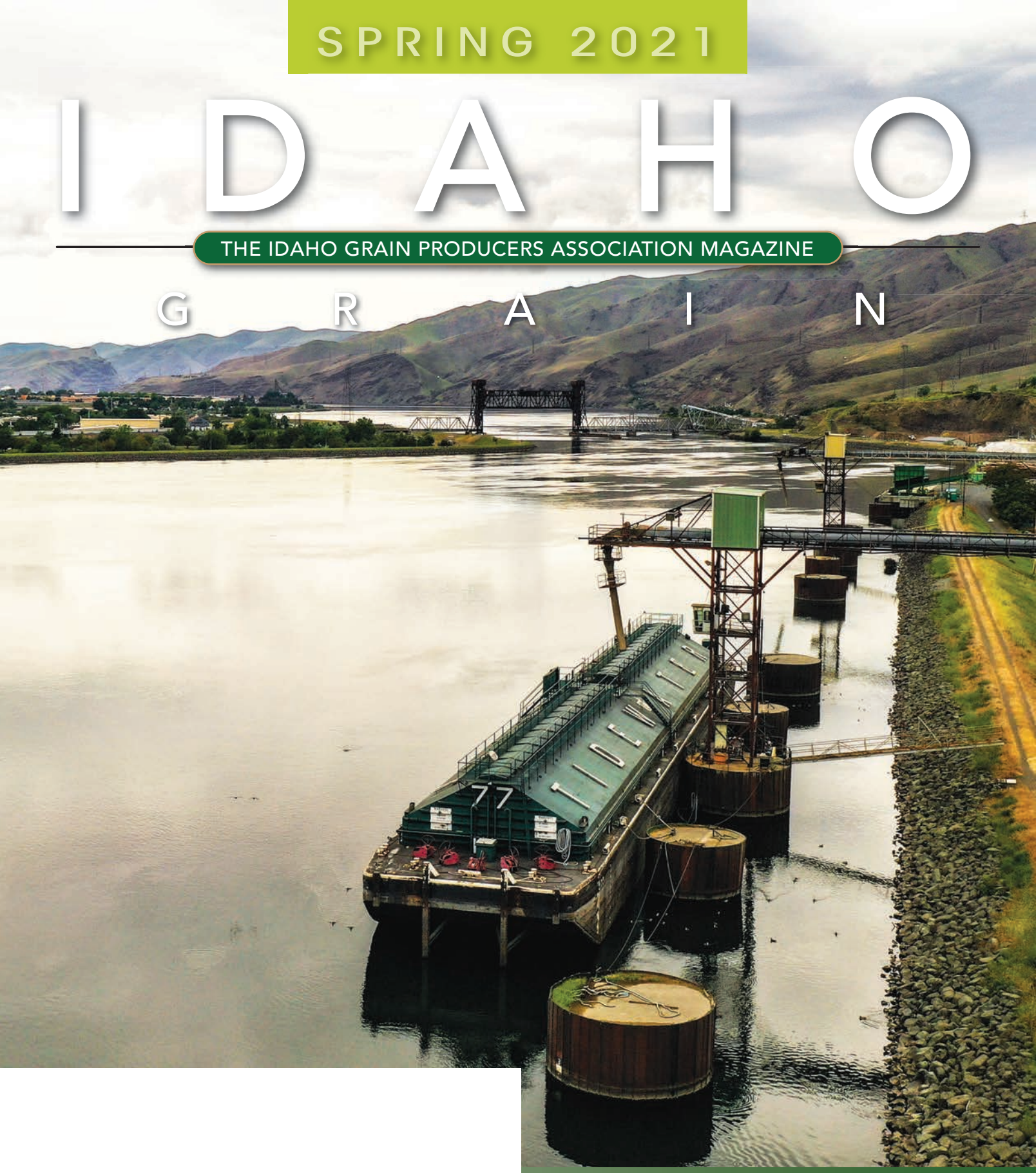
SPRING 2021

IDAHO GRAIN

THE IDAHO GRAIN PRODUCERS ASSOCIATION MAGAZINE



Idaho Grain Producers Association
821 West State Street, Boise, Idaho 83702-5832

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VIEWS

BY JAMIE KRESS
PRESIDENT

At last year's Commodity Classic in San Antonio, a speaker at the general session focused on the importance of remembering the efforts of those who have made your life better. He said, "When you drink from the fountain, don't forget those who dug the well." In our home, we think of this often. It's humbling. I suspect being connected to the past through farming causes most people in agriculture to feel the same way.

My Claunch family moved from Kentucky to the Bingham County desert near Big Butte in the early 1900s. I'm not sure how my Great Grandparents handled the harsh winters and cruel summers as they followed their dream. Eventually, they found the desert too difficult and moved closer to the Snake River. Today, their second homestead successfully grows wheat, sugar beets, and potatoes. While the ground is no longer in our family, my Great Grandparents passed on a heritage of hard work and perseverance- something I am grateful for today.

The Kress family holds similar experiences. Over 100 years ago, they moved to Idaho from Indiana and settled in the mountains of southern Power County. Shortly after arriving here they lost a child and spent their first winter in a crude dugout. Over the past hundred years, stories are told of relying on aerial drops of food and supplies in the winter, mothers worrying about young children on horseback trekking miles to school, and newlyweds finding mice in their farmhouse bed. Meanwhile, land was cleared, infrastructure built, and farms blossomed. Today, because of the efforts of our ancestors, the essentials of life are no longer a daily concern, leaving our family plenty of time to fine tune our farming operation, serve in our community and industry, and pursue hobbies.

I have no doubt there are thousands of stories just like ours around the state- I'm sure you could share a similar one. Our region has a history of hard-working, resourceful, and visionary individuals whose efforts have ultimately blessed our daily lives and have set the stage for tremendous opportunity in our farming operations.

I'm not sure if we as a society are too comfortable, or lack a little humility and gratitude, but it seems that it's become the norm to question the work of our forefathers in the name of "progress." In the PNW, a few of our own Congressional Leaders are looking for support to dismantle the four lower Snake River dams. In doing so, they completely disregard the vision and ingenuity that previous generations harnessed in creating dams for hydroelectricity, water management, and transportation. While we should always be looking forward, seeking improvement, and continuing to better our world, we would be wise to acknowledge when the "fountain" is already flowing freely.

"When you drink from the fountain, don't forget those who dug the well."

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EDITOR'S NOTE

BY STACEY KATSEANES SATTERLEE
EXECUTIVE DIRECTOR

My two oldest kids are in the fourth grade this year, which means they are learning all about Idaho history. The scary thing is that I distinctly remember learning Idaho history in the fourth grade. I remember studying about all the things that make Idaho great – including writing a report on hydropower. That year, I wrote a letter to Idaho Power and was thrilled to receive a response that included a book they had published on hydroelectric power and how is it produced from dams.

And here we are, YEARS later, still talking about dams. They remain one of the things that makes Idaho unique and great. The dams on the Snake and Columbia Rivers provides low-cost, clean hydropower to Idaho and the Pacific Northwest. Over 90% of the Northwest's renewable energy comes from hydroelectric dams. They provide communities with recreational opportunities – I grew up fishing, taking jet boat rides, and water skiing on these rivers and reservoirs. They provide irrigation water (in addition to the aforementioned electricity, which powers those pivots). They provide flood control and water storage. And the dams on the river system have become a pillar of Idaho's grain industry.

Idaho is one of the largest wheat-producing states in the U.S. Wheat is grown in 42 of Idaho's 44 counties and last year alone, Idaho's wheat growers produced a record-setting 112-million-bushel crop. Every year, about half of the state's wheat is used domestically while the other half is exported to overseas markets. Idaho is uniquely positioned to access the global marketplace by moving grain from the Port of Lewiston, through the Columbia-Snake River system to Portland, then onto customers around the world.

But the Columbia-Snake River System moves more than just Idaho wheat – the four dams on the lower Snake River move nearly 10% of the entire nation's wheat exports each year.

Barging wheat is the most environmentally friendly mode of transportation available. Without the ability to barge goods down the river, diesel fuel consumption would increase by nearly 5 million gallons per year as barges would be replaced by less efficient truck-to-rail shipments. At least 201 additional unit trains and 23.8 million miles in additional trucking activity would be required annually, resulting in increases in CO2 and other harmful emissions by over 1.2 million tons per year.

