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Record Level Drought

Plus

FIGHTING PESTS

DEER VS HEMP CROPS


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50,000 New Ag Jobs Delivered by Drones

From the President

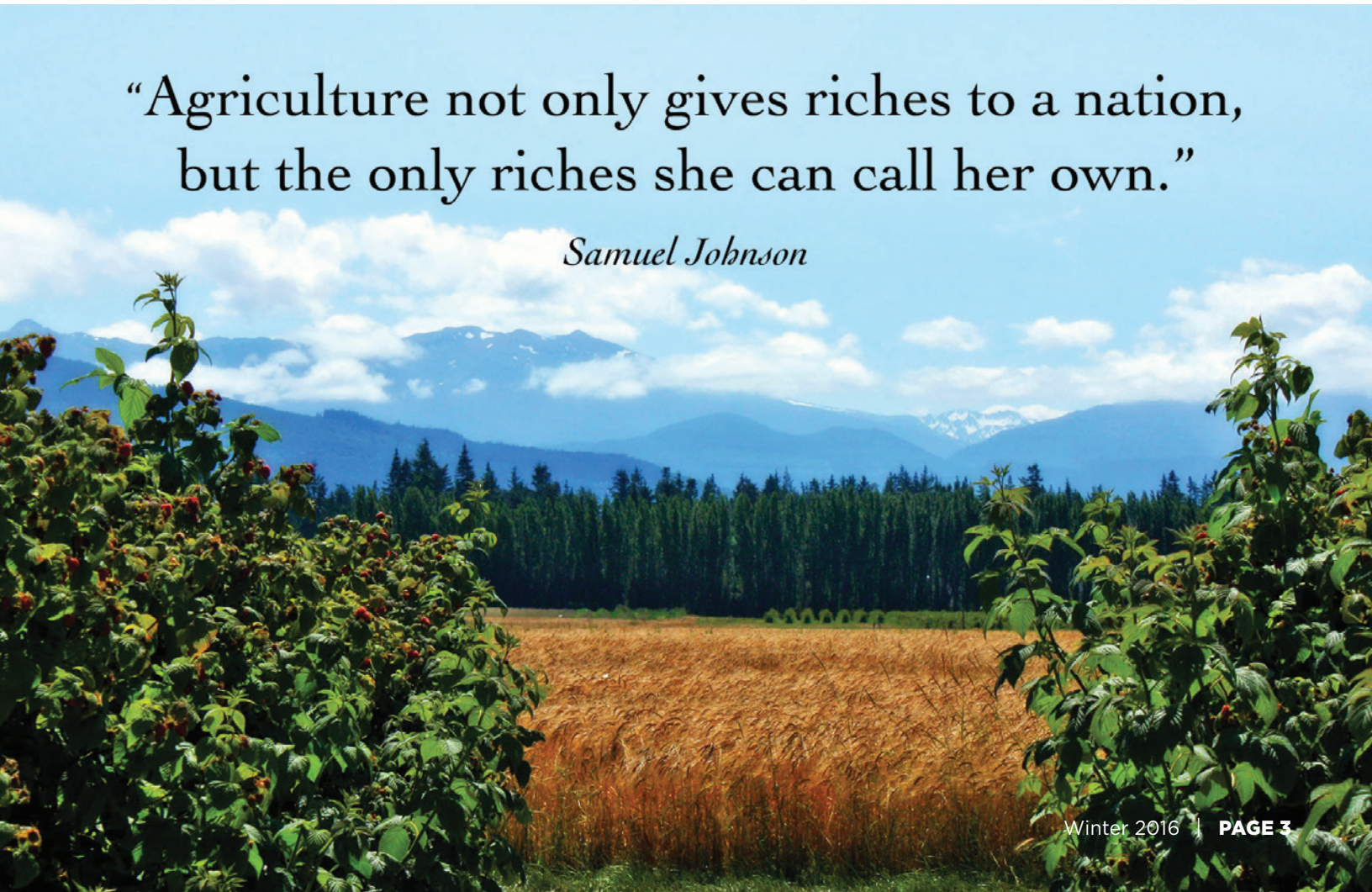
Matt Cyrus, President,
Oregon Family Farm Association

A study by the Association for Unmanned Vehicle Systems International predicts that the drone revolution will create nearly 50,000 new agriculture-related jobs in America. The revenue is projected to be in the tens of billions.

Oregon State University plans to be at the forefront of this positive change. OSU plans on using unmanned aerial vehicles to research their use in monitoring and treating crops. OSU will use the drones to assess the health of the school's potato crop and that of a commercial potato grower, both located near Hermiston, Oregon.

Drones are the latest innovation in "precision agriculture," which uses global positioning systems, sensors and iPads to more accurately monitor fields. Data generated by those technologies can be analyzed by farmers to determine watering needs, infestations or diseases.

