of people currently living in your household? _________
26. Do you have children age 17 and under living with you?
   □ Yes - If yes, how many? _____
   □ No

27. What is your race or origin? (select all that apply)
   □ African
   □ Asian
   □ Black or African American
   □ Latino/Hispanic
   □ Middle Eastern
   □ Native American or Alaska Native
   □ Native Hawaiian or Pacific Islander
   □ Slavic
   □ White
   □ Prefer not to answer

28. What language do you speak at home?
   □ English
   □ Spanish
   □ Russian
   □ Czech
   □ Cantonese
   □ Mandarin
   □ Vietnamese
   □ Other: ____________________________

Your opinions and experiences are very important.
We encourage you to add comments below or on the back of this page.

Comments:
The 2018 Central Oregon Community Food Assessment (CFA) provides tools to gather and document information and community input regarding food, farm, ranch, and nutrition issues to inform future actions towards increasing food security in Central Oregon. Throughout this effort, the Resource Assistance for Rural Environments (RARE) Community Food Organizer coordinated formal and informal conversations, interviews, meetings, listening groups, brainstorming sessions, and observations throughout the region containing The Confederates Tribes of Warm Springs, Deschutes, Crook, and Jefferson counties which included consumers, farmers, low-income individuals, planners, food businesses and institutions, governmental, private and nonprofit organizations. Throughout a collaborative process, every effort was taken to incorporate every sector of the food system. This information is a union of many new and long-standing ideas, brought together as a jumping off point in a never-ending process of reflection, management and improvement, and a way to move from the talking phase to the action phase.

Your Voice Matters.

Everyone Has A Part In The Food System.