



Tony Chiotti/Blue Mountain Eagle

Becky Stonerod-Pereira points to a number of succulent plants at the John Day Street Fair.

Fair

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Also on hand was 8-year-old artisan Brooklyn Adams, who had a few handmade items of her own for sale. Brooklyn has been learning to craft, first with Perler beads, plastic beads that are heat-fused into all manner of patterns. Lately she's been learning to use a knitting loom to create anything from baby flamingoes to owls and even a blue whale.

We met Brooklyn mid-transaction, as her mother rang up a bright blue, plush knitted squid. And in the time it took us to get the spelling of her name from her mother, she had already walked off and spent the money she'd just earned at the neighboring stall, buying a small, prickly cactus: the hyperlocal economy in action.

The site of the street fair, the Pit Stop, has been an ongoing and sometimes controversial project for the city of John Day. The small piece of city-owned land on the southwest corner of Main and Canton streets has been the subject of debate at city council meetings, with ways to develop the site being a hot button issue for residents.

Some have viewed the space as a place for food carts, bike lockers and a farmers market to help promote tourism. Others saw the site as a space to be used as parking for oversized vehicles.

Ultimately, it appears the idea of developing the space as a public rest area for visitors as well as a site for community events has won out.

There is still work to do before the site is completed. Already finished are the bathrooms, a drinking fountain and a paved parking lot. The lot will have 11 parking spaces when completed, including a single handicapped parking space.

The city council has approved plans to install bike lockers. Other proposed improvements to the site include fencing, a fire pit, seating, a shade structure, signage and a bulletin board, as well as a flower garden that will serve as a thank-you to members of the community who do volunteer work on behalf of Grant County's senior population.

The street fair was sponsored by the Oregon Regional Accelerator & Innovation Network, known as Oregon RAIN for short. The organization put on a rotating series of street fairs this year in John Day, Prairie City and Canyon City.

Zach Denney of Oregon RAIN said the series of street fairs this year was a success and he has plans to increase the number of events next year. "We wanted to try to create a space that gave our vendors the opportunity to sell their goods and services and then also bring the community together for some fun, and I think we knocked it out of the park on both fronts for having it be so simple," Denney said.

The plan for next year is to have a street fair every month in John Day, Canyon City and Prairie City instead of rotating between the three communities on a monthly basis.

The 2023 season will begin in late March or early April and go through September.

Nitrate

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Understanding LUBGWMA

The basis for issuing such a large fine to the port lies in its location.

DEQ designated the Lower Umatilla Basin Groundwater Management Area, which goes by the imposing acronym of LUBGWMA, in 1990. The area straddles northern Morrow and Umatilla counties and includes the cities of Hermiston, Umatilla, Echo, Stanfield, Boardman and Irrigon.

The Oregon Health Authority estimates approximately 4,500 domestic wells are in the area providing water for about 12,000 people.

State officials may declare a "groundwater management area" when levels of groundwater nitrates surpass 7 milligrams per liter. That's 70% of the EPA's limit for safe drinking water.

While contamination levels in the LUBGWMA vary, many wells have tested above the limit, hence the emergency declaration in Morrow County, DEQ spokeswoman Laura Gleim said.

A test of 132 wells sampled in the area shows 44% exceeded the safe drinking water standard for nitrates, including 14 wells that registered 40 to 60 milligrams per liter. Three wells had more than 60 milligrams per liter — more than six times the maximum allowable concentration.

Erica Heartquist, spokeswoman for the Oregon Health Authority, said drinking water with high levels of nitrates can contribute to several health problems in adults, such as respiratory infections, thyroid dysfunction, spontaneous abortions and some cancers.

The agency, however, does not have the level of detailed information necessary to determine whether any resident's illness has been caused by exposure to nitrates in drinking water.

In infants, consuming nitrates can cause methemoglobinemia, or "blue baby syndrome," which occurs when an inadequate amount of oxygen enters the blood.

Methemoglobinemia is not a "reportable condition" for health care providers, though according to OHA, a search of diagnostic codes in health care claims and hospitalization discharge, emergency department and urgent care clinic data found no records of it over the last 10 years.

That search, however, is an inexact science, Heartquist cautioned, and even if the level of



Lynn Ketchum, Oregon State University/Contributed Photo

The test tubes that are used to check for nitrates in well water.

exposure is not enough to cause methemoglobinemia, high levels of nitrates in drinking water can still be harmful.

Sources of nitrates

Nitrogen-based fertilizer used on irrigated agricultural land is the source of almost 70% of the nitrogen that has leached into the groundwater, according to research by DEQ, the state Department of Agriculture and Oregon State University Extension Service.