Farmers will likely hire a company to provide the service due to the complexity of flying the drones. According to a report by the Association for Unmanned Vehicle Systems International, the industry is expected to produce 21,000 jobs a year. ■



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Helpful Guide for Farmer Pests

Winter Cutworm: A New Pest Threat in Oregon

BY NAOMI INMAN

A new publication on the Winter Cutworm from the Oregon State University Extension Service may seem a bit "creepy," but you'll be searching for it fast when you notice swaths of damaged lawns or pastures, or recently seeded agricultural crops crawling with the large larvae of the large yellow underwing moth, or Noctua Pronuba. The cutworms even gather by the hundreds on patios and entryways, and large populations of the pest have been seen in western Oregon and southwest Washington.

"The Winter Cutworm moves en masse in a 'feeding wave' during the winter months"

The Winter Cutworm moves en masse in a "feeding wave" during the winter months (September through March) and causes significant damage in a short amount of time, said Jessica Green, an entomologist with the OSU department of horticulture and co-author of *Winter Cutworm: A New Pest Threat in Oregon*.

Green et al. authored the 12-page resource after people reported large numbers of larvae around homes in 2015, and within golf courses and field crops in Oregon and Washington. OSU reports that adult moths, which don't bother plants, have been detected in Oregon since 2001, sometimes in high numbers, but widespread damage by larvae has not been reported until this year and no one knows just why. The potential risk to crops, such as vineyards, rye grass and grains grown during the winter months, is unknown.

The Extension publication, which includes full-color photographs and graphics, helps with identification and also contains information about biology, distribution and potential control measures. Also contributing to the publication were Amy Dreves, entomologist with OSU Extension; Brian McDonald, senior research assistant in the horticulture department; and Ed Peachey, weed specialist with Extension. ■

