

FALL 2022

I D A H O

THE IDAHO GRAIN PRODUCERS ASSOCIATION MAGAZINE

G R A I N



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VIEWS



**BY LUCAS SPRATLING
PRESIDENT**

The end of summer is upon us, and we have put another season of grain in the books. It was a fantastic year for grain, significantly better than last year's intense heat and lack of precipitation. In southern Idaho, it was a summer of hoping we would have enough water, but with timely rains, our region was able to produce another impressive grain crop.

It is incredible how fast a season can fly by. The crop is stored, and some of you may already have seeds in the ground for next year's adventure. But does it go by so fast because we, as farmers, put our heads down and focus only on the end goal, which is to grow the best possible crop we can, despite all the challenges the year may throw our way? Our singular focus has some pros and cons; a pro is that we have yet again produced an impressive grain crop. We are fortunate to live in this great state which usually provides ideal growing conditions that help us harvest some of the highest quality grain around. And a con is that while we are focused on working our ground, significant political turmoil has developed around.

Laws to address climate change are being created behind closed doors and will be introduced in significant quantities in the coming years. Farmers must understand and confront these laws to ensure that American agriculture is adequately represented. Our staff and national organizations are working tirelessly to be prepared and be part of the conversation, but it takes farmer intervention to make a significant change. I ask you to reach out to your local legislators or come to the Idaho Grain Producers Fall meeting November 2-3 in Boise. There, we'll review and develop organizational policy, and then work to inform lawmakers of our policies and all the current on-farm efforts to remain sustainable.

I cannot stress the importance of being involved in forming policies and relationships with decision-makers as we go forward. Farmers not only need to be watching the development of the next Farm Bill, but also focus on the many other bills which contain some climate change solutions to ensure that farms are part of the solution.

The nation and the world have always come to farmers to produce their food; now, farmers are coming center stage to address climate change. I say we take this moment to work together with lawmakers and other organizations. Working together will make us all better growers, producers, and manufacturers for generations to come. I can't wait to see everyone in Boise for our fall meetings, or in Coeur d'Alene for Tri-State Grain Growers Convention with our friends from Oregon and Washington – I hope that anyone who is reading this will reach out to our staff and let them know you want to join us in forming new policy. Call them at 208-345-0706 or email at info@idahograin.org. ■

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Watco Stock photo of the Boise Valley Railroad

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Stacey Katseanes Satterlee Editor-in-Chief
Kellie Kluksdal Assistant Editor

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**IDAHO GRAIN PRODUCERS
ASSOCIATION**

821 West State Street
Boise, Idaho 83702-5832
(208) 345-0706
e-mail: ssatterlee@idahograin.org
e-mail: cprescott@idahograin.org
<http://www.idahograin.org>

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BY STACEY KATSEANES SATTERLEE
EXECUTIVE DIRECTOR

This summer marks 10 years back in Idaho for me and my family. I grew up in Eastern Idaho – after graduating from Utah State University, I moved to Washington, DC, where I met my husband. We ended up living and working there for over 10 years. Just before our twins turned two years old, we moved to the Treasure Valley. It's wild that we've been in our house for 10 years. Right after we moved, we celebrated their second birthday with an Elmo-themed family party – I have distinct memories of bright red frosting all over little faces, and naked bums pushing bubble lawn mowers in our new back yard. It's even wilder that those almost-two-year-olds we moved back with will soon be turning 12 and starting middle school, and the little brother that joined them just turned seven and will be starting the second grade.

We've spent this summer running all over Idaho – my boys are golfers, so we've spent a significant amount of time on golf courses (for the record, I'm trying to be a better golfer so that I can spend time golfing with them). My girl is a swimmer, so we spent a lot of time at the pool. And all my kids play tennis, so we spent time doing that. By the end of summer, I felt run ragged – but I keep reminding myself that I will miss this. We only get 18 summers, all of us together and under one roof, and I'm so grateful we had a great one making memories – it was well worth the exhaustion.

And now – harvest, shorter days, cooler temps, back to school, and planning for fall meetings. I love autumn and am ready for it. IGPA Past President Jamie Kress and I are headed to Washington, DC September 12-14 for a Farm Bill fly-in – the National Association of Wheat Growers (NAWG) set their Farm Bill priorities, so with one year before the current Farm Bill expires, now is the time to start meetings on Capitol Hill.

We hope many of you will join us in Boise for our fall board meeting on November 2-3. Then, NAWG is holding their fall meeting in Salt Lake City November 7-9 – if you've ever wanted to see what one of NAWG's board meetings looks like, this is a unique opportunity to have it in a neighbor state. And finally, Tri-State Grain Growers Convention is in beautiful Coeur d'Alene, Idaho November 29-December 1 – mark your calendars now and plan to attend! ■



Watco Railroads Haul Idaho Grains

BY MATT HOOBLER AND LAURA MCNICHOL

Railroads in Idaho have a long and colorful history. Since the first track was laid in the Gem State in 1874, billions of bushels of grain have trekked across the state by rail to mills and markets across the world. Idaho rail miles peaked in the 1920s at nearly 2,900 miles; today there are over 1,700 miles moving agricultural commodities, as well as pulp/lumber and petroleum products. Agricultural products are the top commodities transported by rail in Idaho.

Short Line and Class I Railroads

“Classes” of railroads are determined based on an annual revenue threshold as set by the federal Surface Transportation Board, the industry’s economic regulator. Class I railroads are any carrier earning over \$943.9 million annually and are typically focused on “long haul” freight shipments. There are two Class I railroads operating across Idaho: BNSF Railway and Union Pacific (UP). Southern Idaho is home to UP’s main artery to the Pacific Northwest, while northern Idaho is home to BNSF’s northern “transcon.”

Class II and III railroads are colloquially referred to as “short lines.” Officially, Class II railroads are those that earn between \$42.4 million and the Class I threshold, and they can be considered a regional railroad. With the January 10, 2022, announcement that Montana Rail Link will be re-acquired by BNSF, there will be

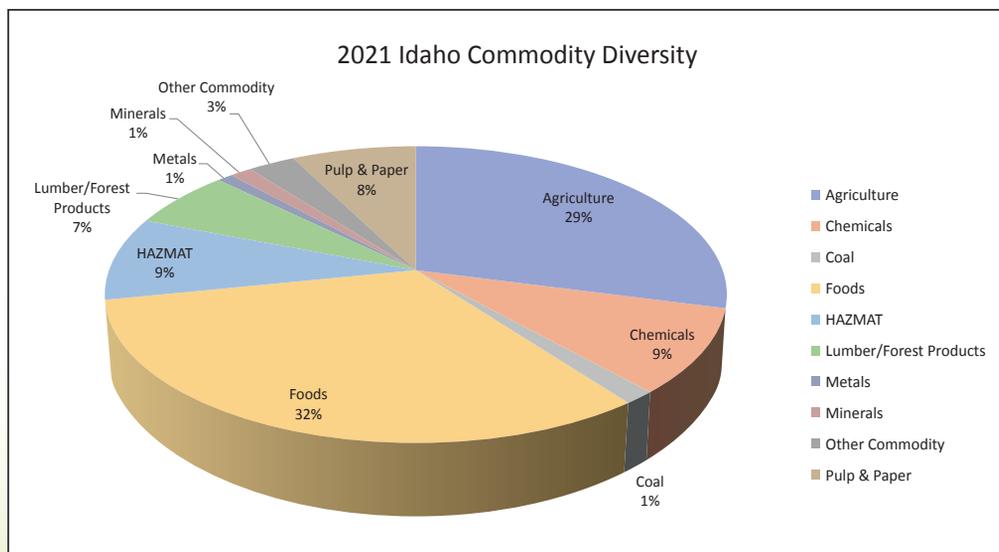


no Class II railroads in Idaho when that transition is complete. Class III short line railroads earn less than \$42.4 million annually.

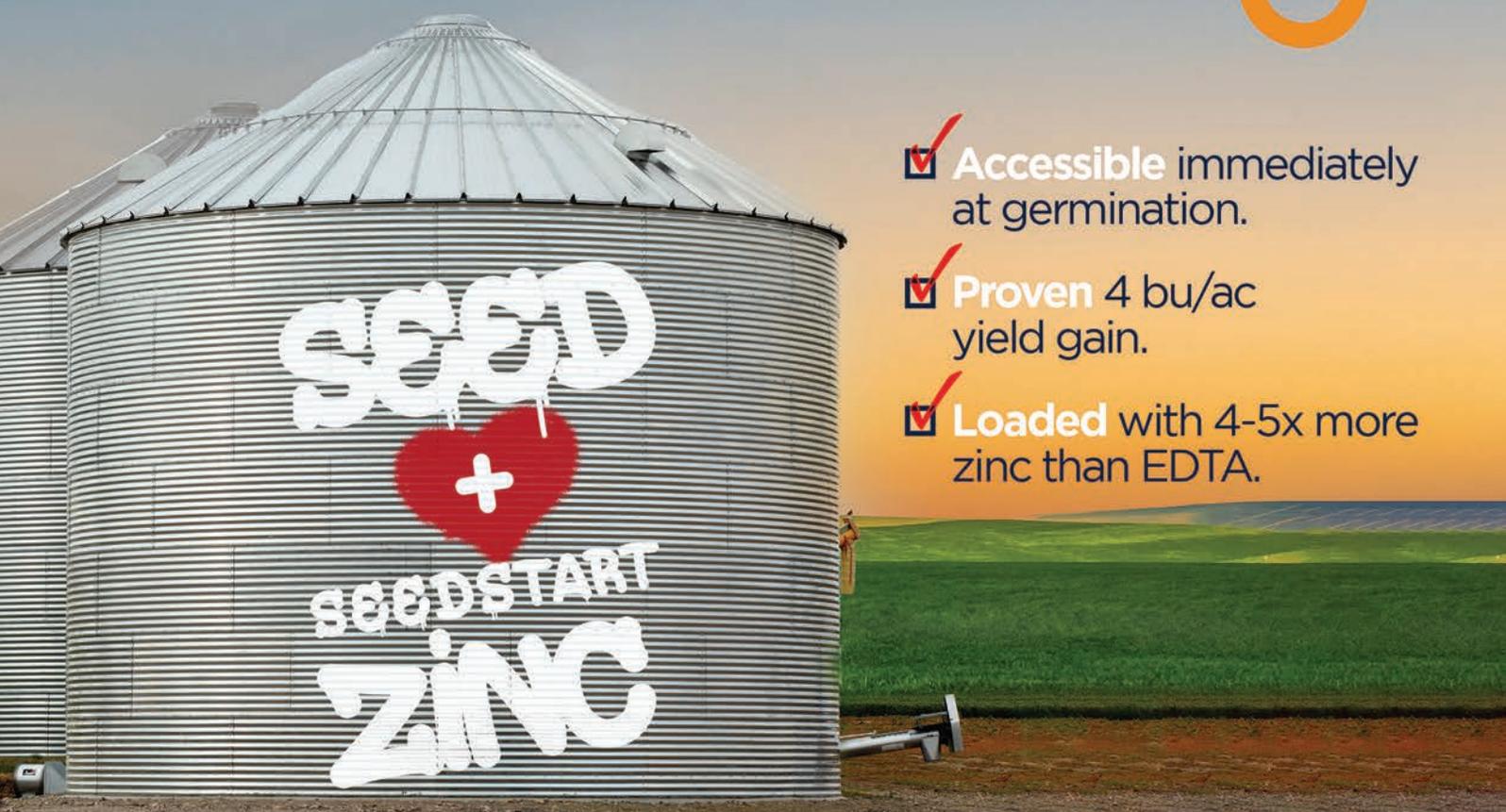
Short lines elongate the reach of a Class I railroad, making markets and delivery points closer to the freight

or commodity. These lines are commonly known as the “first and last mile” as short lines connect Idaho’s communities to a nationwide transportation network. There are 10 short line railroads in Idaho and Watco owns and/or operates three of them. With over 500 miles of track and over 100 Watco team members in Idaho, Watco annually moves over 70,000 railcars across these three railroads from smaller towns like Burley, Rigby, Lewiston, and Wilder to connect with the Class I railways.