About 12.2% comes from using liquid manure from confined animal feeding operations, such as dairies, to fertilize crops.

Eight percent comes from livestock pastures, and 4.6% is from applying wastewater for irrigation.

In the port's case, it obtained much of its wastewater from food processors making products such as french fries, frozen onions, cheese and mint oil. Not only is nitrogen found naturally in the crops themselves, but is also in the soil and fertilizers that gets washed off the vegetables during processing, DEQ's Gleim said.

Recycled water is important for farmers in the basin, where it rains 9 inches per year.

Valuable resource

The nutrients in water reused for irrigation reduce the use of commercial fertilizer that would otherwise generate up to 12,000 tons of carbon dioxide annually, according to NOWA. It also reduces the pressure on badly stressed aquifers.

"It allows industry to continue to grow," said Jake Madison, a fourth-generation farmer and president of Madison Ranches in Echo, Ore. He uses wastewater from the port to irrigate 2,800 acres of cropland. "It's a great sustainability story, from the reuse of a scarce natural resource in the area."

Avoiding nitrate contamination means growers must apply the right amount of nitrogen at

the right time.

Too much, and the plants may not be able to use it all.

Apply it before or during wet weather, and the risk of nitrates leaching below the root zone increases.

Either way, it could end up in the groundwater below.

A committee of government, industry and environmental representatives has recommended voluntary measures aimed at curbing nitrates in the LUBGWMA.

Still, 30 years later, data show nitrate concentrations "are going up more than they're going down," the committee reported in its 2020 action plan.

Shannon Davis, DEQ Eastern Region administrator, said the agency "could have been doing a much better job than we've done to date" regulating permitted facilities.

The priority, she said, is issuing strong and consistently enforced permits.

With DEQ, the Port of Morrow is now amending its permit to ensure it does not exceed prescribed rates for land application.

"We owe it to the state of Oregon and the people out there to do the best we can cleaning up and protecting the groundwater," Davis said.

Legacy of contamination

At the same time, Davis acknowledges the area's economy is built on agriculture, and permits must be flexible so farmers can produce food economically.

Cook, with NOWA, said that while DEQ emphasizes stronger permits for operators, it has neglected to address remediation of "legacy" pollutants — nitrates that have accumulated underground over past generations.

Nitrate contamination in the LUBGWMA appears to be in shallow aquifers that aren't con-

nected to the floodplain, Cook said. That makes it extremely difficult to remove.

"The water that's in there does not go anywhere," he explained. "The only way you get it out is to dilute it over time, or pump it out and put it onto fields."

Cook helped create NOWA in 2013 to address water quality and quantity in the basin. His organization has led calls for more funding from the state to better understand the area's geology and hydrology, create a more robust well-testing network and implement recommendations outlined in the LUBGWMA committee's action plan.

"Until there's action, until there's a program, it's all talk," Cook said.

Madison described legacy nitrates as "great-great grandpa's contamination." He said farming practices have come a long way since then, with producers using less nitrogen today to grow more food, depending on the crop.

Applying too much nitrogen can hamper both crop quality and the farm's bottom line, Madison said. That adds incentive to adopt best management practices. But until the legacy nitrates are dealt with, he worries contamination will persist.

"We've got to try to figure out a way to get that water out and do something useful with it," he said.

A larger problem

Groundwater nitrates extend beyond the Umatilla Basin and across the Pacific Northwest and U.S.

The LUBGWMA is one of three groundwater management areas in Oregon. The other two are in northern Malheur County and the southern Willamette Valley.

In Washington, the state Department of Ecology undertook its Nitrate Prioritization Project in 2014, mapping groundwater areas identified as most vulnerable to contamination. Candidates for "priority areas" are found statewide, from dryland farming areas in the east to the Puget Sound lowlands in the west.

Colleen Keltz, a spokeswoman for Ecology's Water Quality Program, highlighted the Lower Yakima Valley Groundwater Management Area, where she said about 75 residents have well water that does not meet the EPA's safe drinking water standard.

The Idaho Department of Environmental Quality also maintains a ranking of groundwater nitrate priority areas. It will be updated in 2024.

Coffee Break!