Oregon Family Farmers Making Less Income

And Owning Less Land

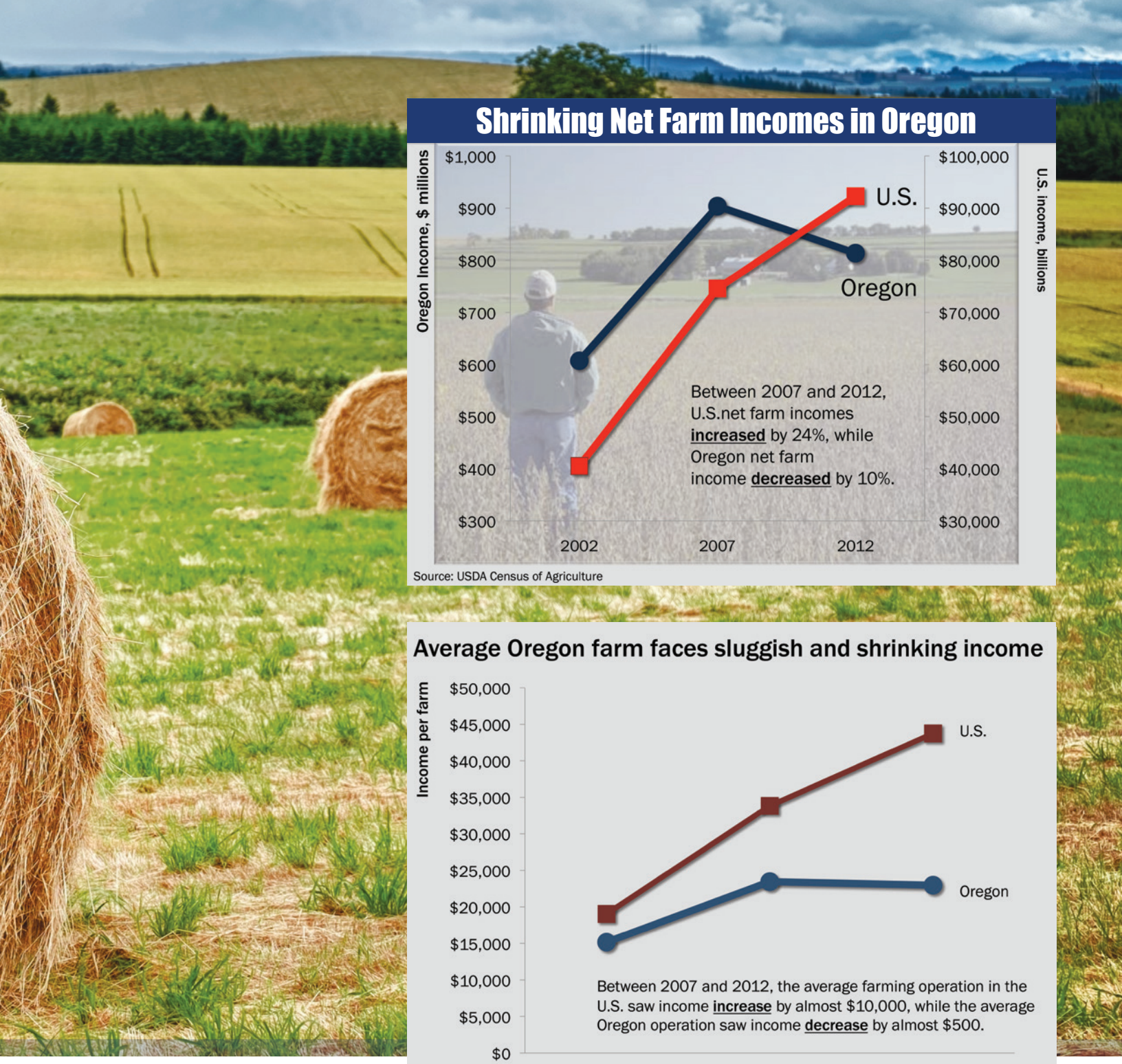
Farm income in other states is up 24%

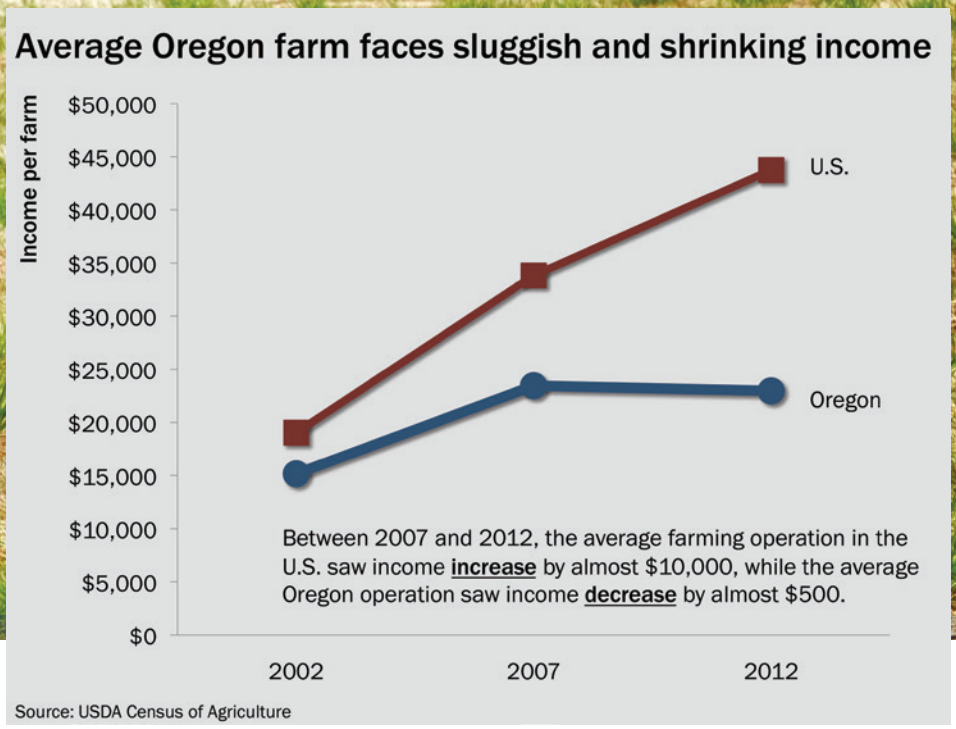
BY DR. ERIC FRUITS

The vast majority of Oregon farms remain family owned. At the same time, the state has seen a drop in the number of smaller farms. These are some of the findings of the 2012 Census of Agriculture, released by the U.S. Department of Agriculture's National Agricultural Statistics Service (NASS). The census is taken every five years. Comparing the 2012 census with 2007 census reveals several trends.

The census reveals that Oregon's net cash farm income was down by 10 percent between 2007

One major reason for the lower income is that Oregon has higher labor costs.





and 2012. In contrast, net cash income for the United States as a whole was up 24 percent. One major reason for the lower income is that Oregon has higher labor costs, driven by the state's high, and annually increasing, minimum wage.

Drought conditions in parts of the state contributed to higher animal feed prices.

Fundamental factors such as labor and feed costs account for the decline in farm incomes, and is reflected in stagnant incomes per farm. Between 2007 and 2012, the average farming operation in the United States saw income increase by almost $10,000, while the average Oregon operation saw income decrease by almost $500.

Continued on Page 8

Oregon Family Farmers Making Less Income and Owning Less Land

Continued from Page 7

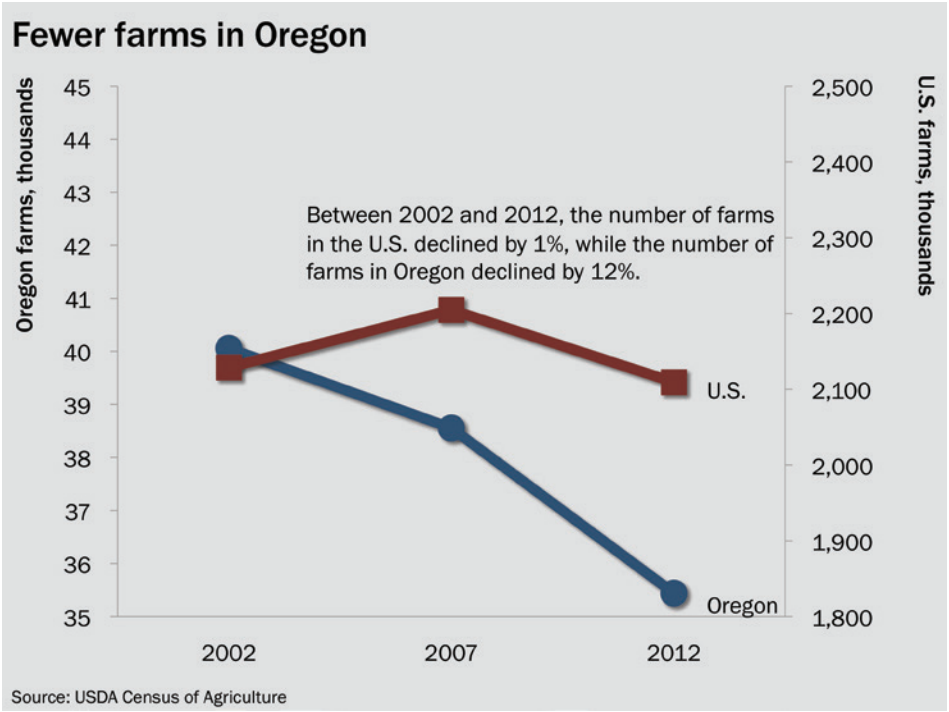
In other words, during a period in which United States average farm incomes increased by almost 30 percent, the Oregon farm operation experienced a 2 percent drop in income. In 2002, the average Oregon farm operation earned $3,900 less that the average farm operation in the United States as whole. Ten years later, in 2012, that gap grew to a yawning $20,800 in lower Oregon farm incomes.