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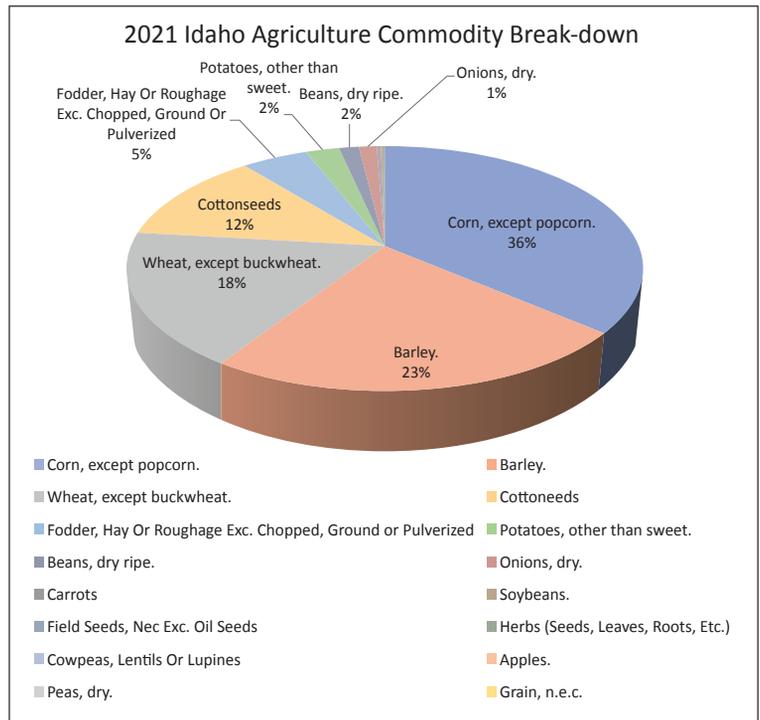
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Eastern Idaho Railroad

The Eastern Idaho Railroad (EIRR), headquartered in Twin Falls, operates two separate clusters of track in south central and eastern Idaho. Owned and operated by Watco since 1993, this railroad was Watco's earliest short line acquisition in the western U.S. The 385-mile line has two branches: Idaho Falls to Ashton and Newdale, and from Minidoka to Buhl and Wendell. The EIRR carries a diverse commodity portfolio, hauling nearly 90 different commodity groups each year. It also provides first-mile service to Watco's Burley food-grade warehouse with refrigerated railcars, providing the region's farmers with fast, reliable access to the nation's population centers. Today, the EIRR supports the first-mile movement of Idaho wheat and barley to domestic and international markets. On the last mile side, the EIRR's movement of inbound feed grains support cattle herds throughout the Idaho dairy and beef industries.

Boise Valley Railroad

Since 2009, the 75-mile Boise Valley Railroad (BVRR), headquartered in Nampa, hauls everything from onions and frozen potatoes to fertilizer, petroleum, and building supplies. The BVRR operates two branches connected by UP trackage rights (where one railroad uses the track owned by another railroad) and serves customers between Nampa and Boise, and between Caldwell and Wilder. Grain volume on the BVRR is inbound feed for the local dairy and cattle industries of southwestern Idaho.



Great Northwestern Railroad

Based in Lewiston, 22 of the Great Northwest Railroad's (GRNW) 97 miles are in Idaho. These 22 miles of rail from Lewiston to Ayer, Washington, where the GRNW connects with both UP and BNSF, carries nearly 7,500 railcars annually loaded with fertilizer, paper, lumber, and grain. Based on annual carloads, the GRNW's largest customer is Clearwater Paper, with Idaho Forest Group as second largest. This is also the rail service provider to Idaho's only water port – the Port of Lewiston. GRNW supports the outbound shipment of wheat and barley to rail-served domestic and international markets.

Tax Incentives for Short Lines

Short line railroads are a key part of local economic stability. When larger railroads were freed by the federal government to operate like other businesses in 1980, they divested themselves of lower density lines. This presented an opportunity for the creation of short line railroads, which have helped preserve or restore rail service in smaller communities or along rail lines with less dense traffic. Short lines connections to the larger rail network enhance transportation options for local shippers and help enhance economic development opportunities.



Due to the circumstances that led to the creation of short line railroads, many lines suffered from years of deferred maintenance. This has meant that the rail itself needed repair or upgrades to haul heavier railcars or there were other capital needs for things like the replacement of railroad crossties, track substructure, bridges and crossings.

The economics of short line railroading are not such that big capital investments can be made without the help of outside sources such as state departments of transportation and/or federal grants. To counteract a history of deferred maintenance and build stronger rural markets, Congress enacted a railroad track maintenance credit (called the 45G credit because of its section in the U.S. Code). This 50 percent tax credit provides short line railroads with up to \$3,500 per rail mile to make capital investments into infrastructure improvements provided the railroad make an initial investment of \$7,000 per mile. Since it was originally created in 2005, the tax credit has helped short line railroads to invest more than \$5 billion to improve, upgrade, and maintain lines across the country.

Additionally, twenty-one states offer a combination of one of the following tools for short lines infrastructure investment: grants, revolving loans, and/or state tax credits modeled after the federal 45G tax credit. Currently eight states have similar state-level short line tax incentives: Oklahoma, Alabama, Georgia, Florida, Kansas, Kentucky, Oregon, Arkansas. It is exciting to see states jump on board to invest in their short line railroads knowing how critical they are to the communities and customers they serve. Tax incentives for short lines maximize the private investment in important transportation infrastructure. All of Idaho’s short line companies look forward to working with leaders in the state to develop a similar tax credit program for short line maintenance with the goal of enhancing safety and driving economic development value for the communities where short line railroads operate.

Matt Hoobler is the Associate VP – Policy and Natural Resources for Watco. He is based out of Cheyenne, Wyoming.

Laura McNichol is Watco’s Chief Sustainability Officer and based Markham, Virginia. ■



Talking About Farm Succession and Transition

Questions put to Dick Wittman of Wittman Consulting

BY ANNA PRATT LICKLEY, PROGRAM MANAGER, IDAHO FARM AND RANCH CENTER

1. Why do so few farmers have a transition plan?

Most are intimidated by the complexity of the process, or they simply don't know where to start, opting to put it off until later. Many are fearful of failure as they witness frequent disastrous attempts at transition instead of well-designed and successfully implemented outcomes. They worry advisors or salesmen will sell them something they don't need. And, because farmers are by nature "do-it-yourselfers", they are hesitant to spend money on professionals who can coach them through the process.



2. What is the difference between an estate plan and a succession plan?

Succession planning deals with "business life planning." It involves addressing critical conversation among stakeholders like: "Should the business continue or be sold or leased out? Are there viable candidates who want to work in the business and/or want to become owners? For those wishing to continue in business together, is there alignment in the mission, vision and core values of key stakeholders that can provide the foundation for a cohesive and professional business moving forward? Are there unique roles for those wishing to work together and is there a commitment to respect those roles and be accountable to each other?" If there are positive answers from these discussions and viable candidates are willing to be considered, then it is a matter of working through processes for transitioning job roles (apprenticeships, training/mentoring programs) and business ownership roles (buyout arrangements, leases, etc.)

Estate Planning can be looked at as "death planning." It addresses financial wealth analysis, estate tax risk, liquidity coverage, and potential insurance needs. It examines optimal strategies for transferring wealth during life versus at death. It involves assessing the capacity of your wealth to provide retirement security

and helps inform when it is best to distribute wealth now vs. later. Where there are buyouts or sales of business interests to successors, estate planning efforts may involve reassessing investment portfolio strategies. And, finally, estate planning involves documenting final instructions for distribution of assets via will, durable powers of attorney, health care directives, location of critical understanding (business agreements, legal filings, deeds, keys, passwords, etc.) and final resting place arrangements.

3. If farmers don't consider themselves to be in an imminent need for generational transition, what can they be doing now to be ready for a future transition on their operation?

A key question is, "How can I position this business to be an attractive employer and business investment opportunity?" While you may feel you have a successful operation in many aspects, often the financial, HR and governance structures are largely informal and undocumented. Business structure tends to lack transparency needed for potential successors to



assess what they might be getting into if they are considering joining your business. Before you can decide where you wish to end up in a transition, you first must define and explain clearly to potential successors where you are and how you got to your current position. This means putting on paper your history, mission, vision, and core value statements. It means documenting your organization chart and written job descriptions for key roles, and putting in writing policies for how the business handles critical issues such as family employment, compensation, workdays, and hours, etc. This documentation isn't just bureaucracy—it's an essential process for efficiently capturing institutional knowledge and efficiently passing this on to the next generation. It is also important to be clear with potential successors your expectations for the vision of the business. Do you EXPECT the next generation to carry on the business legacy? Or do you believe that each generation can make a choice, and your goal is simply to make sure the business has grown, innovated, and is POSITIONED so that potential successors can carry on if that is their passion and career choice.

4. How should the incoming and outgoing generations begin preparing for succession planning?

There is a saying within the consulting profession, “educate before consulting.” “A critical first step,” says Lance Woodbury of KCoe-Isom, a longtime collaborator with Wittman Consulting, is turning “I” knowledge into “We” knowledge. This can encompass several dimensions. First is creating transparency in how the business is managed and governed, as discussed under question #3. This shifts the discussions from, “How do we function as a family?” to, “How do we function as a professionally managed business and what do we need to do to be sustainable into the future?” A second foundational step is to engage key stakeholders in a

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family meeting to explore critical conversations such as: what decisions eventually NEED to be made, what are stakeholders' goals; dreams, fears and thoughts about the future; and what are potential timelines for retirements or transitions to occur? The effectiveness of this initial family meeting can be greatly enhanced if it is understood NO DECISIONS or FIRM COMMITMENTS are to be made at this informational meeting. A third step is creating transparency and understanding about the financial position and trends of the business and personal situations (more on this under Question #7). Getting comfortable with and understanding these oftentimes complex documents can put reality into what it will take to assume a percentage ownership role in the business and can provide a platform for senior members to share their philosophies with heirs on how they intend for wealth to transfer to the next generation (gift, sale, transfer by will; equal-equal or other approach).

5. What are the biggest obstacles to successful farm transitions?

There are several obstacles. The list starts with procrastination, unwillingness to stop farming long enough to plan, and not being broadly inclusive with stakeholders who are impacted by the transition process. Self-medication and failure to address this as a team sport can also be a huge obstacle—it is often beneficial to invest in professional facilitators who are not “product-sale focused”. Their job can be to quarterback your team of professional advisors and ensure that all family members have a seat at the table to engage in discussions without being hamstrung by duties to chair discussions.

The cost of inaction, procrastination or short-circuiting the process can be quantified both monetarily and qualitatively. Uncertainty and poorly designed processes can result in destruction of family relationships; talented successors give up hope for timely resolution and seek other opportunities.

6. If regular and open communication is an issue for a farm family business, what steps should they take to overcome that challenge?

Few issues challenge communication dynamics and emotions more than preparing to engage in transition planning. To do transition well, family business owners need to bring their A-game to ensure open and professional communication. To succeed as a professional business, stakeholders have not only a right, but a responsibility to define and adhere to a mutually agreed upon culture of communication. I have a mandatory requirement for businesses preparing for transition that all key stakeholders go through a DiSC Personality Profile exercise to help all parties more clearly understand how each member receives and processes information and interacts with others. It may also be beneficial for a family business to agree on a meeting Code of Conduct that must be followed whenever folks gather. This is particularly helpful when a family has a history of not being able to get through a meeting without significant conflict or participants often bail before discussions are finished.

7. What advice do you have for prospective farmers who are trying to start the conversation about finances with the senior generation?

Many think the outgoing generation is opposed to sharing financials with successors and heirs. I disagree. Most clients want to do this, but they struggle with how to do it without exposing their ignorance or discomfort with how to prepare, explain or interpret financial information to the next generation. I've seen excellent results when clients invite their ag lender,

financial analyst, accountant, or farm management instructor to join family stakeholders in professional and informational educating sessions. Key financial documents needed for these discussions can include cost vs. market value balance sheets, income statement prepared on an accrual-adjusted basis, and five-year trend sheets showing key financial performance metrics that reflect on business liquidity, solvency, profitability, and debt service capacity.

8. Why is the time and effort needed to successfully transition an operation worth it in the end?

The cost of inaction, procrastination or short-circuiting the process can be quantified both monetarily and qualitatively. Uncertainty and poorly designed processes can result in destruction of family relationships; talented successors give up hope for timely resolution and seek other opportunities. Growth and innovations critical to business long term sustainability get passed by because the family business is mired in transition quicksand. Concentrating prematurely on estate planning without developing a viable succession plan where alignment

of expectations is thoroughly vetted can result in people being forced into business together who don't share compatible expectations and should never work together as investors and employee peers. Investing priority time and dollars into building a proactive and professional transition plan is a small price to pay to avoid the above casualties.