1	2	3	4	5	6	7	8	9	10	11	12	13	
14				15					16				
17				18					19				
20				21	22				23				
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27	28	29	30				31		32	33	34		
35		36				37			38				
39					40				41				
42					43				44				
45				46					47			48	
			49						50			51	
52	53	54				55			56		57	58	59
60						61			62			63	
64						65			66				
67						68			69				

- CLUES ACROSS**
- Bay Area humorist
 - Hurt
 - Icelandic poems
 - A taro corm
 - Metaphorical use of a word
 - It fears the hammer
 - Excessively quaint (British)
 - Laid-back California county
 - Cook in a microwave oven
 - Not late
 - Go from one place to another
 - Peoples living in the Congo
 - Popular pasta
 - Available engine power (abbr.)
 - Popular musician Charles
 - Angry
 - Spelling is one type
 - One who makes a living
 - Indicates location
 - Imperial Chinese dynasty
 - Small water buffaloes
 - Hungarian city
 - Fabric
 - Ancient kingdom near Dead Sea
 - Precursor to the EU
 - Philly footballers
 - Female sibling
 - "When Harry Met Sally" actress
 - Magnetic tape of high quality
 - Insecticide
 - Apparatus to record and transmit
 - Some is considered "dog"
 - Israeli city __ Aviv
 - Fencing sword
 - Ottoman military title
 - Wise people
 - Cold wind
 - Popular type of shoe
 - Administrative district
 - A way to reveal
 - Cooked meat cut into small pieces
 - Actress Zellweger
 - Romanian city
 - Small town in Portugal
 - Site of famed Ethiopian battle
 - German river
 - Christmas carols
 - Cash machine
 - Rough and uneven
 - Rumanian round dance
 - Widespread occurrence of disease
 - A place to relax
 - Flooding of listlessness
 - Coat or smear a substance
 - Wild mango
 - Brews
 - Belgian city
 - Confined condition (abbr.)
 - Swiss river
 - Small amount
 - Part of buildings
 - Vietnamese capital
 - Sailboats
 - Shelter
 - Terminated
 - Discharge
 - Snag
 - Partner to cheese
 - A container for coffee
 - Spend time dully
 - Satisfies
 - Snake-like fish
 - Consume
 - Type of student
 - Erase
 - Instruct
 - Girl's given name
 - Jewish spiritual leader
 - "To __ his own"
 - North-central Indian city
 - Greek alphabet characters
 - Weapon
 - Amounts of time
 - English Nobel physicist vital to MRI
 - Soviet Socialist Republic
 - Winess

WORD SCRAMBLE

Rearrange the letters to spell something pertaining to baking.

OPSSNO

Guess Who?

I am an actress and talk show host born in New Jersey on October 2, 1970. I was a cheerleader and ballet dancer during high school. I spent 12 years on an ABC soap opera before landing a morning talk show host.



Puzzle solutions can be found in today's classifieds

SUDOKU

			2	4				
					3	4	7	9
					7		3	
4		6	9			8		
	2		7		8	6		
						2		
1		8						5
				7		9		
		2		3				

Fun By The Numbers
Like puzzles? Then you'll love sudoku. This mind-bending puzzle will have you hooked from the moment you square off, so sharpen your pencil and put your sudoku savvy to the test!

BAKING TREATS WORD SEARCH

K D F I E D A U O S A I W V I E A H W V
 F V W C W B B F B D P G C D C A X B E W
 R V E S S V R W E D B O C T E E H S R H
 K B I G P P X O V P T M C X O I G W U A
 V O I O G S D R W U O O H K S O B A T O
 T D B N S S I P A N N K B E F A P W A L
 T E E N G T O V D F O L K G N T C B R O
 W W E T S R K V E E E G E F T A G D E C
 R L R W F I E C E S S M H I O N N P P E
 B H E B S I T D T N U S U R I A W K M U
 X V N V X I S X I T G G E K I A V M E I
 V V E W O L S T A E L B A R X S D E T H
 K M V N N B M R A P N B S R T P E V U C
 G N A C B U C I D S L T O P E R O R P K
 P K E P W T K U P A T R S P P I H W M I
 F L L N S T T S R I H E M I X E R N C U
 T D E E D E G D C F B O I L R G S I F U
 G M X S C R R F N C O O K I E S N K A P
 C A K E N N S H F W L H I P K G C K S P
 P F I B T W V O T S E T R T V F W S V N

- WORDS**
- BAKING
 - BROWN
 - BUTTER
 - CAKE
 - CONFECTION
 - COOKIES
 - DESSERT
 - EGGS
 - ICING
 - INGREDIENTS
 - LEAVENER
 - MIXER
 - OIL
 - OVEN
 - RISE
 - SHEET
 - SIFTED
 - STIR
 - SUGAR
 - SWEET
 - TASTE
 - TEMPERATURE
 - TEST
 - WHIP