Governor Little's Salmon Workgroup completed their recommendations and submitted them to the Governor on December 31, 2020 (read more about that on page 16). The workgroup spent one meeting (at the behest of the environmental groups) focused on answering the question: what if the dams came out? Some on the workgroup were frustrated by my response – that it is impossible to envision a scenario without the dams on the Columbia-Snake River System. And that is because a viable alternative to barging wheat does not exist – or the increased costs of getting that wheat to market are so significant that wheat would no longer be a viable crop (let alone the environmental impact of putting that many more trucks

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on the road). Idaho's wheat growers rely on those locks and dams to transport their wheat downriver, as do wheat growers in Oregon, Washington, Montana, and the Dakotas – and the region's farmers rely on inputs coming up the river. The river system is quite literally a critical business partner for Idaho's grain growers.

Just over a month after the Workgroup's consensus recommendations were released, Representative Mike Simpson released a concept known as The Northwest in Transition. It includes the creation of a $33 billion Columbia Basin Fund and includes breaching the four lower Snake River dams. As a result, along with ours, many state and regional voices are aligning in support of the dams – Governor Brad Little issued a statement, in part saying:

> "My position on the lower Snake River Dams has not changed. I remain unconvinced that breaching the dams is a silver bullet for salmon recovery. Breaching the dams would have devastating impacts on Idahoans and vital segments of Idaho's economy.
>
> "We must continue to find creative, consensus-based solutions that help salmon thrive and foster a strong Idaho economy. Last year, I signed an agreement with the Governors of Washington, Oregon, and Montana, stating Idaho's commitment to working collaboratively on a regional level to advance our shared goal of successful salmon recovery and economic prosperity. I am also proud of the work of my Salmon Workgroup – a diverse group of stakeholders that worked for 20 months to come up with dozens of pragmatic recommendations that promote healthy salmon populations and thriving river communities in Idaho. It was the first time that broad interests worked collaboratively to help shape Idaho's policy on salmon and steelhead. While a lot remains to be done, I am confident we are moving in the right direction."

Representative Russ Fulcher (ID-1), along with WA Reps. Newhouse, McMorris Rodgers, and Beutler, issued a statement concluding:

> The bottom line is that proposing a $33 billion plan to breach the Lower Snake River dams - with no guarantee that salmon populations will benefit - is a drastic, fiscally irresponsible leap to take; and efforts to scare communities into thinking a judge can breach any federal dam with the stroke of a pen are just plain wrong. The challenges before us are great, and to overcome them, we must build trust and engage in conversations about the importance of the LSR dams. Only then will we find real solutions that will benefit all users of the Columbia-Snake River System.

And Speaker of the House Scott Bedke wrote an op-ed in opposition to Rep. Simpson's proposal, saying:

> How do we replace the thousands of megawatts of inexpensive, clean, reliable electricity generated by the four hydroelectric dams -- affordable electricity that every Bonneville Power Administration customer, including numerous Idaho cities, farmers and industries, depends on? When we figure out how to get Oregon and Washington to site small modular nuclear reactors along the Columbia River, then maybe we could consider removing these four dams.
>
> If Congressman Simpson's proposal is all about saving the salmon, why is there zero discussion about controlling the predator population at the mouth of the Columbia River, predators that studies have shown kill up to 35% of all the adult salmon attempting to return to Idaho? That's not to mention the predators that negatively impact the out-migration.
>
> What about Idaho's only seaport? It is estimated that fully 50% of Idaho's wheat production and 10% of the wheat grown in the USA moves through the Port of Lewiston each year. How will Idaho's grain producers be affected when they would be forced to trade the cheapest form of grain transportation for something that all admit will cost significantly more?

Stay tuned for more information to come from all this. In the meantime, know that IGPA continues to strongly support the dams on the Snake and Columbia rivers and oppose the removal of the four lower Snake River dams, and we will work hard to make your voice heard and protect your interests as this develops.

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SALMON & STEELHEAD
IN IDAHO

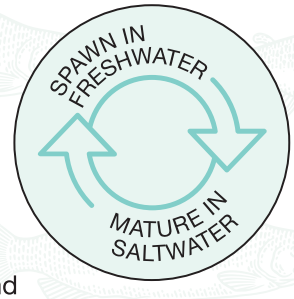
WHAT WE KNOW ABOUT THE FISH & THEIR POPULATIONS

Over the past 50-plus years, fishery scientists and policy makers have discussed several factors affecting salmon and steelhead populations in the Columbia Basin and around the northwest. The most important of those factors have been dubbed the **4 H's— hydropower, hatcheries, harvest** and **habitat**. In addition to the 4H's, populations in recent years have been greatly influenced by two other factors **– ocean conditions** and **predation**.

LIFE CYCLE

ANADROMOUS

=



Salmon, steelhead & lamprey begin and end their lives in Idaho's mountain streams. As juveniles, they will leave Idaho and swim

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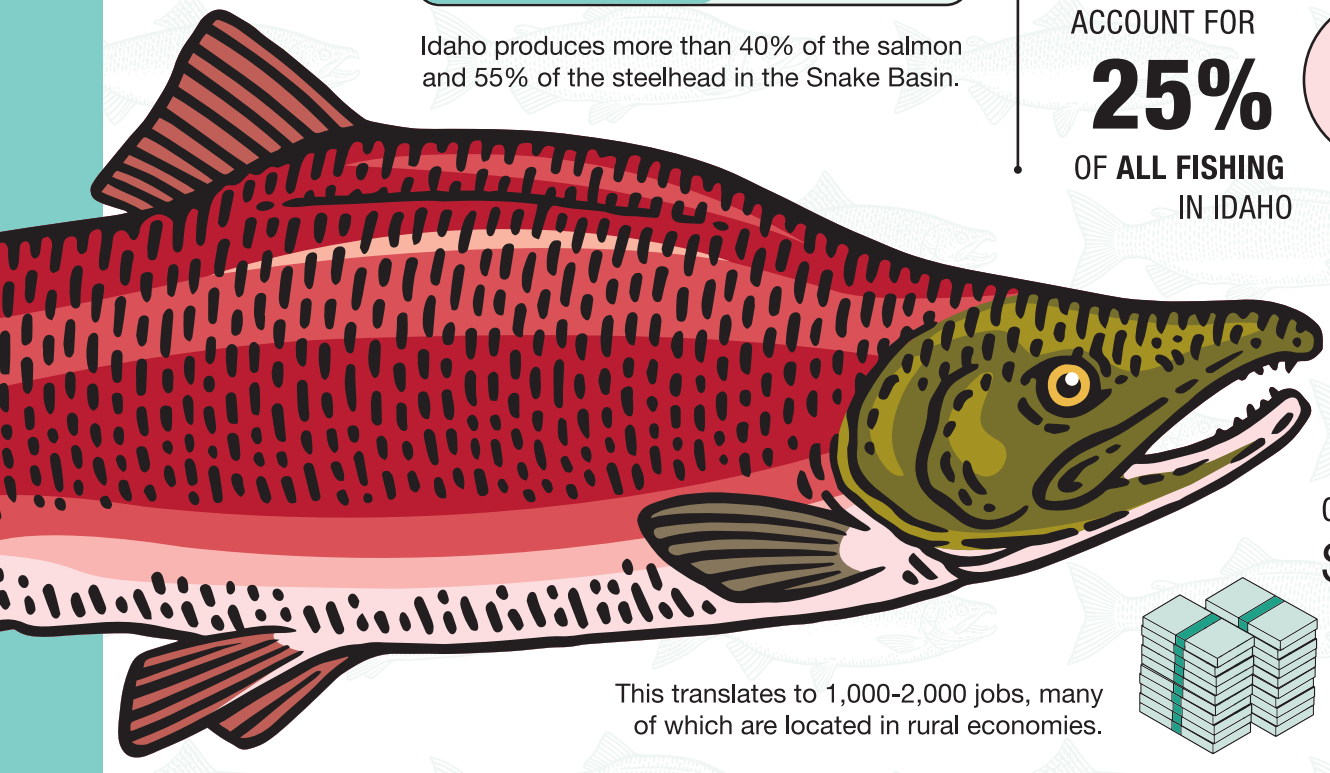
PACIFIC OCEAN ↔

MILES

They will navigate eight large dams & reservoirs, multiple kinds of predators, and changes in ocean and river conditions, twice in their lifetime.



SALMON 40%

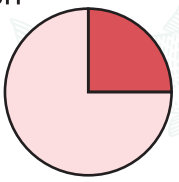
STEELHEAD 55%

Idaho produces more than 40% of the salmon and 55% of the steelhead in the Snake Basin.

ANADROMOUS FISH ACCOUNT FOR

25%

OF **ALL FISHING** IN IDAHO



GENERATING

$100 MILLION

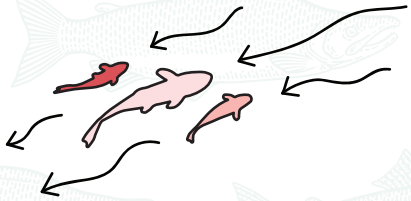
SPENT ANNUALLY

This translates to 1,000-2,000 jobs, many of which are located in rural economies.