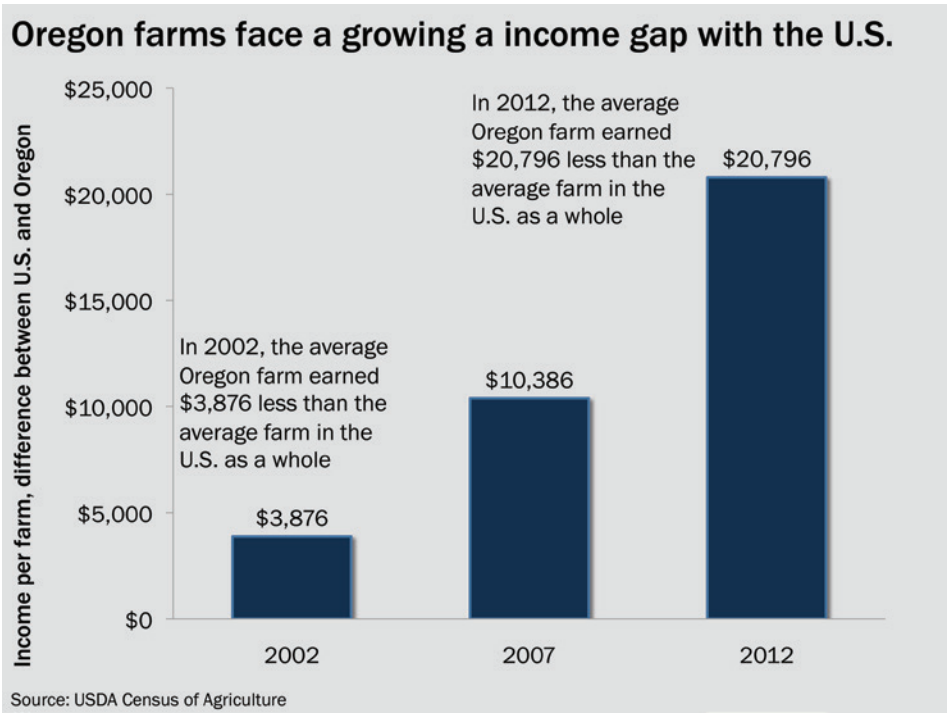
In addition to the decline in per-farm incomes, the number of farms in Oregon has been declining, despite the state's unique land use laws designed to preserve farmland. Between 2002 and 2012, the number of farms in the United States declined by 1 percent, while the number of farms in Oregon declined by 12 percent. Through consolidations and closures, Oregon had 3,114 fewer farms in 2012 than it did in 2007.

"In 2012, there were 4,000 fewer smaller farms... than there were in 2007"

Between 2007 and 2012, the vast majority of farms remained family owned, accounting for more than 90 percent of the state's 35,439 farms. However, the total number of acres owned by family farms has dropped from 74 percent to 70 percent, and sales have dropped from 71 percent to about 69 percent. This means that the non-family owned farms, which comprise only 9 percent of the total number of farms, account for 30 percent of the total number of acres farmed and 31 percent of the sales.

In 2012, there were 4,000 fewer smaller farms — those reporting less than $10,000 in annual sales — than there were in 2007. These smaller farms account for 64 percent of all Oregon farms and only 1.9 percent of Oregon's total sales of agricultural products. ■





OSU Partners on $3.2 Million Study to Probe a Costly Potato Pest

BY NAOMI INMAN

A leading genomicist, Dee Denver, from Oregon State University's College of Science, is joining other scientists to find an earth-friendly approach to eliminating the crop-crunching pale cyst nematode and golden cyst nematode. The microscopic parasites burrow into the roots of potato plants, sucking out essential nutrients and reducing crop yields by up to 80 percent.