“Transition planning is a journey...not a destination. It is complex but doable.”

Wittman Consulting has coached family farm businesses on transition and professional governance systems since 1980. For the last 20 years, Dick and daughter Cori Wittman Stitt have focused on workshops to train other consulting professionals to expand the stable of resources to assist farmers with transition. Dick serves on the Board of Advisors for the Idaho Farm and Ranch Center. In 2021 a revised version of the Wittman guidebook, Building Effective Farm Management and Transition Systems was released in online and hard copy versions. For further information and resources, see www.wittmanconsulting.com



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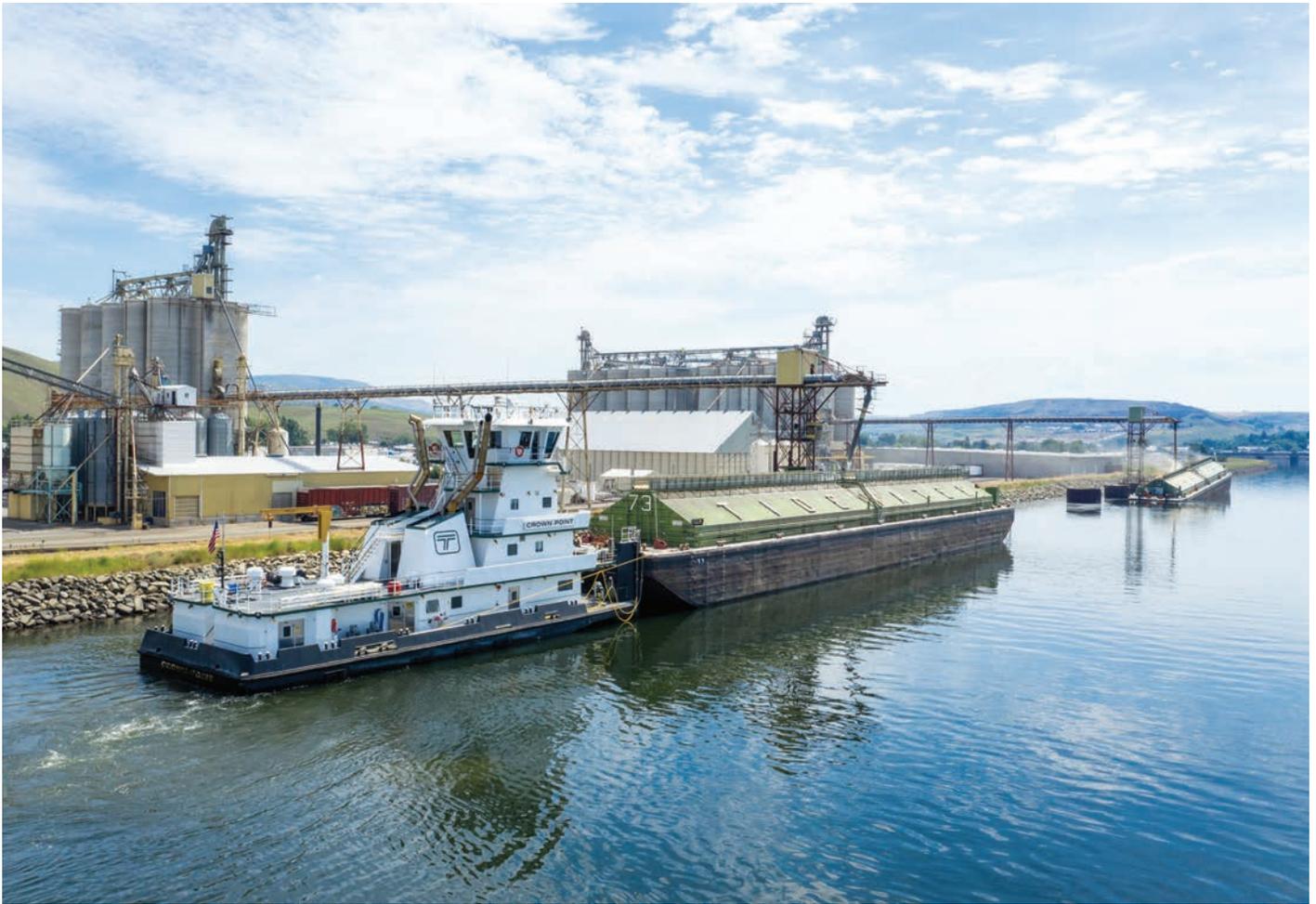
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PNWA Advocates for the Snake River Dams and Navigation in the Northwest

BY HEATHER STEBBINGS, EXECUTIVE DIRECTOR, PACIFIC NORTHWEST WATERWAYS ASSOCIATION

The Pacific Northwest Waterways Association (PNWA) has been a leading advocate for navigation in the Northwest for over 88 years, and our voice and partnerships continue to get stronger. Our organization was founded in 1934 to champion the idea of waterborne transportation from the Mouth of the Columbia River, 465-miles upriver to Lewiston, ID and Clarkston, WA. From the inception of the system, we ensured navigation locks were part of every dam project that was built on the Columbia and Snake Rivers, beginning with Bonneville in 1938 and continuing as the remaining seven dams were authorized by Congress and constructed through the 1970's. This was an early recognition of how connected the region is and

the importance of water transportation for marketing agricultural and other products.

Over the years, PNWA has grown to represent members along the waterways of the Oregon and Washington coasts and in Puget Sound, but the Columbia Snake River System remains a foundational part of our advocacy efforts. This past year, Idaho Grain Producers Association joined our ranks, bringing our membership to over 150 strong. Our broad regional voice brings viewpoints from eastern and western Washington, Oregon, Idaho, and beyond, and our members include farmers, ports, terminals, towboat companies, rail lines, pilots, union labor, irrigation interests, and utilities. All of our members remain united by their belief in the

importance of infrastructure for how we grow and make things in the Northwest, and then get them to market.

An overarching theme within PNWA is how we strike the right balance when it comes to our water resources in the Northwest. This includes work to ensure we continue to build, grow, and transport goods while also protecting fish and other species. Our members live, work and raise their families in the Northwest and are committed to balancing a healthy environment with a healthy economy – we believe we can have both. There are few places in the region where this balance comes into question more than on the Snake River, and with regard to the Snake River dams.

As we have seen in recent years, the call for removing the Snake River dams has gotten louder. The facts about these four vital components of our river system, however, remain the same. The Snake River

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dams are critical for hydropower production, barging, irrigation, and recreation. They are also some of our most fish-friendly dams in the entire Pacific Northwest, with over 95 percent of juvenile salmon surviving passage at each one. The Snake River dams were built with fish passage structures, have never blocked fish, and the Army Corps has been making steady improvements to them ever since. Today, they have truly world-class fish passage facilities making them virtually transparent to the species, and serve as examples of what we hope can be achieved at other dams in the Northwest and beyond.

These improvements are helping boost returns, and there is good news to report. As of August 1st this year, sockeye returns at Bonneville dam were the best on record, and Lower Granite, the furthest inland dam on the Snake River, saw the 2nd highest sockeye returns.

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Adult chinook past Bonneville were at 120% of the 10-year average and Lower Granite has the 10th highest count by August 1st on record. This is great news for our fish and the region, and a tangible demonstration that fish are able to transit the river system in both directions.

The Snake River dams are also a critical component of the regional, national and global transportation system, linking our Northwest farmers with customers around the world. In any given year, nearly 10 percent of all U.S. wheat exports are transported by barge on the Snake River which is part of an integrated inland and deep draft navigation network that makes the

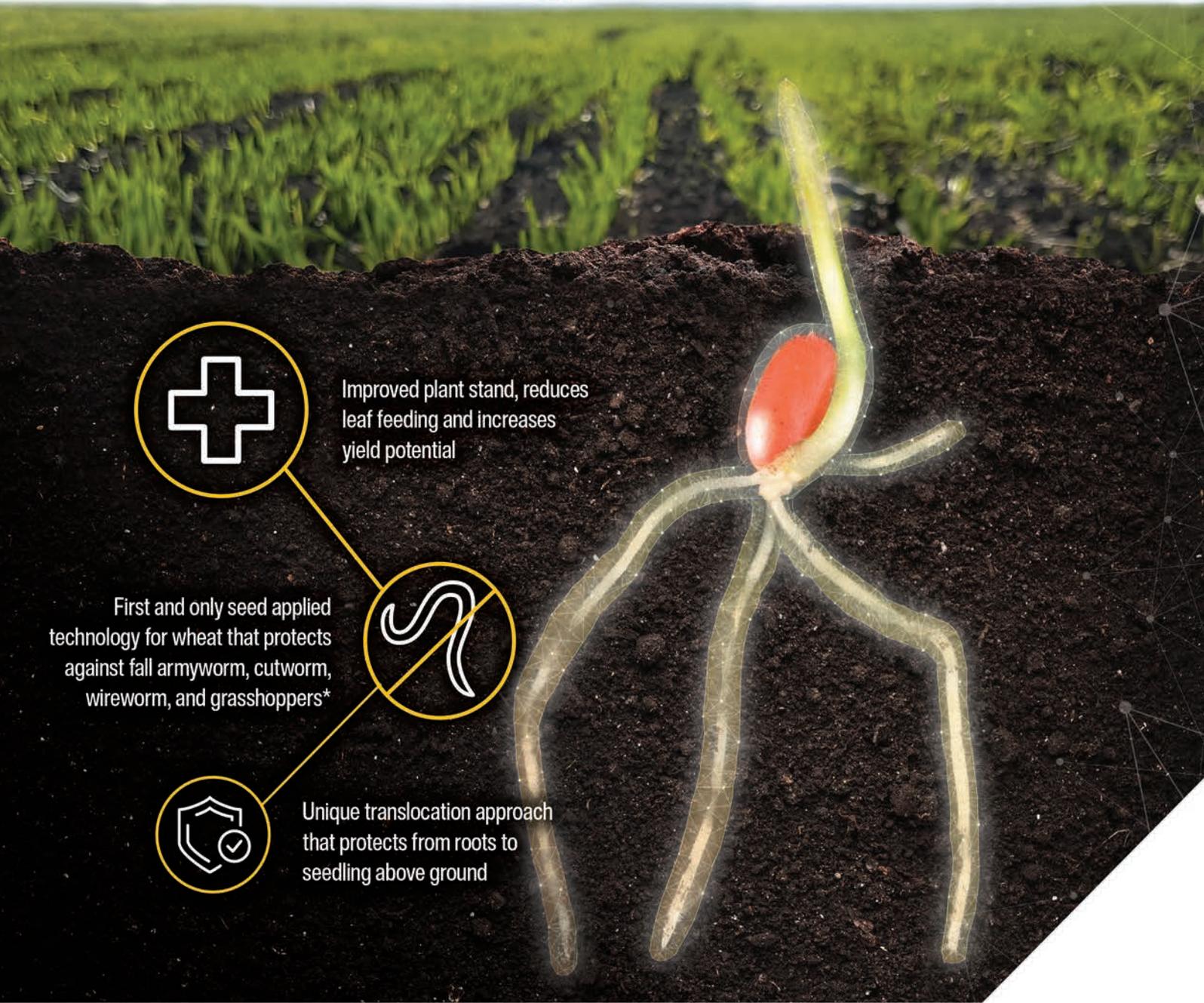
Columbia Snake River System the number 1 wheat export gateway in the nation, second in the nation for soy exports and the third largest grain export gateway in the world.