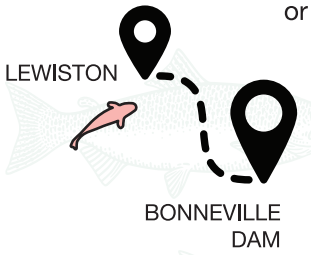
HYDROPOWER

SMOLTS DON'T ACTIVELY SWIM TO THE OCEAN

THEY ARE POINTED UPSTREAM & ARE CARRIED BY THE CURRENT

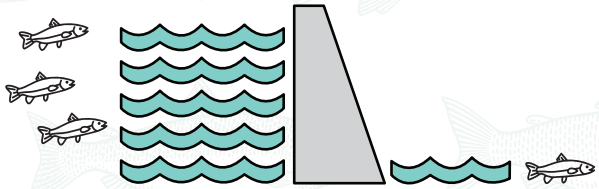


This means the time it takes a smolt to get to the ocean is directly related to water speed – or water transit time.



BEFORE HYDROSYSTEM **2 DAY** JOURNEY

NOW **10x** **(20 DAYS)** LONGER



DAM PASSAGE ROUTES

1. SPILLWAY **2.** TURBINES **3.** BYPASS

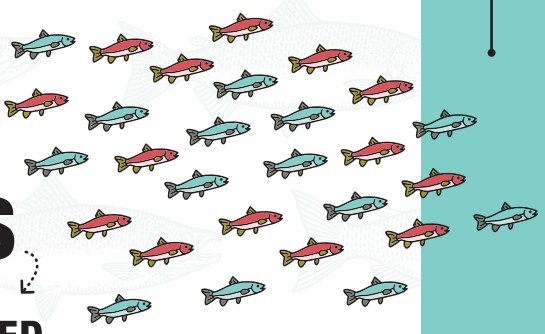
The smolt can go over the **spillway**, which can only happen if the dam is spilling water.

Enter the powerhouse intake, continue into the penstock and pass through the **turbine**.

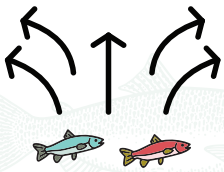
Enter the powerhouse, then encounter a screen which diverts them into the **bypass** collection channel where they are either put on a barge or back into the river.

HATCHERIES

There are currently 15 salmon and/or steelhead hatcheries and several satellite & acclimation facilities in Idaho.



28 IDAHO HATCHERIES PRODUCE MILLION SMOLTS



STRATEGICALLY RELEASED

1 - Accessible to anglers
2 - Available for collection by hatchery managers for spawning
3 - Have minimal interactions with wild fish

TO BE CONTINUED...

Look for the second part of this series in the next edition of Idaho Grain.

Idaho GRAIN Producers Association

Thoughts On 2021 from National Council of Farmer Cooperatives

BY CHUCK CONNER, NATIONAL COUNCIL OF FARMER COOPERATIVES

Our nation's capital is a very different place than it was just a few short months ago. Some of this is the transformation that Washington undergoes anytime there is a change in Administration. Events since Election Day, however, have transformed the political atmosphere profoundly. I will touch later what this means for agriculture policy moving forward and the role we can play in overcoming this challenge, but first it is useful to look at the impact of the election and its results.

The 2020 election was highly unusual in many ways, and not just because it was held during a worldwide pandemic. It marked the first time since 1992 that an incumbent president was defeated in his bid for re-election, and the first time since 1980 where an incumbent lost in a head-to-head matchup (remember Ross Perot made a strong third party bid in 1992).

At the same time, the down ballot results seemed to send a different message. Republicans made substantial gains in the House of Representatives, a trend carried over to state legislative races across the country. While the GOP failed to take back the majority, their victories will force Democratic leadership to hold nearly the entire caucus in line to move legislation.

And in the Senate, results that looked favorable for Republicans on election night—the GOP projected to hold 50 seats with two run-off elections in Georgia—saw a stunning reversal as both Democrats in Georgia won their run-offs on January 5th.

This raises the question—how did such strange and seemingly divergent results come about? Looked at in a certain way, though, the explanation is relatively easy.

Partly, voters punished President Trump for his handling (or, in their opinion, mishandling) of the COVID-19 pandemic. Many voters opted for the candidate they felt would provide a steady hand at the wheel. This trend was especially apparent with college-educated suburban voters, who voted for Joe Biden at the top of the ticket but for Republican candidates down ballot.

Further, it was likely driven by the unique divisiveness of Donald Trump. The love of his supporters was matched by the loathing of his opponents. Being on the ballot in 2020, former president Trump helped turn out voters who had stayed home in 2018, flipping seats that Democrats had won in a wave election but could not hold this year.

NCFC
National Council of Farmer Cooperatives

This also helps explain the Georgia run-off results. With former president Trump not on the ballot, a portion of his voters stayed home. In addition, his refusal to concede the election drove some moderate, suburban voters to support the Democratic candidates in the race.

This takes us to how the events since the election have also changed Washington. It is impossible to discuss the political atmosphere here without touching on the events of January 6th, when an unruly mob broke into the Capitol, resulting in the loss of five lives.

For those of us who live or work in Washington—and especially those who have worked on the Hill or have loved ones who do—it was a jarring experience. A part of our daily lives, a symbol of our democracy and a building that we thought had tight security suddenly seemed vulnerable.

For member of Congress and their staff, it has been even more dramatic. It is not just the razor wire topped fences or the National Guardsmen patrolling the perimeter. For many years, all of us have seen a growing partisanship in Washington. This is something beyond that.

Members of Congress now, quite literally, fear members across the aisle and their supporters, or view them as un-American. And these feelings are not just cross-party, there is some of that even among members of the same party.

All of this forms the backdrop as President Biden assumes office. While things seem dark, I would like to point to a couple reasons for hope at this time.

The first has to do with the people, especially on issues important to those of us in agriculture. Secretary of Agriculture-designate Tom Vilsack should give all of us great comfort. He is someone whose policies, as we have seen, will be driven by evidence and science. He has true empathy for America's farmers and ranchers and during his previous stint as secretary always asked the all-important question—how will this policy impact producers, will it make their lives and work easier, or harder.

Another reason for hope is just how the new president operates. I should probably start by admitting that, on specific policy issues, President Biden and I likely have some significant differences of opinion. After all, he is a Democrat and I have been a staunch Republican all my life. But President Biden is not someone who I think views the other side as evil, or un-American.

He is someone who has spent nearly his entire adult life in the Senate, and most of it when it was a far more collegial place.

One of the stories that the president likes to tell about his early days in Washington involved Majority Leader Mike Mansfield—a true giant of the Senate—telling a young Joe Biden that even if you disagree with colleagues across the aisle, to make progress you need to see the good qualities that the voters in their state saw in sending them to Washington.

Now, that does not mean the president will not be partisan when he needs to or when he thinks the other side is obstructing. Witness the party-line vote on the budget resolution containing the COVID relief package. It does mean that he sees the other side as, generally,

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good people with different opinions and political needs and deserving of respect.

Illustrating that last point was a media report recently that a journalist asked a White House staffer if they had made up any nicknames for Mitch McConnell. The staffer replied, "no, and if someone did and the President found out, that person wouldn't be working here anymore."

That also points to another reason to hope that the political temperature comes down—this White House is, so far, a more orderly and disciplined place than it has been in some time. More so, even, than during the Obama Administration.

There is a solid policymaking process in place run by a team in the White House with decades of experience. It also helps that the entire Biden Administration shares one goal—doing everything possible to speed vaccine delivery, bring the pandemic under control and get the economy moving again.

That need to address the pandemic will influence the policy agenda for the next few months. How the debate on COVID relief and the budget plays out will illustrate how both President Biden and the Democrats in Congress will approach other policy debates moving forward. A process filled with party-line votes does not set the best precedent for bipartisanship or put Republicans at ease.

Yet, the two other priority issues of the new Administration—climate legislation and immigration reform--will require bipartisanship in their crafting and support from Republicans. It remains to be seen if, once legislation starts moving forward and there is horse trading to be done, the bad feelings over the budget vote will get papered over.

With Democrats in unified control of Congress, much early work there will reflect the president's priorities.

The COVID relief package will be the primary legislative focus through early March. Congressional committees will then get to work on other priority issues and the appropriations process to get underway. As an example, the House Agriculture Committee has identified four areas it will focus on initially: 1) issues facing minority farmers, 2) climate, 3) nutrition, and 4) ad hoc disaster and crop insurance. Similarly, the Senate Agriculture Committee has shown keen interest in advancing climate legislation beneficial to agriculture.