"the USDA's key objective is to find less environmentally damaging strategies for controlling the pests"

The five-year, $3.2 million project, funded by the U.S. Department of Agriculture (USDA), has chosen an international team of scientists from Oregon, Idaho, New York, Canada, France and Scotland to study the potato probing parasites. A second OSU courtesy faculty member, Inga Zasada, is a nematode expert with the USDA's Agricultural Research Service and says, "The nematode problem has a global reach... posing a significant threat to Northwest and U.S. potato industries."

Denver explained the USDA's key objective is to find less environmentally damaging strategies for controlling the pests, currently controlled by fumigation with methyl bromide, a highly toxic, ozone-layer-depleting gas. "We're hoping to replace fumigation with integrated pest-control strategies," he said. "A key piece of that will be developing resistant potato varieties."

For their part, Zasada and Denver will study a third nematode, G. ellingtonae, an apparently harmless cousin to the two highly destructive ones found in New York and Idaho. The third type was detected in 2008 in an OSU research field near Powell Butte, now quarantined. "It's a good model for understanding how the parasite does its damage, and how its genome... responds to...fumigation."

Potatoes are the fourth most consumed food staple in the world, bringing farmers about $4 billion a year and earning Oregon farmers about $180 million from potatoes in 2015, according to the United States Department of Agriculture. ■

New Sage Grouse Rules

BY DAVE HUNNICUTT, OREGONIANS IN ACTION

On July 23, the Oregon Land Conservation and Development Commission (LCDC) approved new rules for the protection of the Greater Sage Grouse. These new rules apply to seven central and eastern Oregon counties — Baker, Crook, Deschutes, Harney, Lake, Malheur, and Union. The rules are likely to have a significant detrimental impact on growth in these counties.

The stated purpose of the rules is to provide greater protection of Sage Grouse habitat, in the hope that state protection will result in the elimination of the listing of the Sage Grouse under the federal Endangered Species Act (ESA). Whether this is a realistic possibility is open to debate, since the United States Fish and Wildlife Service already considered a Sage Grouse listing under the ESA in 2010 and determined that a listing was not a priority for the agency. In fact, of the 146 species currently listed as candidates for possible ESA inclusion, there are at least 95 species with a higher priority for listing than the Sage Grouse.

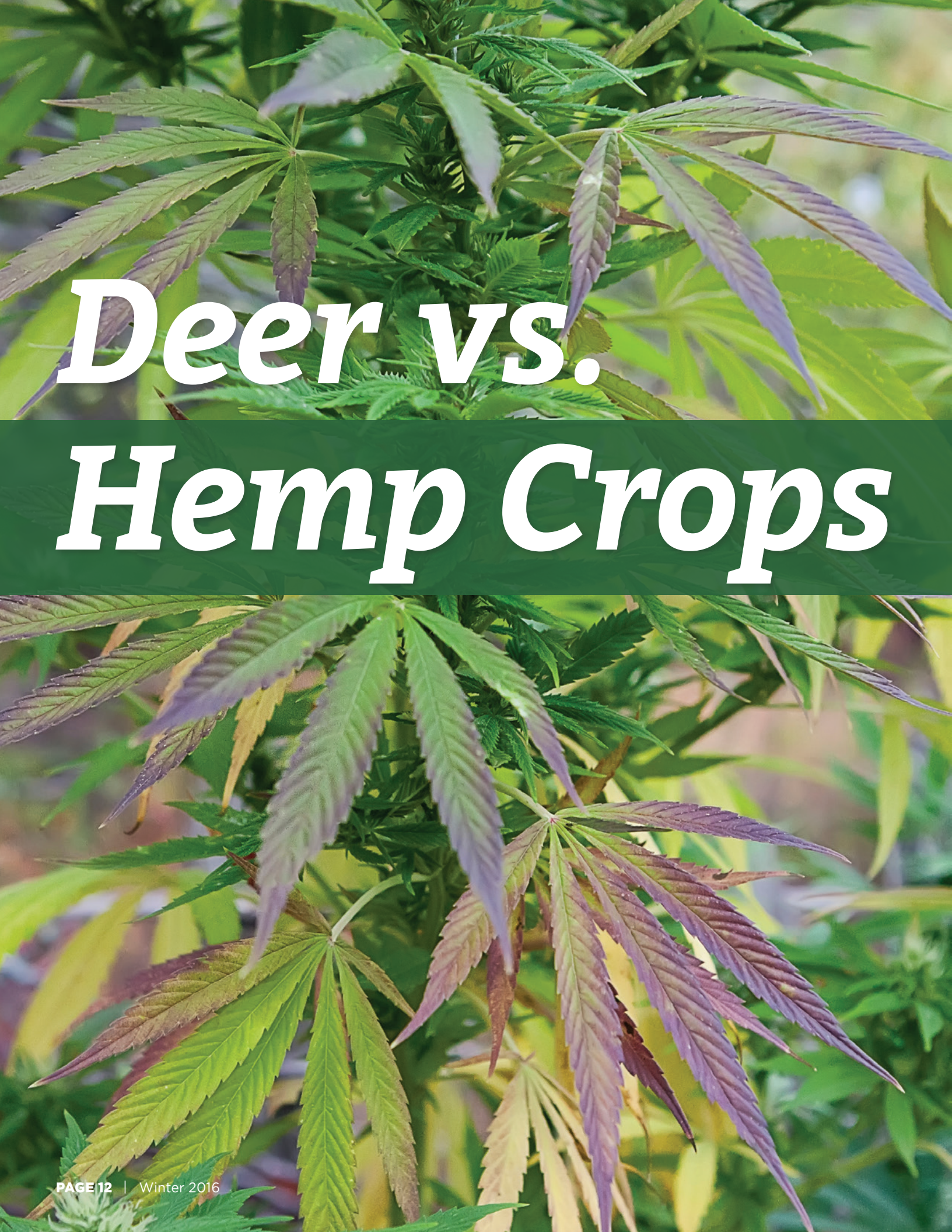
The rules, which apply to private property zoned for agricultural use (EFU) or forest use, create significant new limitations on "conflicting uses," which LCDC considers to be uses which might in some way bother the Sage Grouse. Under the rule, virtually all development in the EFU and forest zones would be considered a "conflicting use." For example, a new home for a rancher is considered a "conflicting use." So is a farm stand. A processing facility for crops — that's a conflicting use too.