Barge transportation is the most efficient, safest, and least carbon-intensive method of getting our Northwest products to market. In 2020, the most recent year for which we have waterborne commerce data from the U.S. Army Corps of Engineers, cargo movement on the Snake River remained strong with over 4.2 million tons. To move the same cargo that was shipped by barge on the Snake River by rail or road instead, it would have required more than 42,000 rail cars or over 162,000

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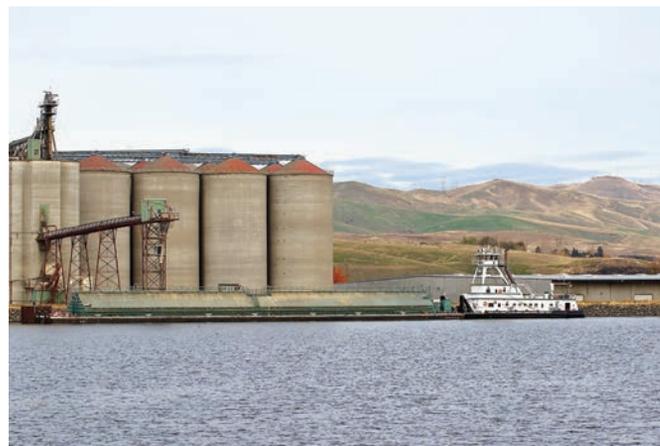


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semi-trucks. This conversion helps put things in perspective - imagine such an increase in trucks going through our Northwest communities or adding over 40,000 rail cars to our already congested rail system. When we think of it in terms of climate impacts, eliminating barging through the Snake River dams would mean an increase of over 5 million gallons of diesel each year, bringing with it over 1.2 million tons of CO2 and other harmful emissions into our sensitive air sheds.

The benefits of the clean, renewable and affordable hydropower produced by the dams also cannot be overstated. The Snake River dams produce enough average megawatts to power 800,000 homes in the Northwest and are part of a complex hydropower system that provides 90% of the renewable power generated in the Northwest. The stability of hydropower allows power from intermittent renewables, such as solar and wind, to be integrated seamlessly into the grid. As we work to meet the growing electricity needs in the region, the base load generation of hydropower becomes even more important, especially to meet the needs of our regional and national clean energy goals.

There have been many proposals over the years to breach the Snake River dams, with costs ranging up to \$33 billion and counting. That is a high price tag for what many scientists believe will not result in any meaningful increase in fish runs. It's also important to note that Snake River dam breaching only addresses four out of 14 runs of endangered salmon in the Columbia River Basin. This money could be much better spent truly making a difference for all listed fish throughout the Columbia River Basin – not just the runs on the Snake River.



PNWA believes the Pacific Northwest needs a basin-wide solution that balances the needs of all stakeholders. Efforts to restore salmon populations must include regional, comprehensive, wide-ranging approaches that look at what we can do throughout the lifecycle of the fish, including in the ocean. By working together we can ensure that funding and plans are in place for habitat restoration, improved fish passage, toxics clean up, culvert and derelict vessel removal, predator abatement, and increased fish passage where there currently is none. These actions are proven to work and are something all stakeholders can support. Working together in these ways will ensure that we are doing right by our fish and by the people that depend on the river for their livelihoods as they have done for generations. ■





Compliance 101 for Farm Bill Program Participation

BY GARRETT HOULE, IDAHO NRCS COMPLIANCE SPECIALIST

If you’ve driven enough miles in Idaho during the Spring, you’ve seen the variability of the *critical erosion period*. In the northern half of Idaho (Idaho County northward), the early unpredictable spring rains pour over semi-permafrost, erodible soils detaching sediment and transporting it throughout local watersheds. This process scours the landscape, leaving behind small narrow channels called rills and concentrated channels called ephemeral gullies. In the southern half of Idaho, spring is accompanied by average wind speeds of approximately 22 miles per hour with extreme wind events of over 50 miles per hour. Highly erodible, sandy desert soils and strong winds cause the transport of soil particles for miles, affecting visibility along roadways, threatening air and water quality, and diminishing the condition of fertile topsoil.

Wind and water erosion play an integral part in land transformation. However, certain farming practices can exacerbate soil erosion. Natural resource agencies, like the USDA-Natural Resources Conservation Service (NRCS), have a strong desire to minimize the

detrimental effects of soil erosion, not just to enhance air and water quality, but to also preserve the value of highly erodible farmland for future generations. Since the 1930s, NRCS has been a key advocate for promoting practices that improve soil health and minimize soil erosion. Farm Bill participants can do their part by understanding and acknowledging compliance provisions.

HELC provisions and the development of conservation plans/systems

The National Food Security Act Manual states that the purpose of Highly Erodible Land Conservation (HELC) provisions is to “remove certain incentives for persons who produce agricultural commodities on highly erodible land (HEL) without proper conservation treatment, reduce soil loss from wind and water erosion, protect the nation’s long-term capability to produce food and fiber, and reduce sedimentation and improve water quality.” To be in good compliance standing, any Farm Bill participant receiving USDA program benefits

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or looking to enroll in Farm Bill programs that will plant agricultural commodities on HEL fields will need to develop and maintain an approved conservation plan unless the Farm Service Agency (FSA) determines an exemption applies.

With NRCS guidance, plans are developed that will help combat erosion on cropland designated as HEL. All highly erodible soils have a soil loss tolerance, or T value, depending on soil type. Conservation plans are developed by using erosion prediction tools such as RUSLE2 (Revised Universal Soil Loss Equation) for sheet and rill erosion or WEPS (Wind Erosion Prediction System) to analyze if cropping systems and tillage operations exceed the soil loss tolerance of the predominant highly erodible soil map units in the fields. If a field is broken out of native vegetation (sodbust) after December 23, 1985, then the cropping system

cannot exceed 1T or one times the soil loss tolerance of the predominant HEL soil in the field. For fields that were broken out of native vegetation prior to 1985, soil loss tolerances are limited to 2T or two-times the soil loss tolerance of the predominant erodible soil in the field unless special circumstances apply.

So, what is highly erodible land and how are determinations made?

Highly erodible land is any land that has a high potential for erodibility based on its chemical or physical soil properties. Determinations are requested by FSA and are completed by NRCS. HEL determinations are completed any time a change is made to a tract of land, including planting agricultural commodities on land that has not previously had an HEL determination, field boundary changes, and splitting or combining of fields. When the NRCS technical determination is made, a client copy along

Here are some practices that can help address different types of erosion:

Sheet, Rill, and Wind Erosion: obliterates soil structure, depletes soil organic matter, transports nutrient-rich topsoil away from site, and can affect air/water quality. Loss of only 1/32 of an inch can represent a 5 ton/acre soil loss.

Causes:	Solutions:
<ol style="list-style-type: none"> 1. Lack of residue or surface cover 2. Long and steep slopes 3. Bad infiltration due to compaction caused by conventional tillage 4. Extreme precipitation events when live plant or residue cover is insufficient 	<ol style="list-style-type: none"> 1. Permanent vegetative cover or cover crops 2. Reduced tillage and residue management 3. Conservation crop rotations 4. Terraces 5. Stripcropping 6. Windbreaks 7. Contour farming 8. Herbaceous wind barriers

Ephemeral Gully Erosion: removes nutrient-rich surface soils, affects water quality due to sedimentation and transport of excess nutrients, obstructs roadways, fills drainages, washes out seed resulting in crop loss, and can potentially resort to a classic gully if left untreated.

Causes:	Solutions:
<ol style="list-style-type: none"> 1. Lack of residue or surface cover 2. Bad infiltration due to compaction 3. Disturbance to soil surface caused by conventional tillage 	<ol style="list-style-type: none"> 1. Reduced tillage and residue management 2. Conservation crop rotations 3. Permanent vegetative cover or cover crops 4. Terraces 5. Water and sediment control basins 6. Grassed waterways

with information about appealing the determination will be delivered to the appropriate parties.

Field labels of Not Highly Erodible Land (NHEL) and HEL are given based on the proportion of acreage containing erodible soil. If 33.3% or more of the total field acreage has HEL soils, or 50 acres or more of the field has HEL soils, then that field is determined to be HEL. Depending on geographical location and soil properties, land can be designated HEL for wind, water, or both.

So, does having HEL fields devalue your land? Absolutely not! With a proper conservation plan in place, HEL can be farmed profitably and as economically as any high-producing crop ground. I'll address a few conservation practices beneficial for erodible soils later.

Ephemeral gullies vs. classic gullies

Ephemeral gully erosion is generally common in northern and eastern Idaho, due to those areas greater spring rainfall. Ephemeral gullies typically recur in the same areas along the slope, are narrow in width and commonly much less than 18 inches deep and can be crossed by mechanized equipment. However, this type of erosion can present itself in an array of settings, from nearly flat rangelands to steep hillslope farmlands. Ephemeral gully erosion can be extremely dynamic, and what starts out as small rills in a crop field, can eventually become a deep-cut channel down to bedrock (classic gully) if not treated properly. It is important to understand the differences between a classic and ephemeral gully, because for purposes of Farm Bill compliance, all ephemeral gully locations that are within, or part of a HEL field are required to be treated as part of an approved conservation system.

In general, classic gullies are found in established drainageways, larger in breadth than an ephemeral gully, 18 inches or deeper, and they cannot be traversed by farm equipment. It's important to note that classic gullies are not required to be treated to meet HELC provisions, as these areas are not technically considered cropland acres, and through the assistance of FSA, should be excluded from acres involved in agricultural commodity crop production. Despite this, classic gullies are still a resource concern.

Farm Bill compliance and USDA program participation

Producers interested in participating in USDA programs need to be aware of the compliance provisions. Then, they need to contact their local FSA



office to take care of required paperwork. This includes the HELC and Wetland Conservation self-certification form (AD-1026). Once the initial paperwork is filed, it will only need to be updated when there is a change to the farming operation.

Each year a random selection of tracts is chosen at the national level to be reviewed for compliance. These Food Security Act compliance reviews are a way for NRCS to assess the compliance status of producers participating in voluntary USDA programs.

So, what if there is a compliance issue? If the results of a status review or NRCS technical determination suggest that a participant is not actively applying an approved conservation plan due to a lack of control of erosion, then the person requesting benefits may be found ineligible to participate in USDA programs or risk having to refund benefits received during the years of the compliance violation(s). In addition, the 2014 Farm Bill linked HEL compliance to federal crop insurance. This means a producer who has a compliance violation may be ineligible for premium subsidies. Farm Bill participants found to be in violation but determined to be acting in good faith, may request to regain eligibility through their local FSA office. If the request is granted, the participant will have a specific timeframe to work with NRCS to develop a plan to remedy the violation(s). It is critical to note the compliance status of a tract of land and maintenance of conservation plans is the responsibility of the owners and operators affiliated with the farm.

The direct and indirect effects of conservation compliance

Conservation plans in support of HELC provisions are developed to mitigate or reduce the rate at which

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different types of erosion happen in a cropland environment. Practices are written in the plan that will ultimately treat the resource concerns but also protect the sustainability of farmland for future agricultural production. There are several resource concerns and conservation practices associated with different types of erosion. Often, it takes a combination of practices to positively address it. For example, a hypothetical cropping system consisting mainly of low residue crops and conventional tillage may be determined to exceed the soil loss tolerance of a HEL soil for wind erosion. In this case, planning efforts could support a greater crop diversity in the rotation including legumes and spring/fall cereal grains. This in combination with tillage and residue management adjustments would suffice to bring soil loss values down to reasonable thresholds. Over time, conservation plans can help producers increase soil organic matter, reduce compaction, and increase plant vitality.

In the case of ephemeral gully erosion, high residue crops and minimization of soil disturbance through reduced tillage will yield better water infiltration, lessening surface runoff. Depending on the land's slope and soil properties, a grassed waterway to build soil structure or a structural practice like a water and sediment control basin (WASCOB) might be suggested to route water sub-surface reducing the erosive impacts of high velocity surface flow. There is a common misnomer, though, when it comes to ephemeral gully erosion that tilling or discing active gully channels will suppress or slow the rate of erosion. The outcome is quite the opposite, as tillage further loosens the surface profile of the soil causing increased sediment detachment. Farming through gullies also causes undue stress on tractors and combines over time. NRCS does not suggest, nor does it consider tillage a valid conservation practice to treat ephemeral gully erosion. In fact, the best way to stabilize an active gully is to maintain a living root in the soil, minimize disturbance to the soil surface, and when it must be disturbed, keep adequate residue to cover the soil, whether it be stubble or mulch. There is no "one size fits all" approach to a conservation system. NRCS must look at the complete picture and think systematically to make the right recommendations to a producer.

For further information on conservation practices suitable for erosion, seek technical assistance from



your local NRCS field office or contact your area Compliance Specialist to discuss what options are most suited to treat a compliance deficiency.

Farm Bill compliance acts as an accountability measure, and although discussion of the topic is often dreaded, it is important for those who voluntarily participate in USDA programs to know that they will be held to a standard to combat soil erosion and do their part to uphold the compliance provisions of the Food Security Act. As conservationists, NRCS staff understand the hardships faced by farmers, and we commend those taking the noble action to participate in USDA programs and operate within the confines of FB compliance. Whether you are a generational Idaho farmer or an employee at a NRCS field office, we can all agree that air quality, water quality, and soil erosion are variables in constant need of attention to maintain healthy ecosystems on this planet. Conservation compliance is a way to do just that: buffer the interactions between man and land to preserve Idaho's diverse natural resources for future generations.