As these other priorities are debated, those of us in agriculture must position ourselves to be part of the process.

For instance, take climate change legislation. Now, I know that there is still some hesitancy across the countryside about what climate legislation means for producers and how it will impact rural America. I understand those reasons for concern.

This is an issue that is not going away, however. Every piece of opinion research I have seen shows that this is an issue where younger voters support action, across the political spectrum.

At the same time, radical solutions like the Green New Deal are not going anywhere given the margins in Congress. If and when policymakers come to the table to take a more common-sense approach to the issue, it will vital that agriculture have a seat at the table. We need to make sure that policy makers get things right when it comes to agriculture, and that the net result is something that increases farm income and competitiveness, not something that puts farmers out of business.

I have long believed that agriculture can and should be part of the solution, not just on specific issues like those above, but more broadly as well. That is why it is so important for producers to come together—whether in the co-ops like my members or in associations like the Idaho Grain Producers Association—to work together towards shared goals.

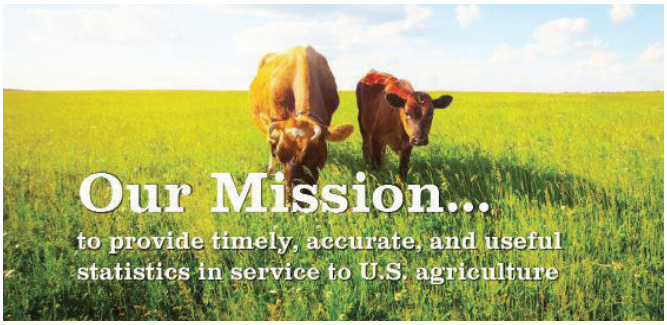
In closing, I would like to suggest what one of these shared goals should be. With everything I have written in this piece, there are two possible futures we can imagine. In the more pessimistic, political relations between the parties will become more hostile, what little common ground that exists will disappear and the forces that have taken to the streets in the past months will only gain strength.

In the more optimistic, political divisions still do exist and the parties will often fight tooth-and-claw, but policymakers will at least respect their colleagues and the voters on the other side. While there will still be deep disagreements on many issues, progress can be made on issues that have been neglected for too long or that pose a serious threat to the nation.

Which path we go down does not depend only on elected officials. It depends on all of us—including those of us in agriculture —as voters and citizens of this great country.

What is NASS and Why Does it Exist?

As the statistical agency for the U.S. Department of Agriculture for more than 150 years, National Agricultural Statistics Service (NASS) is the official source of primary, comprehensive, current information on the farms, ranches, and people who provide food, feed, and fiber to our nation and the world. NASS measures all agricultural activities down to the county level from everyone, especially small farmers. USDA agencies (including RMA and FSA) use NASS data to evaluate and administer insurance, disaster, commodity, conservation, credit, and other farm programs.



NASS is charged with: "providing timely, accurate, and useful statistics in service to U.S. agriculture."

To uphold a continuing commitment to our mission, NASS will:

- Report the facts on American agriculture, facts needed by people working in and depending upon U.S. agriculture.
- Provide objective and unbiased statistics on a preannounced schedule that is fair and impartial to all market participants.
- Conduct the Census of Agriculture every five years, providing the only source of consistent, comparable, and detailed agricultural data for every county in America.
- Serve the needs of our data users and customers at a local level through our network of State field offices and our cooperative relationship with universities and State Departments of Agriculture.
- Safeguard the privacy of farmers, ranchers, and other data providers, with a guarantee that confidentiality and data security continue to be our top priorities.

In fulfilling our mission, NASS:

- Collects, assembles, processes, and disseminates data about all aspects of U.S. agriculture based on survey, satellite, and administrative information.
- Conducts hundreds of national weekly, monthly, quarterly, and annual surveys each year, along with many more at regional, state, and local levels.
- Conducts a detailed census of every farm, ranch, and agricultural producer every five years.
- Publishes more than 400 national reports and hundreds of thousands of data items each year that help others make farm-level, business, and policy decisions.
- Partners with state agriculture departments, universities, and others to conduct additional surveys to meet partners' specific needs.
- Conducts ongoing statistical research on survey design, sampling, and other topics to advance the accuracy of statistical science.

Farm Averages: 2017 Census	
Average Size of Farm (acres)	468
Estimated Market Value of Land & Buildings	
Average per farm	$1,340,738
Average per acre	$2,866
Average Total Value Of	
Products sold	$302,746
Average Net Cash Return	$52,503
Average Production Expense	$266,105
Average Value of Machinery and Equipment	$175,951
Average Age of Producer	56.4
Average Years on any Operation	22.0

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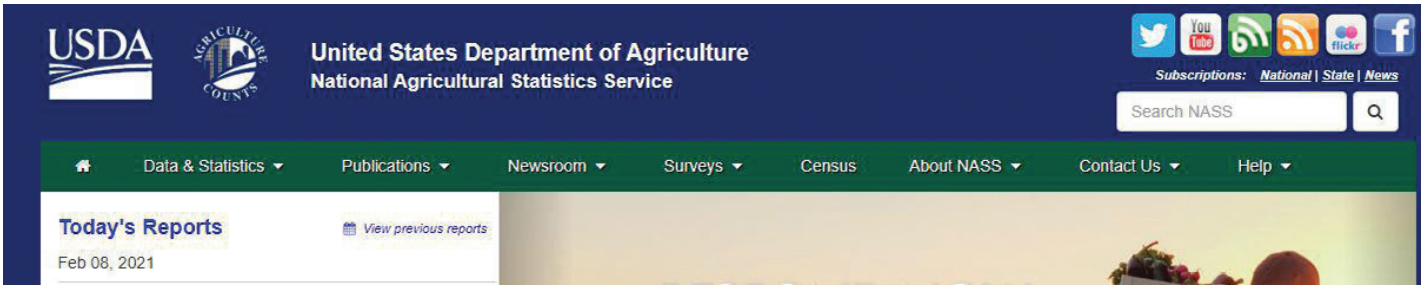

NASS reports are available electronically immediately after release via "Today's Reports" on the NASS homepage at www.nass.usda.gov. E-mail subscriptions to NASS and World Agricultural Outlook Board (WAOB) periodicals are available free of charge. Each email provides a link to the publication and is generally delivered within a few minutes of release. Our electronic mailing list provides quick and timely access to our agricultural and economic reports.

NASS makes past and current data available through an online query tool called Quick Stats at quickstats.nass.usda.gov. This tool allows custom queries based on survey or census program, commodities and characteristics, geographic levels, and time periods. Users can put the data on a map, manipulate and export the results, and save a link for future use.

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NASS conducts the Census of Agriculture every 5 years. The Census is the leading source of statistics about the Nation's agricultural production and the only source of consistent, comparable data at the county, State and national levels. The Census is authorized by law under Title 7, U.S. code and is conducted in close cooperation with the Nation's agricultural user groups and farmer organizations. The Census is a complete count of U.S. farms and ranches and the people who operate them. Even small plots of land - whether rural or urban - growing fruit, vegetables or some food animals count if $1,000 or more of such products were raised and sold, or normally would have been sold, during the Census year. Special Studies are conducted as follow-on programs to the Census of Agriculture. The follow-on programs include the Census of Aquaculture, Irrigation and Water Management Survey, Census of Horticultural Specialties, Tenure, Ownership and Transition of Agricultural Land Survey, the Organic Production Survey and the Local Food Marketing Practices Survey. Census publications can be viewed or downloaded from: www.nass.usda.gov/AgCensus/.

If you did not receive the 2017 Census of Agriculture questionnaire and should have, or if you are operating a new farm or ranch, please sign up to be counted in the 2022 Census of Agriculture on the above website.

There has always been a need in our nation for agricultural data. In 1791 President George Washington wrote to several farmers requesting information on land values, crops, yields, livestock prices, and taxes in effect conducting the Nation's first agricultural survey. Washington himself prepared the survey, compiled the results and shared them through personal letters which are, in a sense, the Nation's first crop reports.

Idaho Value of Products Sold by County: 2017 Census

County	Dollars (millions)
Cassia	927
Gooding	783
Twin Falls	680
Jerome	640
Canyon	575
Bingham	453
Elmore	430
Minidoka	354
Jefferson	295
Owyee	273

Having agricultural data was crucial during the Civil War. USDA itself was established by Abraham Lincoln in 1862 and its first crop report appeared in July 1863. NASS traces its roots all the way back to 1863, when USDA established a Division of Statistics. The USDA's Crop Reporting Board (now called the Agricultural Statistics Board) was created in 1905. A USDA reorganization in 1961 led to the creation of the Statistical Reporting Service, now known as National

Agricultural Statistics Service (NASS) of which the Agricultural Statistics Board is a part.