"The rules are likely to have a significant detrimental impact on growth in these counties."

How about a church? A new school? A mine or other new industry? Yes — all of these are "conflicting uses." Apparently, the Sage Grouse have more right to occupy the private property than the property owner.

Unfortunately, any use considered to be a "conflicting use" is limited to whatever restrictions that the Oregon Department of Fish and Wildlife (ODFW) decide are appropriate for the development, including a decision that the development can't be approved. In other words, the property owner is completely at the mercy of ODFW to decide whether or not the "conflicting use" can be approved, and there are no set criteria for ODFW to consider. Whatever ODFW decides is the way it's going to be.

So why is LCDC adopting new rules for Sage Grouse protection? No one knows, but it doesn't really appear to be about avoiding an ESA listing. In fact, LCDC claims that Sage Grouse habitat has eroded as a result of "the introduction of invasive weeds, juniper encroachment, large-scale development, wildland fire, and intensive agriculture." With the exception of "large-scale development," LCDC's rules do nothing to address any of the other causes, and more importantly, their rules impact development that LCDC recognizes is not "large-scale" at all. ■



Deer vs. Hemp Crops

BY KURT HEATH

For Oregon hemp growers, an unlikely threat has emerged this growing season—deer. Media outlets in Southern Oregon recently reported that deer invaded and feasted on many of the roughly 1000 marijuana plants part of Oregon's first industrial hemp crop. The story spread nationally among traditional news media and was also widely reported in pro-marijuana blogs and websites. According to Cliff Johnson, one of the business partners helping to manage the industrial crop, as few as 40 plants were left standing by the time the deer had finished.

"The truth is, deer are very likely to eat hemp..."

Johnson expressed surprise at the incident, saying, "Generally, I don't think they like cannabis, but they sure liked ours." The truth is, deer are very likely to eat hemp, depending on certain factors, and industrial hemp growers may be particularly susceptible.

"Will Deer Eat My Outdoor Marijuana Plants?" That was the headline of an informative 2014 article posted by the popular *Weed Blog*. The blog indicates that deer, unlike other animals, don't mind the taste of hemp in the early stages of growth. The more mature the plants become, the less likely deer, or any animal for that matter, are to eat it. Younger marijuana plants are a different story, however. These plants have less levels of THC, the psychoactive agent in hemp. As plants mature, THC increases and makes them less edible. Industrial hemp, the target of the deer in Southern Oregon, typically has low levels of THC, leaving it particularly vulnerable to the pallets of deer. Additionally, the deer are attracted to the plant because it's relatively high in protein.

Orhemco, the name of the impacted Southern Oregon hemp company, failed to erect sufficient fencing tall enough to keep deer out. At the time of planting, there was some concern that a bill in the Oregon Legislature targeting enterprises like Orhemco was about to put the company out of business before it really got off the ground. The business uncertainty resulting from the proposed legislation caused the company to complete adequate fencing on only some of the land, leaving much of the crop vulnerable. Orhemco figured the threat from deer and other herbivores was small and worth the risk. The shorter fencing that stood between the hemp and deer, however, appears to have been easily trampled under hoof.

The *Grants Pass Daily Courier*, which originally reported the incident, compared the deer's impact on the industrial hemp crop to that of a high-powered mower. ■

Record Level Drought

Even as drought conditions have improved in many states, Oregon's drought continues and now ranks as the worst in the entire United States. What's worse, the forecast leading into next year should be cause for concern among Oregon famers.

BY KURT HEATH

Currently, every region in Oregon is in a state of severe or extreme drought, as recently reported by the U.S. Drought Monitor. Oregon is one of only eight states designated as having the most "widespread" extreme and severe drought conditions in the country. Such conditions can be accompanied by crop and pasture losses, as well as water shortages and eventual restrictions if they progress. What's true of Oregon is also true of nearby Washington, which ranks just behind Oregon in terms of worst drought conditions in the United States.

In Oregon's case:

- 25 of 36 counties have been declared states of emergency. Governor Kate Brown most recently declared Marion County an emergency the first week of October. In 2014, only 10 counties experienced similar declarations.
- 32% of the state is in "severe drought, with more than 67% in extreme drought, the worst outlook of any state.