You can learn more about conservation compliance at nrcs.usda.gov and searching for Conservation Compliance for Highly Erodible Lands or by visiting your local USDA Service Center.

Idaho NRCS HELC contacts:

Danny Morrison, Compliance Coordinator, Boise State Office, Daniel.Morrison@usda.gov

Garrett Houle, Area West Compliance Specialist, Boise State Office, Garrett.Houle@usda.gov

Nick Dumke, Area East Compliance Specialist, Pocatello Office, Nicholas.Dumke@usda.gov ■

Harvest in Power County



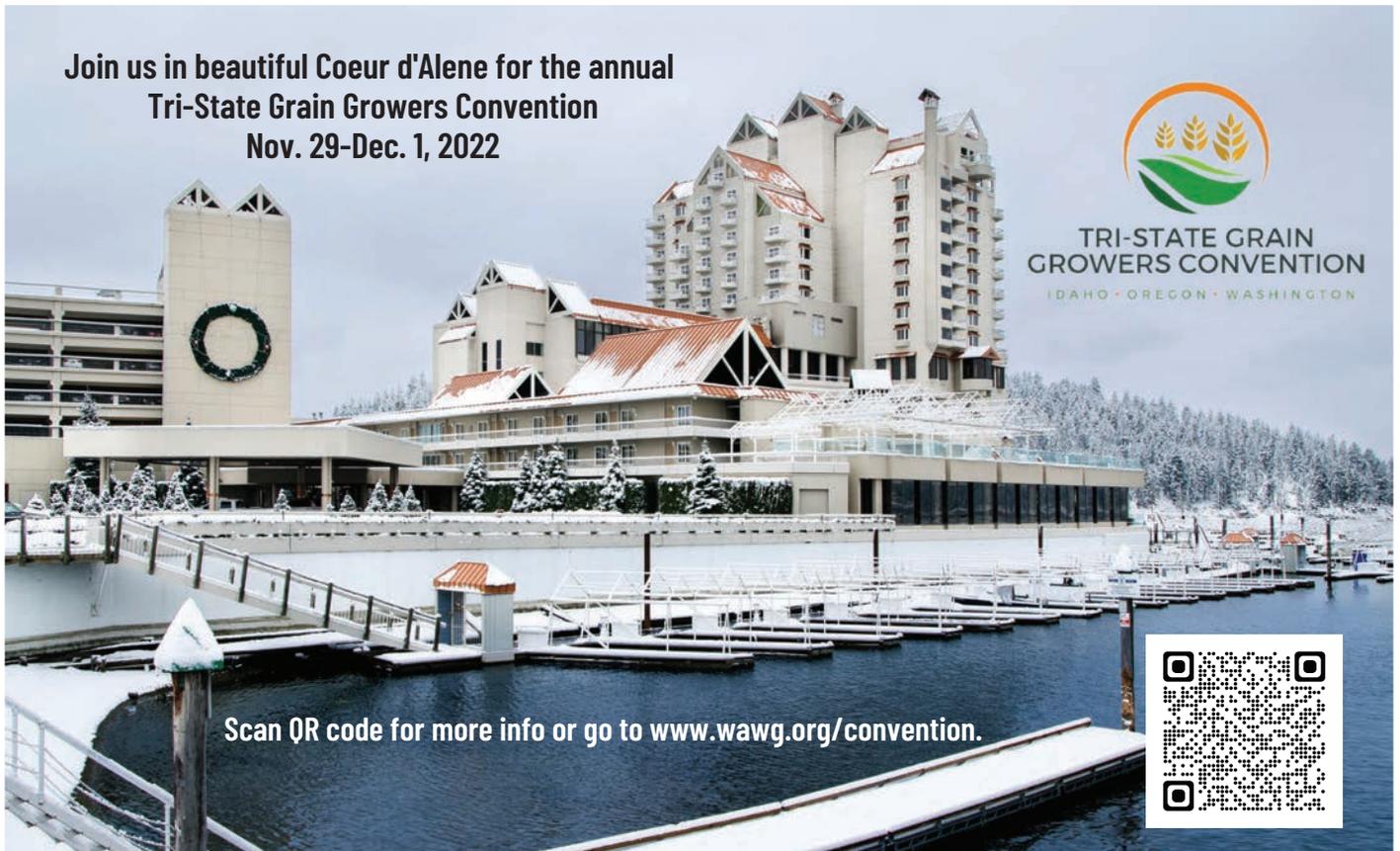
Photos by Cory Kress, Rockland.



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Putting Carbon Credits to Work for You

BY GARRETT DUDLEY, RESEARCH MANAGER, IDAHO WHEAT COMMISSION

If you're growing crops or pasturing animals in Idaho you've likely heard about a new opportunity to sell carbon credits. You may have been approached directly by a carbon credit company or maybe you have a neighbor who has sold or is selling credits already. Regardless of how you have heard about selling carbon credits, the potential for carbon storage on your own farm exists.

Cover cropping, no-till farming practices, and nitrogen management are the most common practices intended to capture carbon (CO₂) from the atmosphere and increase carbon levels in your soil profile. Tapping into that potential are the carbon market buyers – those organizations seeking to offset their own emissions through your field's capacity to store soil carbon.

In a Carbon Markets Tell-All Panel Session at the 2022 Commodity Classic this spring, Nutrien Ag Solutions Senior Sustainability Manager Sally Flis expressed the challenges of implementing a new carbon program. "Carbon markets are a complicated concept that is constantly changing, and the requirements are different depending on the practices you want to implement," she said of Nutrien's program, which enrolled 225,000 acres in 2021. "We really try at Nutrien to have this be a whole acre solution and generate the outcomes [growers] want."

On the same panel discussion, Janette Veazy-Post, Manager at Lamb Farms Dairy, expressed her early skepticism about carbon credit payments. "It seemed kind of silly to me that [companies] were just going to pay us for doing practices that we were already doing." Across 13,000 acres in New York and Ohio, Lamb Farms has already implemented sustainability practices that include strip tilling, cover cropping, and building anaerobic digesters to support the dairy. After some consideration, Lamb Farms enrolled in the 2021 carbon credit pilot program through Nutrien Ag.

Idaho growers have expressed similar concerns. "I'm a firm believer in the promoted practices, but this isn't a panacea for climate change, and I think more focus needs to be given to utilizing CO₂ as a raw material. Early adopters of carbon contracts may benefit, but I'll

risk that to see how the market develops and how things work out," said "Potlach Joe" Anderson, former Idaho Wheat Commissioner from District 1. "Much of what we've already been doing is beneficial for both our farms and the environment."

Despite the mixed feelings about carbon sequestration on farms, one Idaho Wheat Commissioner can confirm he's willing to jump in. "I decided to participate in the Agoro carbon program because it was another market I could take advantage of. I believe that, as growers, we will eventually have to carry these costs through increases to our input prices," said Cory Kress, District 5 Commissioner. "I'm skeptical of validation methods that rely solely on soil testing as I've seen these can be highly variable, but they essentially paid me for implementing practices I was already planning to do on my farm." Across 8,000 dryland acres of canola, wheat, and peas, Cory says the sign-up bonus helped sway him towards Agoro's program.

Regardless of one's opinion of carbon credits, several companies have now entered the carbon space, and most of them have expanded their marketing into Idaho. The Agoro Carbon Alliance, owned by Yara Inc., has recently announced their goal of expanding to one million acres of carbon farming for 2022. The TruTerra LLC Carbon Program, owned by Land O'Lakes, has just announced it will be adding a team of agronomists to support growers in implementing the soil health practices promoted through its carbon capture initiatives; TruTerra reported that their grower payments totaled \$4 million in 2021. Indigo Carbon, another one of the early leaders in the carbon credit space, announced in late June of 2022 that it has 20,000 tons of soil carbon credits available to buyers. And the company Nori has, perhaps, one of the most attractive sign-up programs available for growers with a unique payment system that allows four years of grower arrear payments.

Idaho growers could consider carbon sequestration as a completely new farm product they have available for sale. But just like any bushel of wheat, bale of hops, or sack of potatoes, you wouldn't take your carbon credits to market without verifying you had a quality product. An advisable first step in considering



a carbon credit sale would be to visit the United States Department of Agriculture COMET-Farm website, a carbon accounting system developed by the Natural Resources Conservation Service at www.comet-farm.com. While all carbon credit buyers are verifying soil organic carbon a little differently, the COMET-Farm accounting tool may provide localized verification of carbon storage based on changing or adding a practice to your operation. In a rapidly developing market that has been described by many as “the wild west”, a little reassurance from a neutral party may be welcome. The COMET-Farm tool is free to use and does not require registration of any kind.

Of course, you’d also be keen to take a close look at that contract. Most require an act of additionality -- adding a carbon sequestration practice that did not exist prior to contract signing -- but all vary in duration. Some programs offer the flexibility to sign up on a per acre basis with no long-term commitment, while others offer 10-year contracts with a one-year grace period

for practice implementation. If you’re not a fan of model-based algorithms that rely solely on a projection of carbon storage, you might want to select a carbon contract that relies heavily on direct soil sampling. Most companies are implementing a combination of the two verification methods.

Daunting as new markets seem, consumer sentiment is the fueling engine of carbon credits. Our carbon end-users are companies such as JP Morgan, The North Face, Barclays, Cemex, Delta Airlines, and even Shell Oil – organizations that seek offsets to both attract customers or mitigate their own emissions. Companies pledging to be carbon net-zero by 2050 are responding to consumer preference; they’re signaling down the supply chain that their customers value these attempts to mitigate climate change. Whether or not Idaho farmers choose to participate in these programs is a personal choice, but sales of carbon credits may provide a unique opportunity to highlight agriculture’s role as a solutions-based industry. ■

Idaho Wheat Commission Names New Executive Director

The Idaho Wheat Commission (IWC) is pleased to announce the hiring of Britany Hurst Marchant to serve as Executive Director. She will succeed Casey Chumrau, who has been in the role since 2020.



Marchant is well known within the Commission, having served as the IWC Communications and Grower Education Manager since December of 2017. Prior to joining IWC, Marchant spent more than six years with the Idaho Cattle Association, where she served as Communications Director, lobbyist, and Environmental Policy Director.

“We are excited to have Britany move into the role of Executive Director for the Idaho Wheat Commission,” said IWC Chairman Clark Hamilton. “While we had a pool of excellent candidates to choose from, Britany was the obvious choice for the position. She brings

a wealth of knowledge to the table with her previous work with the Commission. Her passion for agriculture in Idaho, knowledge of the wheat industry, and her professional experience and connections made her the right choice for the job. We look forward to the future and great things to come with Britany at the helm.”

Marchant grew up in the Mini-Cassia area of southcentral Idaho. She attended Boise State University where she earned a bachelor’s degree in History and Political Science.

“I am humbled to have the support of the commissioners and excited for the opportunity to step into this position and build on the success that Casey has established,” said Marchant. “I have been fortunate to have excellent mentors and examples, including Casey Chumrau, and look forward to continuing the mission of the Wheat Commission and implementing ideas and programs to benefit Idaho’s wheat-growing families in the future.”

Marchant will assume her new role on September 1, 2022. ■



Inadequate Zinc Constricting Idaho Wheat Crops

BY THE MCGREGOR COMPANY

Wheat growers in Idaho are losing a surprising 3.5-4 bushels per acre every year due to widespread zinc deficiency that results in slow emergence and a lack of seedling vigor. While most now recognize that zinc is widely deficient in the soil profile, the larger issue of how to solve it still remains. “Because the soil is deficient, our seed stock being produced is going to be deficient as well,” explains Logan Redden, Seed Care Account Manager with The McGregor Company, “Without seed-applied micronutrients, no matter where we plant it back, the seed is at a disadvantage.”

When it comes to zinc availability in the soil, pH and temperature at planting can significantly hinder the seed’s ability to access adequate levels of zinc. Cooler soil temperatures in early spring planting, or under irrigation, will limit zinc availability. Similarly, soil profiles with a pH of 7.5 or higher will also see significantly reduced levels of available zinc.