It is no different today. Agricultural producers, farm organizations, policymakers, community groups, researchers, government agencies, agribusinesses, and a host of related industries all need consistent, reliable data on U.S. agriculture. NASS exists to provide this data to everyone at the same time free of charge.

Recently an American Farm Bureau Federation USDA-NASS Working Group published a report. In the report the working group stated "The statistical reports prepared by NASS have sweeping impacts across the agriculture industry that go beyond the gathering of agricultural information. These reports are critical for decision-making by farmers, ranchers, agribusinesses, farm organizations, commodity groups, policymakers and other agricultural industry stakeholders. The weight these reports carry should not be discounted."

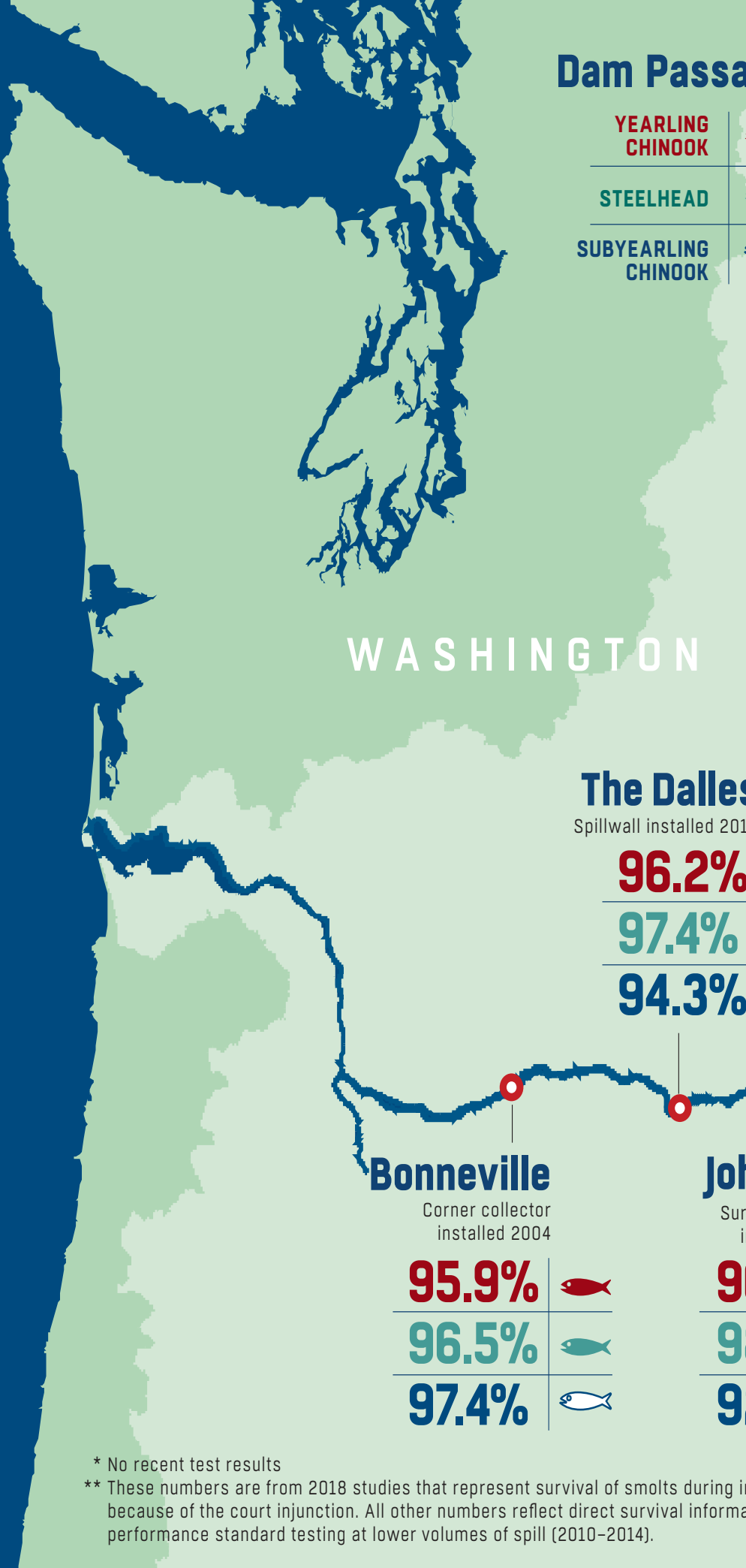
NASS headquarters in Washington, D.C., manages surveys, analyzes data, conducts cutting edge statistical research, and publishes national reports. Field offices across the country collect and publish similar data specific to their regions, states, and localities. The Northwest regional office in Olympia, WA servers Alaska, Idaho, Oregon and Washington. NASS maintains an office in Boise staffed by the Idaho State Statistician (State Stat). The Idaho State Stat represents NASS at Idaho agricultural meetings and events and is willing to be on the agenda as a presenter or simply be available to answer questions. Please feel free to contact Randy Welk, Idaho State Statistician by email: randy.welk@usda.gov or by phone: 208-334-1507 with questions, concerns or data requests.

NASS's partners include state agriculture departments, land grant universities, community-based organizations, and agriculture industry organizations. In Idaho NASS has cooperative agreements with the Idaho State Department of Agriculture and the University of Idaho.

All information in this article was sourced from the NASS website www.nass.usda.gov.

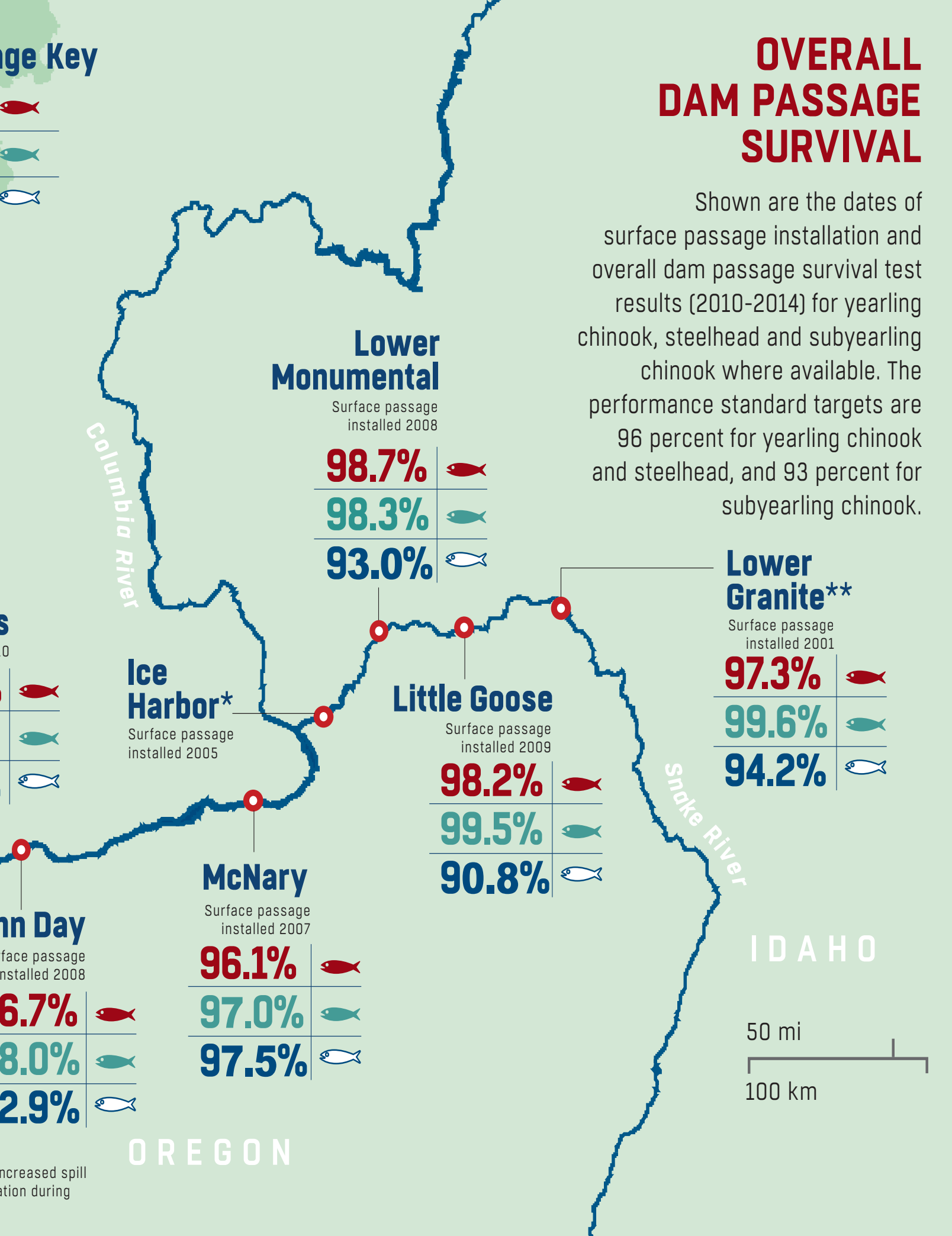
Look for "How Does NASS Produce Crop Reports?" coming in the next issue of the Idaho Grain Magazine.