- According the Bureau of Land Reclamation, water reservoirs relied on by Oregon farmers and growers are at historically record low levels. For example, the Wickiup reservoir near Bend, which waters farmland in Central Oregon, is currently at an alarming 9% of capacity — that's roughly 3.5 times less than normal and the lowest level in more than two decades.
- Water levels across the state are so low in fact, that experts are not optimistic that this year's rainy season will provide enough precipitation to replenish the reservoir by next year's growing season.

A perfect storm of conditions starting last winter factor into Oregon's current drought and diminished water supplies. A warmer 2014/2015 winter significantly reduced the snowpack, often referred to as frozen reservoirs, going into the summer months. A lack of snowpack creates a kind of domino effect, as underground springs aren't replenished to support reservoirs from underneath and low stream flows negatively impact irrigation. As it happened, this summer turned out to be one of the hottest and driest on record, with long stretches of 90-plus degree weather beginning in May.

It's important to keep in mind that drought conditions from one year to the next can have a compounding effect. If the connection between seasonal weather patterns is taken into account, drought conditions could be even worse next year for the Northwest.

That's because forecasters are predicting that last winter's record low snowpack and this year's historically hot, dry summer will be followed by a strong El Niño effect this coming winter. For Washington, this likely means a warmer and dryer winter. For Oregon, it probably means another warm winter as well, even if a significant amount of rain does fall through the winter months. In the case of both states, snow pack is expected to again be compromised, leaving Northwest region vulnerable as next summer's dry season approaches. ■

Farmers Dread Spotted Frog Lawsuit

BY MATT EVANS

The Oregon spotted frog (Rana pretiosa) will get it's day in a Eugene federal District Court. This will follow, by about two years, the U.S. Fish & Wildlife Service's listing of the amphibian as "threatened" under the Endangered Species Act and the recent filing of the lawsuits by WaterWatch of Oregon and the Center for Biological Diversity located in Arizona.

At stake is water usage in the Upper Deschutes River basin. The River winds through the high desert of Central Oregon, flowing from headwaters on the Eastern slope of the Cascade Range and finally empties into the Columbia River 252 miles later. Primary impacts of any restrictions on agricultural water usage would fall in Jefferson County, north of Central Oregon's largest population areas of Bend and Redmond.

At the moment however, the largest impact of the lawsuits appears to be the tremendous uncertainty created. After a poor water year in the winter of 2014-15, the snowpack this year looks very good, and is likely to result in local reservoirs reaching near capacity. Reservoirs filled by the Deschutes, including Crane Prairie (rebuilt 1940) and Wickiup (1949), could be forced to hold water during the irrigation season to benefit frog habitat. Both reservoirs were built by the US Bureau of Reclamation, along with the Fish & Wildlife Service a defendant in the lawsuits, with funds provided by all taxpayers, including farmers. A recent report in the Bend Bulletin noted that local farm equipment sales have plunged in Central Oregon, in large part due to this uncertainty.

Oregonians are no strangers to having their livelihoods snatched away in efforts to protect various plants, animals, and birds. Prior to the listing of the Northern Spotted Owl as "threatened," the federal government oversaw annual Oregon timber sales on it's lands of millions of board feet. This in turn allowed tens of thousands of high-paying jobs, particularly in the state's rural areas, in felling trees, milling them into dimensional lumber and transporting the finished products. Ironically, many of these jobs did not even require so much as a high school diploma, whereas today's society is lamenting the lack of jobs available to those without a college degree. In addition, many local communities also lost part of federal funds known as "PILT" (Payment In Lieu of Taxes) payments, agreed to when the former Oregon and California Railroad lands were deeded back

to the federal government and on which property taxes are not levied. In most communities, these funds were used for road building, schools, law enforcement and other needs. Many Counties are still trying to recover from the reduction of these payments. Voters in Counties hard hit by job losses in the timber industry have been reluctant to tax themselves to replace the lost funds.

Central Oregon growers provide a diverse blend of crops and seeds that could be impacted. Of particular concern is the length of the growing season, which is stretched by the natural maturity of the various farm products and wise use practices of the local farm community. In jeopardy are such staples of Central Oregon agriculture as wheat and barley, but also the seed crops that follow their harvest, including Kentucky bluegrass and carrots. Reductions in water availability may force farmers to plant and harvest only one crop per year, potentially dramatically reducing their income or forcing them to consider a switch to higher value crops which may not be as well suited to the local climate.

"Oregonians are no strangers to having their livelihoods snatched away in efforts to protect various plants, animals, and birds."

For generations, American farmers squatted in the dooryard, scenting the air, perhaps hoping for rain or sun, but having little control over what Mother Nature provided. The building of the great irrigation dams and reservoirs gave some certainty to farmers, allowing even the desert to bloom and provide food and jobs across the nation and the world. This year, Central Oregon farmers will look not to the skies, but to a courtroom in Eugene to see if their fellow men have more regard for them than the whims of Mother Nature. ■

The Oregon Country's Oldest Apple Tree

BY TIM LYMAN

At the Vancouver National Historic Reserve, is the oldest Apple tree in the Oregon Country. A nearby plaque reads "The Oldest Apple Tree in the Northwest. Grown from seed brought from London, England in 1826 by the Hudson's Bay Company."