As the main component in the plant growth hormone, Auxin, zinc is not only critical for plant health early in the plant’s life – it is required to initiate and stimulate germination. “Think of zinc as a forklift moving sugars to the plant embryo,” says Cat Salois, Director of Research and Technology for The McGregor Company, “Without access to zinc at the time of germination, sugars can’t cross the membrane layers to the embryo. The consequence of this is weakened stands and slower emergence.”



Salois notes that, “Roughly 70% of the zinc required by cereal grains is demanded within the first 30 days of life.” The best solution to zinc deficiency therefore lies in giving the plant immediate access to zinc at the time of germination. “Without supplying the micronutrient needs at germination, even the best varieties will struggle to reach their full yield potential.” explains Redden.

But not all zinc products are created equal when it comes to delivering performance as a seed treatment. The most common forms – zinc EDTA, zinc oxide, and zinc sulfate – each impact the plant differently. Undeniably, research shows that the slow-release nature of an EDTA chelated nutrient is not the appropriate tool to meet this large early demand. EDTA products such as StepUp and Pro-Ceed are “late to the party,” says John Hobson, Director of Seed Care at The McGregor Company, “EDTA





chelated nutrients are designed to be accessible in small amounts over the growing season and cannot supply a large peak demand.”

Instead, recent research points to zinc oxide as the superior seed-applied nutrition source. New MicroFuze Technology, found exclusively in The McGregor Company’s SeedStart line of products, delivers zinc oxide particles at such an advanced level that “the nutrient accessibility is significantly enhanced,” says Jamie Slocum, Seed Care Account

Manager with The McGregor Company, “Immediate access to zinc at the time of germination promotes rapid emergence and root development, which leads to earlier access to the additional nutrient package placed below ground, and gives the plant a 1-2 punch at nutrient availability to carry through the plant life.”

With the current landscape of commodity prices and input costs, it is more important than ever for growers to focus on early stand establishment to achieve maximum yield. “Better stand establishment in the fall leads to more efficient use of fertilizer and better water retention in the soil profile. With high fertilizer costs and ongoing drought conditions, these are two of the most pressing issues in our region.” says Redden. “As we start evaluating seed varieties and seed treatment offerings for fall planting, we need to make sure we have adequate disease protection for the seed.”

Independent studies have proven SeedStart to consistently have superior plant uptake efficiency during the first few weeks of life compared to both EDTA and zinc

sulfate. SeedStart with MicroFuze Technology “allows the zinc particles to more densely affix directly on the seed, and thus be more readily available at the time of germination,” explains Salois. In addition, EDTA zinc delivers 83% less zinc per pound than SeedStart – and at an average increased cost of \$18 per pound of zinc. In essence, growers using seed treated with any zinc form other than SeedStart with MicroFuze Technology are paying more for less performance.

With the current landscape of commodity prices and input costs, it is more important than ever for growers to focus on early stand establishment to achieve maximum yield. “Better stand establishment in the fall leads to more efficient use of fertilizer and better water retention in the soil profile. With high fertilizer costs and ongoing drought conditions, these are two of the most pressing issues in our region.” says Redden. “As we start evaluating seed varieties and seed treatment offerings for fall planting, we need to make sure we have adequate disease protection for the seed. Once those needs are met, the best return on investment for growers is the use of seed-applied micronutrients with SeedStart.”

Not all zinc products are designed to deliver performance on the seed piece and choosing the right zinc product to accomplish this task is critical. SeedStart is intentionally designed to optimize nutrient availability by adequately placing zinc nutrition at the right time and in the right place to optimize efficiencies for both the farmer and the plant. Powered by unique

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MicroFuze Technology, SeedStart is the only seed-applied zinc nutrition that is readily accessible at germination, proven through research, and loaded with 4X more zinc. For additional information on superior seed care, visit www.mcgregor.com or contact (509) 397-4355.

The McGregor Company serves growers in Washington, Idaho and Oregon with the seed, crop inputs, equipment, research, and advice needed to raise healthy, sustainable crops. Our customers throughout the Inland Northwest benefit from over 135 years of McGregor expertise and consumers worldwide rely on the crops harvested by these dedicated growers. ■



Joseph Anderson Reappointed to Fill District 1 Commission Seat

Joseph “Genesee Joe” Anderson, Lewiston, has been reappointed by Governor Brad Little to retain his position with the Idaho Wheat Commission representing District 1 effective July 1, 2022.



Joe is co-owner of Anderson & Sons, a diversified family farm in Latah and Nez Perce counties, growing winter wheat, spring wheat and barley, pulse crops, and oilseed crops. Joe was first appointed to the Idaho Wheat Commission by Governor C.L. “Butch” Otter. Throughout his first term, Joe served as vice-chairman and chairman and hosted trade teams from South America and Asia, including two teams from Indonesia in 2018. Joe participated in a seven-country wheat quality export tour in 2014, visiting Taiwan, South Korea, Japan, Indonesia, Thailand, China, and the Philippines. He also traveled to Taiwan and Vietnam with Idaho Speaker of the House Scott Bedke for a Governor’s Trade Mission in 2017.

“It has been a privilege to serve wheat farmers in Idaho as an Idaho Wheat Commissioner,” said Commissioner Anderson. “As with most positions, we are enriched by the people we meet and serve with, as well as what we can learn along the way.”

Anderson earned a Bachelor of Science degree in Ag Economics and a Bachelor of Science in Ag Mechanization from the University of Idaho. He is a 1994 graduate of Leadership Idaho Agriculture and a graduate of the Wheat Industry Leaders of Tomorrow program through the National Association of Wheat Growers.

Genesee Joe has been involved in a number of leadership positions. Prior to his appointment to the Idaho Wheat Commission, he completed a five-year term on the Executive Board of the Idaho Grain Producers Association (IGPA) and as president of IGPA in 2012. He served as a board member of the Genesee Union Warehouse and was an associate supervisor on the Latah Soil and Water Conservation District. Joe is currently a member of the Latah County Grain Growers, a board member for U.S. Wheat Associates, and a board member for the Port of Lewiston. He represents the Port of Lewiston on the City of Lewiston’s Urban Renewal Agency. ■

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Looking Back, Looking Forward: Ten Years of CRISPR

BY BRITANY HURST MARCHANT

For the last decade, CRISPR-Cas9 has enabled plant breeders and scientists to develop improved varieties of common crops in an easier, faster, and more cost-effective way. Refining genetic properties and improving genetic traits such as yield and disease tolerance allows a dwindling number of farmers to feed a growing global population. While there are no GMO wheat varieties grown commercially in the United States, using CRISPR technology, scientists have been able to successfully produce wheat varieties that are resistant to herbicides and drought, produce higher yields on dryland farms, and reduce lodging when grown under irrigation.

What is the difference between CRISPR and traditional breeding?

There are four primary technologies used to improve crops. Zinc Finger Nuclease (ZFN) is the oldest, developed in the 1990s. While effective, ZFN-based improvements take a very long time to produce results, are laborious, and have the highest rate of producing unintentional results.

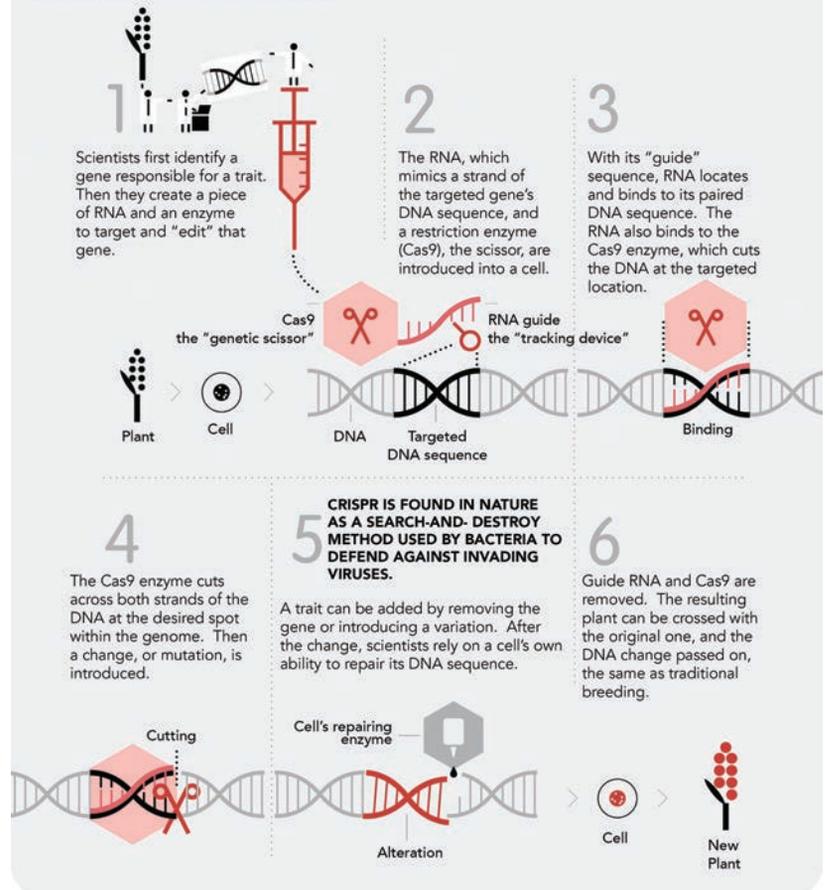
Transcription Activator-like Effector Nucleases (TALENs), developed in 2009, has a similar engineering structure and function to ZFN but is more accurate and more affordable than its ancestor. Like ZFN, TALENs is very time-consuming and frequently produces off-target results.

RNA Interference (RNAi) works by attacking messenger RNA carrying instructions for the targeted genetic trait and turns the trait on or off. RNAi has been used in Simplot potatoes and to develop insect- and disease-resistant crops. RNAi is also the technique Bayer is using for a spray to combat weeds that have developed resistance to glyphosate, which neutralizes the resistance in those weeds.

CRISPR is much more affordable, accurate, and faster than ZFN or TALENs, which makes it attractive for agricultural applications. CRISPR shaves years from the process of methodically crossing generations of plant species to eventually get the desired trait.

What is CRISPR?

An alternative of transgenic engineering (GMO), CRISPR is a gene-editing technique that is applied to selective breeding. Scientists "edit" a plant's genome to get desired traits. This is how it works.



Using a natural "molecular scissor" technique, Cas9, scientists cut a section of DNA and either reconnect the loose DNA ends together, eliminating the undesired trait, or insert DNA with a desirable trait into the cut strand. CRISPR-Cas9 is so precise that scientists can cut any DNA at any predetermined location. For example, the DNA trait that determines the height of wheat can be eliminated and replaced with DNA that keeps a specific wheat variety short enough to mature under wheel lines.

Today, hundreds of researchers and development labs are testing CRISPR to solve food-related concerns for growers and consumers, including reduced-gluten wheat that could be tolerated by those with sensitivities



CRISPR is much more affordable, accurate, and faster than ZFN or TALENS, which makes it attractive for agricultural applications.

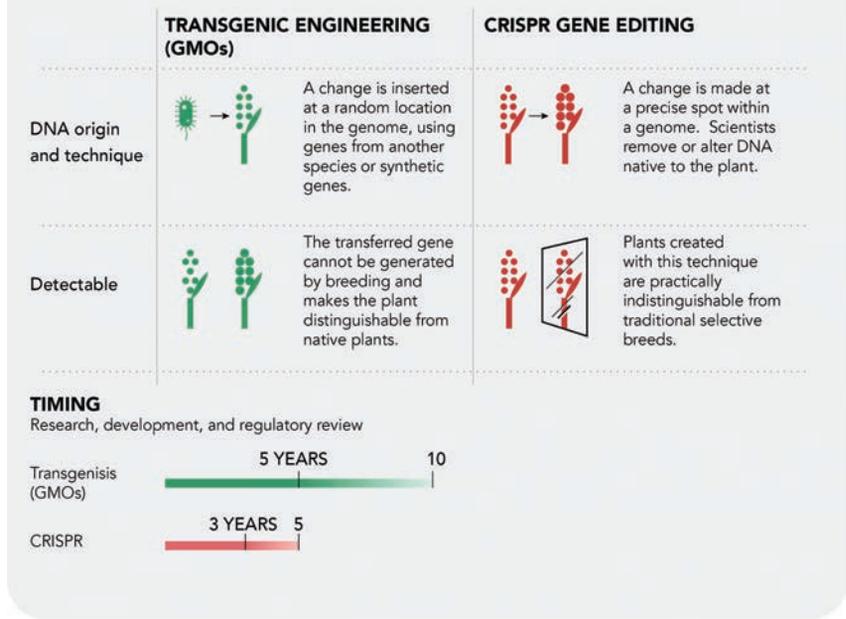
and intolerances. Because CRISPR crops do not contain foreign DNA – DNA from viruses or bacteria – the United States Department of Agriculture (USDA) and the Food and Drug Administration (FDA) do not classify CRISPR crops as genetically-modified organisms, or GMO.