Combined with refined spill operations, the installation of surface passage has reduced the percentage of fish that go through powerhouses (i.e. turbines), decreased fish travel time through the system and increased overall fish survival.



* No recent test results

** These numbers are from 2018 studies that represent survival of smolts during i because of the court injunction. All other numbers reflect direct survival informa performance standard testing at lower volumes of spill (2010–2014).


ge Key
OVERALL DAM PASSAGE SURVIVAL
Shown are the dates of surface passage installation and overall dam passage survival test results (2010-2014) for yearling chinook, steelhead and subyearling chinook where available. The performance standard targets are 96 percent for yearling chinook and steelhead, and 93 percent for subyearling chinook.
Lower Monumental
Surface passage installed 2008
98.7%
98.3%
93.0%
Columbia River
Lower Granite**
Surface passage installed 2001
97.3%
99.6%
94.2%
Ice Harbor*
Surface passage installed 2005
Little Goose
Surface passage installed 2009
98.2%
99.5%
90.8%
Snake River
McNary
Surface passage installed 2007
96.1%
97.0%
97.5%
nn Day
face passage
nstalled 2008
6.7%
8.0%
2.9%
ncreased spill
ation during
IDAHO
OREGON
50 mi
100 km

IGPA at the Table for Governor's Salmon Workgroup

More than 18 months ago, Governor Little assembled a group of stakeholders in Idaho who had a vested interest in the issue of salmon and steelhead and the Columbia-Snake River System. The task of this Salmon Workgroup was to create a set of policy recommendations for Governor Little to consider. Policy recommendation were to be consensus-based Idaho solutions for salmon and steelhead.

Governor Little stated that:

"Idaho has shown time after time that we are a leader in collaborative conservation efforts. I look forward to receiving the policy recommendations from my Salmon Workgroup. Together we will develop effective salmon and steelhead policy for Idaho to ensure that abundant and sustainable populations of salmon and steelhead exist for present and future generations to enjoy."

The workgroup was comprised of 20 stakeholders from throughout the State. Members included tribes, outdoorsmen, conservation groups, ag groups, hydropower entities and water users, in addition to two representatives from the Idaho legislature. For 18-months, the workgroup met throughout Idaho, in locations such as Lewiston, Salmon, Twin Falls and Boise. As required by the emergence of COVID-19, the meetings went virtual.

IGPA's Stacey Satterlee was a member of the workgroup, representing Idaho's grain growers. Satterlee said, "It was an honor to serve on this workgroup with varied stakeholders from across Idaho who, at the end of the day, were able to come together and develop a suite of policy recommendations focused on increasing salmon and steelhead numbers in Idaho."

The group's mission was to "develop policy recommendations for Governor Little through a collaborative, consensus driven, public process to restore abundant, sustainable, and well distributed populations of salmon and steelhead in Idaho for present and future generations, while recognizing diverse interests throughout the State."

Meetings provided an opportunity for Workgroup members to gain a common understanding of many of the issues impacting salmon and steelhead recovery in Idaho and the region. Topics included habitat restoration, hatchery management, predation control, the hydropower system, and harvest management. In addition, the Workgroup learned from each other about the importance of these issues to their various communities and constituencies.

After 18 months of discussion, the Workgroup presented a report containing numerous policy recommendations to the Governor. Recommendations included:

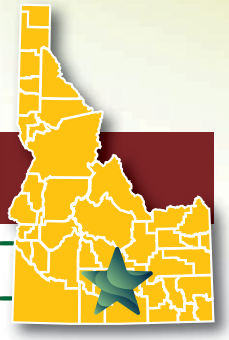
- Increased habitat restoration projects on Idaho's natal rivers and streams;
- Hatchery management that balanced the desire for wild fish, while recognizing that hatcheries are necessary to ensure the harvest opportunities that Idaho's tribes and fishing communities want and need;
- Aggressive predator management;
- Support of flexible spill operations on the Lower Snake River Dams;
- Engagement in regional dialogue with states, tribes and stakeholders; and
- Recognition that the process of salmon recovery should acknowledge and protect the diverse communities and economies that rely on the river system for many purposes.

The group discussed breaching the dams on the Lower Snake River at length but did NOT recommend dam removal. To review the final report, copies of written public comments and meeting materials, visit www.species.idaho.gov.

As you may have seen, in early February Congressman Mike Simpson (ID-2) released his salmon and energy concept entitled "The Northwest in Transition," in which the Congressman suggests breaching the four lower Snake River Dams. While this concept is making the rounds, IGPA maintains that we do not support dam breaching. The Columbia and Snake River Systems have been developed to accommodate the multiple uses and needs of the Pacific Northwest. Developing the river has provided recreational opportunities, inexpensive hydropower, water supplies for agriculture, flood protection and other benefits throughout the region. There is much that can be done to recover salmon and steelhead in the region that does not require breaching the dams, like the consensus-based recommendations of the Governor's Salmon Workgroup. We urge the State and the region to coalesce behind those efforts.

SENATOR

Kelly Anthon



BURLEY, ID • DISTRICT 27

Tell us a little bit about your hometown, where you grew up and where you live now?

I grew up on a small farm in Declo, settled in 1906 and still in the family.

Who had the greatest influence on you during your childhood?

My parents – growing up I worked a lot with my dad on the farm. Also, my Grandma Anthon lectured on the importance of a formal education. Education was a top priority throughout my growing up.

Tell us about a happy memory from your childhood?

I really enjoyed my time in 4-H and FFA. Those experiences influenced me a lot growing up – I raised horses, lambs, and sugarbeets during my time in those programs.

Tell us about your education?

Through 4-H I became an exchange student to Japan at age 15. After high school, I went to BYU Idaho to study Japanese but I didn't like it then briefly switched to Russian and ultimately went on to serve an LDS mission to Japan. I received my undergraduate in Socio-Cultural Anthropology and my law degree from the University of Idaho.

What did you want to be when you grew up and is that what you currently do for work?

I work as an attorney and primarily do contract work with Japanese companies. I've been working on a large deal to sell Idaho wheat to Asia where they prefer Idaho wheat because of its high quality.

Tell us about your family.

My dad is a 3rd generation farmer, mother is a serial entrepreneur and taught dance most of my upbringing. I have an older brother that is also an attorney, a sister that is a nurse, and another sister that owns a furniture store. My wife, Joelle, is from a Rupert farm family and we have five kids, ages eight to 18 (four girls and a boy).

How did you meet your spouse? Where did you go on your first date?

I first met her in church, but we got set up by her aunt. Our first date was to Twin Falls, I think dinner at Chili's and a drive-in movie. Our second date was more interesting - we went to the City of Rocks.

What do you do in your free time and other things you do in your community?

I really enjoy gardening and am a certified master gardener. I also love to ski, help with the kids' 4-H and travel.

If you could have dinner with one famous person, living or not, who would it be and why?

Reagan because that is kind of where is life is at right now.

If you could be or do anything else – what would it be?

I can't think of anything else; I've really enjoyed my career – my professional work with the city of Rupert has been very rewarding.

Why did you decide to run for office?

Politics was never in my cards. In fact, I was student body president at UI and to some degree swore off politics. But I started working with a lot of farms and dairies in my practice and I saw things in law that were not fair to farmers. Then I worked with city government and with the highway districts to get access to public lands and saw some of the same things and was unsuccessful. Ultimately, I made the choice with my family to serve.

Tell us about the committees you have served on and your path to leadership?

I feel very much at home in the Judiciary and Rules Committee, but I've also served on Education, Health & Welfare, Local Government and Taxation, and State Affairs as I got in leadership positions. I feel like I got into leadership because I work hard and keep my promises.

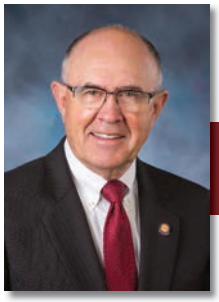
What challenges do you think the state faces in 2021 and beyond?

As Idaho grows and changes we need strong voices for agriculture now more than ever before.