A descendent of John McLoughlin, Chief Factor and Superintendent of the Columbia District of the Hudson's Bay Company at Fort Vancouver, J.W. McLoughlin Harvey, relates the story of the origin of the Fort's apple trees:

> *"In the year 1827 Mr. Simpson, cousin of Gov'r Simpson, who arrived in the county in 1826, at the dinner table happening to feel in his vest pocket found a few apple seeds wrapped up in a paper, the circumstances of which he explained as follows. At a dinner party in England prior to his coming to this country, a lady after paring an apple gathered the seeds together and handed them to Mr. Simpson with the remark 'that as he was going to a new country where apples were unknown she would make him a present of the seeds with the hope that at some time he would plant them.' These seeds were planted by Peter Pabrum (Pambrun), and the growth of the tree from day to day was carefully watched."*[1]

Archaeological excavations in the 1960s determined the tree was located at the site of the employee village, the living area of low ranking HBC employees.[2] Extensive excavations to the north and east of the Old Apple Tree in 1981 uncovered a house dating to 1825. It is likely that the earliest occupants tended to, and may have even planted, the tree.[3]

The tree was 'discovered' in 1911:

> *"The discovery this week of the oldest apple tree in the Northwest, which has borne fruit for more than eighty years, has aroused much interest, and hundreds have visited the post just to see the tree with a remarkable record. … A suitable fence around the base of the tree will be built, and a stone monument, with a short history of its remarkable record, will be placed in the enclosure."*[4]

Today the tree stands as the last living remnant of the Hudson's Bay Company's Fort Vancouver. ■

[1] Terri A. Taylor and Patricia Erigero, *Cultural landscape report Fort Vancouver National Historic Site, Vancouver, Washington* (Seattle, Wash: National Park Service, Dept. of the Interior, Cultural Resources Division, Pacific Northwest Region, 1992), 25.

[2] Susan Kardas, "The People Bought This and the Clatsop Became Rich a View of Nineteenth Century Fur Trade Relationships on the Lower Columbia between Chinookan Speakers, Whites, and Kanakas." (PhD diss., Bryn Mawr College, 1971).

[3] J. B. G. Thomas and Charles Hibbs. *Report of Investigations of Excavations at Kanaka Village, Vancouver Barracks, Washington, 1980/1981* (Olympia, WA: Washington State Dept. of Transportation, 1984).

[4] Tree Planted 85 Years Ago Bears Fruit," Oregonian, January 21, 1911: 14, accessed April 14, 2016, http://infoweb.newsbank.com/resources/doc/nb/image/v2:11A73E5827618330@EANX-NB-11B983F4B28FA250@2419058-11B983F537BF5108@14-11B983F7A35FC170@Tree Planted 85 Years Ago Bears Fruit?p=AMNEWS.

Oregon Flavored Recipes

Marionberry Cobbler

Ingredients:

- 6 c. Marionberries
- 1 tsp Lemon zest
- 1 1/2 c. Granulated sugar
- 1/4 c. Brown sugar - (packed)
- 1 tsp Cinnamon
- 1 1/2 Tbsp. Cornstarch
- 1 Tbsp. Dark rum
- 5 Tbsp. Cool unsalted butter
- 1 c. All purpose flour
- 2 Tbsp. Yellow cornmeal
- 2 Tbsp. Sugar
- 1 1/2 tsp Baking pwdr
- 1/2 tsp Salt
- 1/2 c. Lowfat milk
- 1/2 tsp Vanilla
- Vanilla ice cream

Directions:

- Preheat the oven to 375 degrees. Butter a shallow 2-qt baking dish.
- Make the topping: Blend or mix together flour, cornmeal, sugar, baking powder, salt, and butter till mix resembles coarse meal.
- In a bowl, toss the berries with the remaining filling ingredients and spread proportionately in the baking dish.
  Add in lowfat milk and vanilla and stir till mix forms a dough.
- Drop rounded tablespons of topping onto berry filling.
  and bake in oven for 40 min, or until topping is golden brown.

Makes 8 portions; serve with ice cream.

Do you have a favorite Oregon recipe? Email us at oregonfamilyfarm@gmail.com
Or send to: Oregon Family Farm Association. P.O. Box 23504, Tigard, OR, 97281

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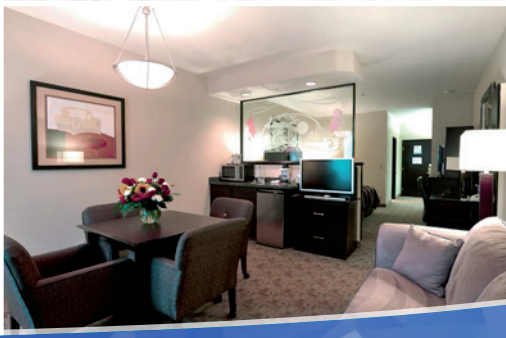

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