GRAPHICS: National Geographic

Sources: britannica.com/science/gene-editing; geneticliteracyproject.org/gmo-faq/what-are-crispr-and-other-new-breeding-techniques-nbts/; nationalgeographic.com/environment/article/food-technology-gene-editing

Gene Editing Versus Genetically Modified Organisms

Likened to accelerated breeding, CRISPR's relatively fast results and an open regulatory environment are driving scientific and commercial interest.



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POV: The IWC Domestic Marketing Tour

BY MARGARET KRAUSE, ASSISTANT PROFESSOR AND SMALL GRAINS BREEDER AT UTAH STATE UNIVERSITY

The harsh tones of my alarm startled me out of bed at 5 AM on the morning on June 13th. It was the first day of the Idaho Wheat Commission’s Domestic Marketing Tour, and I needed to get up to the Farm Bureau in Pocatello by 8:30 AM to catch the bus on time. As I sipped a strong cup of coffee and drove north through the sagebrush, I felt a mix of both excitement and a few nerves in anticipation of the two-day tour. For weeks I had been looking forward to the tour for the opportunity to learn more about the local industries that play integral roles in the wheat supply chain in southeastern Idaho. However, accompanying this excitement were the all-too-familiar nervous jitters I’d felt several times in the preceding months.

I had arrived in Utah less than a year earlier to take over the small grains breeding program at Utah State University. Originally from Minnesota, I’d never been to Utah until the day I disembarked the plane at the Salt Lake City airport to move there, since my job interview had been over zoom during the pandemic. I hadn’t visited Idaho either, and I knew that getting myself integrated within the wheat community in Utah and Southeast Idaho would be critical to making sure that the USU small grains breeding program is meeting the needs of the growers as well as possible. The Domestic Marketing Tour provided a prime opportunity to get to know growers, yet, as a newcomer to the region with plenty of ground to make up, I’d sometimes worried whether I’d be able to make those inroads successfully.

Upon reaching the Farm Bureau in Pocatello, Casey Chumrau, Britany Hurst Marchant, and Garrett Dudley from the Idaho Wheat Commission welcomed me aboard the bus. I’d had the pleasure of meeting each of them previously at the Tri-State Growers Convention in Spokane in December. On the bus, each of us introduced ourselves. Commissioner Cory Kress was another familiar face, as he had been involved in the interview process for my position at USU. One of the new growers I met was Doug Fuhrman, who farms closer to my neck of the woods in Pocatello Valley, Idaho. Our breeding program typically grows a dryland trial in the same area in collaboration with Utah grower Reed Stokes, so I was grateful to have the chance to get to know someone else who farms in the region. Thanks to the welcoming atmosphere and a mixture of both



Domestic Marketing Tour group at Bayer phosphorus mine

new and familiar faces, my nerves began to subside as the bus pulled out of the parking lot. We were off on our first day of the tour, which included visits to the Savage Railyard and the Idaho Grain Inspection Service in Pocatello, Idaho, as well as the Pepperidge Farms manufacturing facility in Richmond, Utah.

At each stop along the tour, our hosts provided an overview of their respective operations and explained the various roles they play within the wheat supply chain. For example, at the Savage Railyard we learned about a current challenge that U.S. agricultural exporters are facing. As a result of the pandemic, pent-up demand in the U.S. for goods manufactured in Asia has driven shipping carriers to reject U.S. agricultural exports, opting instead to ship empty containers back to China to shorten the turnaround time at the port. Since roughly



Loading a boxcar at Savage terminal

85% of the wheat produced in the Pacific Northwest is exported to Asia, this situation has made it difficult to deliver the product to the buyer.

Our hosts also provided various demonstrations of their operations. At the Idaho Grain Inspection Service, we were shown how shipments of wheat are graded based on various metrics concerning the quality of the grain, such as test weight and protein. Some of the equipment and protocols were similar to those that my group and I use in the USU small grains breeding program to identify promising breeding lines for release as new varieties, though I was also able to take home a few new ideas for other grain qualities we can be keeping an eye on to improve our breeding material.

At Pepperidge Farms, we were able to see how wheat is used to produce a couple of my favorite snacks: Goldfish crackers and Chessmen butter cookies. The scale and throughput of their manufacturing facility was nearly unfathomable, putting into perspective how Idaho's wheat reaches the pantries of households throughout the U.S. and beyond. The group learned that every package of Pepperidge Farm products is stamped with a short code in small print. If it contains the letters "RU", that product was produced in Richmond, Utah with Idaho wheat.

On the second day of the tour, the group visited the Bayer Blackfoot Bridge Mine near Soda Springs, where phosphate ore is extracted to produce fertilizers and other agrochemicals, and the Grain Craft flour mill in Blackfoot. Each of the tour stops also presented the chance for both the growers and hosts to ask questions of each other.

Overall, the tour provided an outstanding educational opportunity for growers to learn about how their wheat is transported, processed, and utilized beyond the farmgate. Equipped with this information, growers have the better chance to organize their farming operations to best meet the needs of the industry as well as a greater ability to anticipate and overcome challenges connected to the supply chain. Furthermore, the tour provided the growers and the Idaho Wheat Commission with an opportunity to strengthen their connections with the domestic wheat supply chain in the region.

For me, there was a particular aspect of the two-day tour which I viewed to be equally if not more enriching and important than the tour stops themselves. As we traveled down to Richmond, up to Soda Springs, and back to Pocatello, the growers had plenty of time to rub shoulders with one another on the bus or over lunch or

Continued on next page

Continued from previous page

dinner to compare notes on production strategies and discuss challenges, thereby building connections with each other. Listening in on these conversations was also a prime opportunity for me to learn more about wheat production in Southeast Idaho and the biggest needs of the growers in this region. Grower Adam Young of Blackfoot explained to me how his irrigation system is set up and showed me how he's able to monitor the system through a cell phone app. Grower Ryan Searle of Idaho Falls told the group about how he's been able to add value to his farming operation by running a corn maze and sunflower patch open to the public. I also heard from growers who produce dryland soft white winter wheat near the Utah border. While the USU small grains breeding program is focused primarily on hard red winter varieties, it was through these conversations that I learned there would likely be an interest in the results of soft white variety trials if my program were to conduct them in the region. I have since been working to source seed of several public and commercial soft white winter varieties to test in our dryland trials in Box Elder and Cache counties this fall.



As I said goodbye to the group and drove south towards Utah after the end of the tour, I reflected on how I've often felt like attending these types of events – the Domestic Marketing Tour, the Tri-State Growers Convention, the University of Idaho Extension Field Day in Aberdeen, etc. – is perhaps one of the most important things I'll do all year because of how much I'm able to learn about the industry and connect with growers. Although my breeding program only plants a handful of acres compared to the growers' thousands, we plant them to several thousand varieties of wheat, so I can relate to how difficult it can be step away for a day or two. Despite this, I would strongly encourage growers to take the time out for this outstanding educational and networking opportunity. Those who are interested should contact Britany at the Idaho Wheat Commission (britany@idahowheat.org) regarding future Domestic Marketing Tours.

Finally, I'd like to add a quick word to the Idaho Wheat Commission and the Idaho growers I met on the tour and at other events this past year. I'm so appreciative of how quickly and warmly you have welcomed me into the Southeast Idaho wheat community. After a year of what has sometimes felt like drinking from a firehose, I'm starting to get my feet under me in the USU small grains breeding program, and I'm excited about testing some of our up-and-coming advanced breeding material in the University of Idaho Extension Variety Trials this next season. Our breeding program exists to serve you,

so I would like for our breeding activities and objectives to be completely driven by your needs. Don't be afraid to give me a ring, send me an email, or stop by to see us in Logan if you have ideas for what you'd like to see out of our breeding program (e.g., testing soft white winters in our regional trials). Thanks again, and

I look forward to hopefully meeting more of you in the months ahead.

Office Location: AGRS 327

Phone: 435-797-1212

Email: margaret.krause@usu.edu 

Wheat Marketing Center Appoints New Executive Director

The Wheat Marketing Center has selected a new executive director to manage its research and education operations. The Board of Directors, headed up by WMC Board Chairman Bill Flory (Idaho Wheat Commission), and the Search Committee, chaired by Ron Williams (Columbia Grain), announced the appointment of Mike Moran during the March 2022 WMC board meeting in Portland.



Mike Moran

“Mike has extensive experience working with wheat quality from managing bakeries to running a farmer owned flour brand and he understands the importance of quality. Mike also has experience working with WMC in its early years as a client, which provides him a good understanding of the customers’ needs.” said Williams. “His skills and experience, combined with the talents of the outstanding WMC staff, will carry the Wheat Marketing Center to a new level of excellence.”

“Promoting U.S. wheat by demonstrating the importance of quality is the central mission of WMC, for farmers, for millers, and for food manufacturers,” continued Flory. “Mike understands and promotes our shared values, and we are excited to have his experience as a leader and promoter of wheat and wheat quality.”

Moran took the helm on April 1. “Having worked with WMC as a baker and farmer representative, I am honored to have the opportunity to join a team with such impeccable integrity.” said Moran. “The challenges facing American farmers are complex in a dynamic and competitive global environment. The Wheat Marketing Center’s focus on objective research and education presents the best opportunity to guide

and promote U.S. wheat as a leader in quality and value for customers globally.”

Mike’s appointment fills the vacancy left by the retirement of his predecessor, Janice Cooper, in June of this year. Janice Cooper was the Managing Director of the Wheat Marketing Center (WMC) in Portland, Oregon, a position she held from November 2015 to June 2022. Prior to joining WMC, Janice served for six years as Executive Director of the California Wheat Commission and earlier managed the California Association of Wheat Growers. In addition to her experience in the wheat industry, Janice has a broad background in business development and trade policy in the banking, high tech, and renewable energy sectors. Janice started her career in Washington, D.C. as a staff member in the U.S. Senate. She returned to D.C. later as the Trade Representative for the State of California.



Janice Cooper

Janice was recently re-appointed to the Grain Inspection Advisory Committee, the private sector group appointed by the U.S. Secretary of Agriculture to advise the Federal Grain Inspection Service on its programs and priorities. She is also a member of the Export Council of Oregon, which advises the U.S. Department of Commerce and helps promote U.S. exports.

Janice’s contributions to the wheat industry are invaluable.

The Wheat Marketing Center is dedicated to improving the well-being of present and future generations of U.S. wheat farmers and worldwide consumers by conducting wheat utilization research projects and delivering dynamic educational programs. 



Wheat Foods Council: 50 Years of Promoting Wheat Foods at Home

BY BRITANY HURST MARCHANT, COMMUNICATIONS AND GROWER EDUCATION MANAGER, IDAHO WHEAT COMMISSION

In the early 1970s, carbohydrates were under attack. The public perception was then, as it is now, that complex carbohydrates were unnecessary fillers that made wheat foods fattening. The Wheat Foods Council (WFC) was formed in 1972 to combat misinformation and promote the use of more wheat and wheat foods by establishing connections with allied groups and developing programs that changed the narrative around the health of wheat foods. Home economists from Texas, Colorado, South Dakota, Nebraska, and Kansas were part of the inaugural meeting and very soon thereafter western wheat states also joined WFC. WFC quickly adapted to promote all varieties of wheat produced west of the Mississippi River.



Photo by Cory Kress, Rockland.

By the 1980s, the Wheat Foods Council was made up of 12 members and two associate members from nine states and by 1988 WFC membership had grown to 31 members. Wheat producer groups, like the Idaho Wheat Commission, funded 99% of the WFC budget and members worked together to plan, fund, and execute the programs and promotional activities on behalf of the organization. Thanks to savvy public relations efforts, not only did the membership of WFC more than double by the end of the 1980s, but the operating budget increased tenfold. Exhibiting and networking at the American School Food Service Association convention, American Dietetic Association meeting, the National Restaurant Association trade show, and the International Food Editors conference reinforced wheat as a nutritious part of a healthy diet.