What do you love most about Idaho?

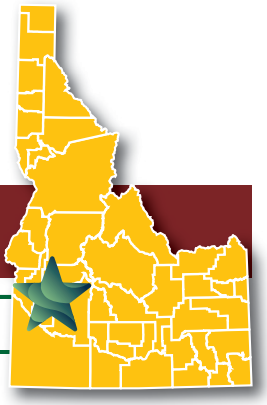
It's a great place to raise a family.

LEGISLATOR PROFILE



SENATOR

Chuck Winder



BOISE, ID • DISTRICT 20

Where did you grow up? I grew up in Vale, Oregon. My family came to Idaho in the 1880's to the Council and Cambridge area. My grandfather had a ranch in Vale and I grew up in town. I am the youngest of seven kids. I live in Boise now where my wife and I raised our family.

What is your occupation? My career was in commercial real estate. I worked for Morrison Knudsen as a real estate developer. And then had a business of my own for more than 30 years.

Tell us about your family. My wife and I have two children, seven grandchildren, and four great grandchildren. My son is in the business with me and my daughter is a principal at an elementary school in Boise.

How/where did you meet your wife? I met my wife Dianne in the summer between my sophomore and junior year in high school. She was playing tennis and a mutual friend introduced us.

Tell us about your education? I attended the College of Idaho. I was in the military; I served as a Navy flight instructor during Vietnam.

Why did you decide to run for office? I was involved in student government in both high school and college and served as student body president in college. After the military and during my working years at MK, they wanted someone from the company to be more active in the community. So, I went through Leadership Boise which was my first exposure to local politics and then went on to be part of the planning and zoning committee.

I ran for Ada County Highway Commissioner and served for 13 years and then ran for Governor in '93 and lost to Phil Batt. He appointed me to the State Transportation Board where I served for 11 years as chairman. I sold my business in 2008 and then-Governor Otter called to ask me to run for a Senate position when I ran for the ACHD Commission. I was mad about a lack of honesty and fairness in government at the time…and here I am all these years later after many years in public service.

What Committees have you served on in the legislature? I have served on the Transportation Committee every year, the Education Committee now for 10 years and State Affairs for 11 years.

What challenges do you think the state faces in 2021 and beyond? Well certainly the pandemic is impacting all of us and it's had a profound impact on business in the state of Idaho. Idaho has fared better than other states with a surplus and with the economy continuing to grow.

Taxes are certainly a challenge, education funding is always a top priority for Idahoans. Our state's transportation system-how do we manage the growth in Idaho, what's the impact and what's our long-term plan?

We need to continue to support small and large businesses, including agri-businesses. The bottom line is people need to have jobs as they raise their families.

One major challenge I see is the push for drugs to be legalized. We don't want to see a repeat of what happened in Oregon happen to Idaho. Also, water issues will continue to be important for all Idahoans. As we grow, the pressure for water grows.

The Senate really is a reasonable place where we can work together and I hope to keep that sentiment alive.

What do you do in your free time? I love to get out and golf, bike and fly-fish when I can. My passion is my family so spending time with them is very important to me. People in general are my passion; I am a public servant and will listen and try to help people.

If you could have dinner with one famous person, living or not, who would that be and why? There are so many people that I would truly enjoy meeting for dinner. However, if I have to choose one, that person would be George Washington. To learn from him about the founding of our nation and the leadership skills that helped him to be such a great leader in all walks of his life.

What do you love most about Idaho? The beauty of its people and the beauty of its geography.

What do you hope to accomplish during your time in the legislature? To serve the people of Idaho that elected me by caring about them and helping to meet their needs as it relates to their families, jobs, education and safety.

The Idaho Wheat Commission Responds to Simpson's Proposed Concept to Breach Dams on the Snake River

Idaho's wheat industry does not support the removal of dams on the Columbia-Snake River System. All aspects of the river system are essential for the transportation of wheat from farm to market.

"Wheat growers have relied on the river system to get their product to international markets for three generations," said Joseph Anderson, Genesee, Idaho Wheat Commission Chair. "Without barging, Idaho wheat growers are severely disadvantaged. Multiple modes of transportation to Portland help us better serve our customers and be regarded as a reliable supplier throughout the world."

Idaho's wheat growers produced a record-setting 112-million-bushel crop in 2020. About half of Idaho's wheat is shipped to consumers around the world, and Idaho is uniquely positioned to access the global marketplace by moving grain from the Port of Lewiston, through the Columbia-Snake River System to Portland, then on to customers in the Pacific Rim and elsewhere overseas.

The four dams on the lower Snake River System move nearly 10% of the entire nation's wheat exports each year. Barging wheat is, by far, the most environmentally friendly mode of transportation available. It would take 144 railcars or 538 semi-trucks to move as much product as one four-barge tow. Using truck to rail transportation would increase carbon emissions by more than 1.2 million tons per year.

The Columbia-Snake River System is an essential pillar of the economy in the Pacific Northwest, providing more than 40,000 local jobs directly and supporting more than 126,000 jobs through agriculture and other industries. Nearly 50 percent of Idaho's power supply and clean electricity through hydropower is made possible by dams. The river system provides irrigation for crops, clean power generation, navigation, water storage, and flood control.

The Idaho Wheat Commission (IWC) supports the recommendations Governor Brad Little's Salmon Work Group has made -- as a broad coalition of a diverse set of stakeholders -- to collaboratively develop a unified policy for salmon and steelhead recovery without removing dams. IWC encourages conversations with a variety of stakeholders throughout the Pacific Northwest to commit real dollars for salmon recovery, maintain efficient transportation options and increase utilization of renewable, carbon-free energy to combat climate change.

Let's Talk About GMOs

BY BRITANY HURST MARCHANT, IDAHO WHEAT COMMISSION

Since genetically modified foods became available in the early 1990s, genetically modified organisms (GMO) have become an increasingly controversial topic of consumerism worldwide. The controversy surrounding GMOs is thanks, in part, to food marketing tactics. Fear and distrust sell, so the crusade against science marches on. Here, we take a look at the facts about GMOs.

What is a GMO?

A GMO is a plant, animal, or microorganism that has had its genetic material, or DNA, changed through technology that modifies the DNA by transferring specific DNA from one organism to another. This is different than the technology that allows for selective breeding where two species are crossed to develop a new variety. GMOs have had their genetic material modified and cannot be created through conventional breeding.

Are there GMO grains?

No. There is no GMO wheat or barley grown or sold commercially in the United States.

What crops are GMO?

At last count, there were more than 50,000 products on the market stamped as 'GMO-free', including products like water and salt that do not contain genetic material and, therefore, cannot be genetically engineered. There are only 10 plant types that are commercially available as GMOs.

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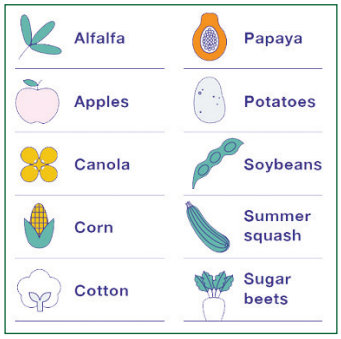
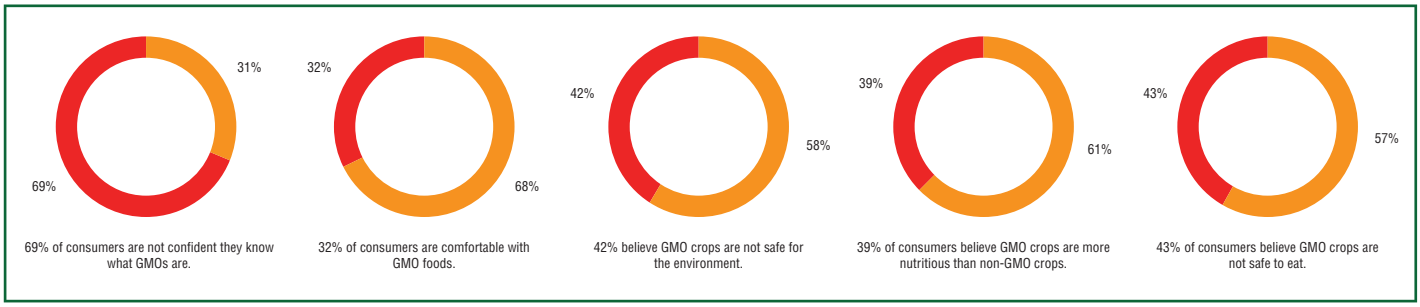


The ten crops with GMO and non-GMO varieties; fda.gov



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The majority of these crops, like alfalfa, field corn, and soy are actually preferred for livestock feed. Other uses for these crops include common food ingredients, such as sugar, canola oil, corn starch, and soy lecithin. You may find only a few of these in the produce section at the supermarket: rainbow papaya, summer squash, sweet corn, potatoes, and apples. Even though consumers won't find many GMO fruits and vegetables at the produce stand, GMOs are a common part of the food supply.