An expanding budget, national media attention, and active involvement from influential industry members

increased consumption of wheat foods, improving the health of the wheat industry and consumers. Seeing what could be accomplished with access to resources, the WFC members voted to amend the WFC bylaws to welcome support from anyone in the wheat-based foods industry and established a board of directors and advisory board at the turn of the 90s.

With the expansion of membership and funding, WFC developed a communications program aimed at major food, nutrition, and lifestyle media outlets. The Council's long-term communications goal was to change lingering misperceptions that wheat-based foods should be consumed only in very modest quantities. This direction brought in more industry members to WFC, and the baking, milling, pasta, and tortilla industries now shared equally in the budget



with the states. By 1997, WFC's 25th year, there were 46 members and contributors from all segments of the wheat production and wheat foods processing industry. At the time, WFC was the only organization prodding growth nationally for the entire wheat foods industry.

In 2000, the U.S. dietary guidelines separated grain foods from fruits and vegetables and called on Americans to "choose a variety of grains daily, especially whole grains." Studies showed that consumers were not getting the recommended daily servings of grain foods and this new emphasis on grains helped WFC increase the awareness of the benefits of all wheat – whole, fortified, and enriched – in the diet. Unfortunately, by 2003 bread and wheat-food sales had gone stale with some 32 million Americans on the Atkins and other low carbohydrate, high protein diets. The Wheat Foods Council broadened its approach in 2015 to target personal trainers as a critical, influential target in addition to registered dietitians.

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With more than 300,000 personal trainers giving weight loss and weight management advice to their four to five million clients per week, this shift in strategy opened up a large demographic to the messaging of the Wheat Foods Council. The message about the health and nutrition of wheat from those personal trainers through their clients reaches 32-48 million consumers each week. Today, the Wheat Foods Council's efforts are focused on addressing the misinformation a consumer may get from their personal trainer about fad diets like low carb, Paleo, Keto, and gluten free.

RULES OF GRAIN BIN SAFETY ON THE FARM

- Keep grain in good condition & maintain grain quality in the bin.
- Be prepared with equipment you need: harness, rope, tie-off.
- Work with someone or, at the very least, let someone know you are in the bin and check in frequently.
- Take time to be safe -- your safety is more valuable than your time.
- Keep kids away from the bins.

As harvest gets into full swing, we want to remind you that grain bin accidents are a leading cause of death and injury in the agricultural community each year. Please scan the QR code and take a few minutes to listen about how to keep yourself, your family, and your employees safe with on-farm storage.



FROM THE FIELD

GRAIN STORAGE SAFETY



The Wheat Foods Council is also working to address the misinformation about "modern wheat" and wheat breeding.

The Wheat Foods Council is a unique organization because it brings together producers, millers, and grain-based food manufacturers to focus on a common goal of increasing wheat foods consumption through nutrition education and promotion programs. It is the only organization Idaho wheat growers help fund through the Idaho Wheat Commission whose mission is domestic market development. Over the years, the organization has established itself as a leading source of science-based information on wheat and grain foods nutrition and continues to work to tackle misinformation and promote the consumption of wheat foods. ■

Josh Jones of Troy Appointed as New District 1 Idaho Barley Commissioner

The Idaho Barley Commission welcomes Josh Jones of Troy who has been appointed by Governor Brad Little to succeed Wes Hubbard as the District 1 IBC Commissioner. Hubbard completed two terms ending June 30.



Jones operates a mid-size diversified dryland farm in the Palouse region where he is focused on sustainability, soil health and maximizing crop production through holistic management practices.

He earned a Bachelor of Science degree in Agribusiness Management from Montana State University, and par-

ticipated in a student exchange to China while there. He recently completed the 2022 Bayer Leadership Training Program, besides previously completing the Executive Program for Agricultural Producers. He served two terms as a Latah County Farm Bureau board member, and is presently serving a 3rd term on Latah County Soil & Water Conservation District as Vice President, and as a member of the Northwest Farm Credit Services Local Advisory Committee.

He is also husband to Jennifer and the father of two boys, a student pilot, and backcountry hunting enthusiast.

Jones said, "I am looking forward to serving the growers of the best barley in the world." ■

Idaho Barley Commission Joins AHA Go Red for Women in Promoting Healthy Lifestyles

"Cardiovascular disease is the No. 1 killer of women, causing 1 in 3 deaths each year, but the simple truth is that most cardiovascular diseases can still be prevented with education and healthy lifestyle changes," according to the American Heart Association. The Idaho Barley Commission is taking action to help women and families with information on healthy eating through food barley initiatives and by partnering with the American Heart Association's Idaho Go Red for Women campaign. Barley's beta-glucan fiber significantly lowers total cholesterol and LDL cholesterol levels reducing the risk of cardiovascular disease. Barley has more beta-glucans than any other grain with 1 cup containing 2.5 grams. The U.S. Food and Drug Administration (FDA) approved a heart health claim in May 2006 to include barley in the recognized relationship between beta-glucan soluble fiber (as found in oats) and reduced risk of coronary heart disease. To qualify for this health claim, a food made from eligible barley sources must contain at least 0.75 grams of beta-glucan soluble fiber per serving.



The Idaho Barley Commission is the exclusive sponsor of AHA's Workforce Health Series with a focus on nutrition for the 2022-2023 campaign year, and will have

a leading role in Boise's 2023 Go Red for Women luncheon, including having barley featured as a part of the event menu in February. In addition, IBC Executive Director Laura Wilder is serving as AHA's 2022-2023 Idaho Go Red for Women Chair.



IBC's Executive Director Laura Wilder is serving as AHA's 2022-2023 Idaho Go Red For Women Chair.

"Barley is the most underappreciated grain in the human diet in terms of health benefits," said Wilder. "Consuming high-fiber, low glycemic index barley regularly can reduce cardiovascular disease risk and help manage glucose and insulin in the body, besides promoting the growth of friendly bacteria in the gut for a healthier digestive system."

For more information about versatile, heart-healthy barley, go to: www.eatbarley.com, or follow our food barley social media platforms on Pinterest (@eatbarley), Instagram (@eatbarley) or Facebook (Barley: Nature's Hearty Grain). ■

Idaho Barley Commission Annual Report

July 1, 2021—June 30, 2022 Fiscal Year

Working for You

Every sector of the Idaho barley industry was impacted by difficult drought conditions in Idaho and rising input costs over the 2021-2022 fiscal year. The 2021 Idaho barley crop was down 21 percent to 43.6 million bushels compared to 55 million bushels the previous year. Despite this drop in production, Idaho remained the top U.S. barley state with 37 percent of the nation's total barley crop in 2021. During another challenging year, the commission worked hard to continue effective programs to benefit growers and advance the industry to ensure the best return on investment for grower dollars.

With the short crop of 2021, 2021-2022 IBC total revenue was 16 percent below FY2020-2021 at \$618,688; however, due to Covid-19 impacts the previous year, the commission came into the year with a higher-than-normal carryover balance enabling the continuation of normal operations and programs for the year. The decreased FY2021-2022 revenue did impact the FY2022-2023 IBC budget though with decreases in FY2022-2023 research funding.

The Idaho Barley Commission serves to enhance the profitability of Idaho barley growers through research, market development, promotion, information, and education programs which are funded through the \$0.03 per hundred-weight grower assessment. This is equivalent to \$0.0144 per bushel—a great investment for growers!

The commission is governed by a board of 4 commissioners—3 growers and 1 industry representative. There are two full time staff members and the commission works with additional partners and contractors as needed to develop and carryout IBC programs.

IBC commissioners and staff welcome grower comments and input throughout the year. Please reach out if you have questions or ideas on ways the commission can better serve grower interests.



Allen Young,
2021-2022
IBC Chairman

In 2021, Idaho ranked 1st among states, growing 37 percent of the nation's barley crop—producing 43.6 million bushels of barley on 490,000 harvested acres at an average yield of 89 bushels per acre—the lowest average yield in 10 years.

The 2021 Idaho barley crop value was estimated at \$221.5 million with the average price per bushel at \$5.08 according to USDA NASS data.

Research Highlights

21 University of Idaho Projects and Initiatives Funded:

- Barley Extension Nurseries
- Small Grains Research Report
- Evaluation of Elite Barley Lines in Northern Idaho
- Support Scientist Funding for North Idaho Cereal Extension
- Wireworm Survey and Control
- Fungal and Oomycete Soil-Borne Disease in Idaho Cereals, and Disease Management Tools
- Evaluating Freeze Tolerance of Winter Barley Genotypes with Diverse Genetic Backgrounds
- Investigating Nitrogen Translocation and Grain Protein Accumulation in Spring Barley Genotypes of High and Low Grain Protein
- Screening for Resistance to Cereal Cyst Nematode in Current Barley Varieties
- Evaluating Impact of Invasive Cereal Aphid
- Biochemical Characterization of High Beta Glucan Barley Mutant
- Pathology Diagnostic Support
- Contrasting Barley Varieties' Yield and Protein Responses to Nitrogen and Sulfur Fertilizer Rates and Application Timing
- Soil Health Sampling for Updating Fertilizer Guide
- Idaho Small Grain Production Practices Survey
- Exploring Traits for Lodging Resistance in Barley Genotypes
- Does Barley Pulse Intercropping Improve Grain Quality in Southern Idaho
- Active Canopy Sensors to Prescribe In-Season supplemental Nitrogen for Barley
- UI Barley Agronomy Endowment
- UI Idaho Center for Plant and Soil Health in Parma

2 USDA-ARS Programs Supported:

- Aberdeen Barley Breeding Program
- Assessing Residue Source and Management Practices for Improving Fertilizer Recommendations in Cereal-based Cropping Systems



Idaho Barley Commission Annual Report—Page 2

July 1, 2021—June 30, 2022 Fiscal Year

Market Development Highlights

Foreign Market Development:

- Partnered with U.S. Grains Council on export market development
- Three virtual trade team meetings and seminars highlighting Idaho barley
- Hosted Mexican trade team with U.S. Grains Council



Food Barley Market Development:

- Initiatives with American Heart Association:
 - Bring on the Barley Recipe Challenge
 - Barley featured in entrée salad for Idaho Go Red For Women Luncheon



Food Barley Communications and Social Media:

- Monthly Food Barley Email Newsletter
- EatBarley.com website, and barley consumer focused pages on Facebook, Pinterest, Instagram and YouTube
- Barley recipe development and educational materials



Information / Education

- Published weekly Idaho Grain Market Report, distributed via email.
- Supported UI Extension Field Days and virtual Cereal Schools
- IBC website development to provide grower and industry information and resources



Industry Partnerships / Grower Services

- Partnered with Idaho Grain Producers Association and National Barley Growers Association to ensure the concerns and priorities of Idaho barley growers are considered and represented on state and national levels



Follow the Idaho Barley Commission at:

Websites

www.idahobarleycommission.org
www.eatbarley.com

Social Media

Facebook—Idaho Barley Commission, and, Barley: Nature's Hearty Grain

Pinterest—EatBarley **Instagram**—EatBarley

YouTube—Barley: Nature's Hearty Grain

Twitter—@idahobarleycom

Financials: July 1, 2021—June 30, 2022*

REVENUE:

Barley Assessment Revenue	\$ 618,034
Interest and Other Revenue	\$ 654
Miscellaneous Income	\$ 1
Carryover/Reserve Funds Used	\$ 93,987
Total Revenue	\$ 844,973

EXPENSES:

Research	\$ 398,632
Market Development	\$ 128,597
Industry Partnerships/Grower Services	\$ 127,186
Information / Education	\$ 51,039
Office and Administrative Costs	\$ 130,975
Capital Outlay	\$ 8,544
Total Expenses	\$ 844,973

Carryover/Reserve Funds \$ 516,523

*FY2021-2022 Audit not yet complete



2021-22 IBC Commissioners, from left to right: Allen Young, Blackfoot, District III Commissioner and Vice Chairman; Wes Hubbard, Bonners Ferry, District I Commissioner and Chairman; Mike Wilkins, Rupert, District II Commissioner; and Jason Boose, Industry Representative.

IBC Staff:

Laura Wilder, Executive Director
 Wren Hernandez, Office Manager



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Legend™ 5LST



For more information on Legend 5L ST contact a member of the Albaugh Seed Treatment Technology Team.

Jay Stroh (Jays@albaughllc.com), David Winston (Davidw@albaughllc.com), Lee Stewart (Lees@albaughllc.com) or Ed Driskill (Driskill@albaughllc.com).