How do consumers view GMOs?

Surveys have been conducted in the United States asking this very question.

Are GMOs safe?

Absolutely. Mainstream scientists unanimously agree that GMO products are every bit as safe as their non-GMO counterparts. While marketing and anti-GMO advocacy lead consumers to believe that GMOs cause cancer and a range of other diseases, in the 20-plus years on the market, GMOs have not caused or contributed to a single illness or death. The health and safety of GMOs have been validated by many independent scientists and health organizations around the world. In some cases, GMOs improve nutritional value. GMO soybeans have healthier oils that are used to replace oils with trans fats.

Is Celiac Disease caused by GMOs?

No. There is no GMO wheat, barley, or rye grown or sold commercially in the United States. Therefore, there is no possible way that GMOs are in any way related to a seeming rise in Celiac disease. Celiac disease is a serious condition that affects the digestive system caused by an abnormal sensitivity to gluten.

What are the benefits of GMOs?

For more than 10,000 years, humans have been modifying crops through cross-breeding, selective breeding, and mutation breeding. These modifications have provided new varieties of plants that better suit the needs of consumers; for example, seedless watermelon and apples that are sweeter, crisper, or don't brown as quickly. Modern technology now allows scientists to use genetic engineering to target just one gene, such as disease resistance or drought tolerance, and transfer it to a plant. This technology allows for higher crop yields, less crop loss, lower pesticide use, reduced natural resource consumption, longer storage life, better appearance or nutrition, or any combination of these traits.

Through GMO technology, scientists have been able to produce plants that are more resistant to insects by targeting and transferring plant-incorporated protectants. Other GMO plants have been developed to tolerate certain herbicides. Working together, the Food and Drug Administration, the Environmental Protection Agency, and the United States Department of Agriculture share science-based information to help researchers and genetic engineers develop plants that produce higher yields using less land and fewer natural resources and safely making food products less expensive for families around the world.

New Relief from Wireworm

BY BRITANY HURST MARCHANT, IDAHO WHEAT COMMISSION

Each year, wireworm causes substantial damage to wheat crops across the Pacific Northwest. Agronomists and entomologists in Idaho and Washington who have been studying wireworm abatement have seen from 40% all the way up to 100% crop loss due to wireworm, and those losses hit hard. Even when crop losses are on the lower end of the spectrum, the surviving seedlings can end up being stunted, reducing yield even further. One problem is that wireworm larvae are actively destroying crops in all stages of growth as they progress from larvae to pupae and finally to click beetles. The other problem is their exponential population expansion. Two adult click beetles multiply to more than 200 adults in the first year and produce 1,000 wireworm by year three.

Cereals have very few chemical options to control and reduce wireworm populations. Currently, the leading treatment is to use neonicotinoid-treated seeds. However, neonicotinoid seeds only intoxicate the wireworm. Getting the wireworm "drunk" protects the initial stand establishment and seedling development, but still allows the larvae to develop and continue through the life cycle, which means population growth and crop damage continue. Without treatments that directly impact wireworm mortality, wireworm abatement is impossible.

Researchers and chemists at BASF found that using Broflanilide — a new class of chemistry — and the active ingredient in Teraxxa, produced a new line of defense against wireworm. Broflanilide is an Insecticide Resistance Action Committee (IRAC) Mode of Action Group 30, innovation that does what we need it to — protect against wireworm by attacking wireworm mortality. Trials have shown Teraxxa to be highly effective with rapid wireworm mortality on contact across all species and life stages. In fact, field studies have shown 80-90% reduction in end-of-season resident wireworms from the beginning of the season.

Wireworm's long life cycle, two to seven years or more, and the rapid population growth makes increasing mortality imperative for crop survival and meeting yield expectations. Rather than simply intoxicating the wireworm, Broflanilide binds to a specific point in the central nervous system of the wireworm. This attack on the central nervous system causes hyperactivity of nerves and muscles, and ultimately causes death. This treatment eliminates the wireworm completely and ensures the wireworm does not come back or reproduce.

Cereal growers have not been able to effectively treat wireworm since 2007 when the chemical Lindane was banned for agricultural use, and over the past 14 years those wireworm populations have been growing at a rapid — and catastrophic — rate. Ideal conditions for above average wheat yield are also ideal conditions for wireworm infestations to become a real problem. When wireworm are not eliminated from the soil, crop loss becomes recurring and opens quality farmland to invasive weeds.

Teraxxa is convenient, with low use rates and multiple formulations, and is an effective rotation partner for insecticide resistance management and customized treatments with fungicides or other insecticides. Researchers recommend using a combination of Teraxxa and neonicitinoids to help reduce the risk of wireworms developing a resistance to either chemistry.

Teraxxa has been analyzed largely on spring wheat to this point, but studies of its efficacy in winter wheat are ongoing, as well as the effect on crop rotations after wireworms are eliminated.

U.S. Wheat Export Headed to New Heights

BY CASEY CHUMRAU, IDAHO WHEAT COMMISSION EXECUTIVE DIRECTOR

Heading into the last quarter of the 2020/21 marketing year (June-May), U.S. wheat exports are on track to reach their highest level in four years. Based on steady demand, the United States Department of Agriculture (USDA) projects total U.S. wheat exports to reach 26.8 million metric tons (MMT), which would be 6% greater than the five-year average. On average, 50% of U.S. wheat production and 50% of the Idaho crop is exported. The two classes with the greatest increase in export demand this year are soft white (SW) and hard red spring (HRS), which represented a combined 79% of Idaho's production in 2020.

In the first months of the marketing year, demand was driven by a need to stabilize and guarantee the food supply amid the Covid-19 outbreak. At the same time, China started ramping up purchases following the implementation of the Phase One trade agreement between the U.S. and China, which has shot the country from #12 to the #3 spot among all U.S. wheat buyers behind Mexico and the Philippines. Low supply in Australia and rumors of limiting Russian exports have also benefitted U.S. exports and supported domestic prices. As of February 4, U.S. wheat exports totaled 23.0 MMT (845.3 million bushels), up 5% compared to the same day last year.

Total U.S. white wheat sales to date, represented mainly by SW, were 36% ahead of last year at 5.98 MMT (219.7 million bushels). SW sales have benefited from unusually high prices of soft red winter (SRW) and a severe decrease in white wheat production in Australia due to drought. Additionally, Mexico has invested in improved railroad infrastructure the last three years, allowing wheat buyers to purchase SW more easily by train from Southern Idaho, which they did when SRW prices increased. China has purchased 779,000 metric tons of SW to-date, compared to just 131,000 metric tons a year earlier, and representing 29% of all U.S. wheat sales to China this marketing year. Sales to the Philippines and South Korea, the top two SW markets in marketing year 2019/20, are ahead of last year's pace due to competitive prices and strong U.S. Wheat Associates (USW) educational programs, supported by IWC and other state wheat commissions, that helped customers stay informed and make timely buying decisions in the first half of MY 2020/21.

Top five for the current marketing year 2020/21 (June-May) as of January 28:

White Wheat

1. Philippines
2. South Korea
3. China
4. Japan
5. Indonesia

Hard Red Winter

1. Mexico
2. China
3. Nigeria
4. Japan
5. Brazil

Hard Red Spring (just in case!)

1. Philippines
2. Japan
3. China
4. Taiwan
5. Mexico

All Wheat

1. Mexico
2. Philippines
3. China
4. Japan
5. South Korea

Total HRS export sales-to-date of 6.90 MMT (253.6 million bushels) are 9% ahead of this time last year and are 4% ahead of the five-year average. Sales to the Philippines and Japan, the top two markets for HRS, are up 6% and 1% respectively on competitive prices and increased focus on food stability following the COVID-19 outbreak, according to export traders. Export sales to China, now the third largest market for HRS, are up more than 900% on the year at 634,000 MT following the Phase One trade agreement. HRS makes up 23% of China's U.S. wheat purchases to-date.

> Strong demand for U.S. wheat exports has contributed to the significant increase in futures markets since August, pushing prices to the highest level seen in years.

Hard Red Winter (HRW) is the largest class of U.S. wheat both by production and export sales. As of February 4, sales of 7.76 MMT (285.0 million bushels) are 5% off of last year but ahead of the 5-year average. Significant increases in exports to Nigeria, China, and Brazil haven't offset reduced sales to Colombia, Taiwan, or Mexico -- the largest market for HRW. To-date, China has purchased 1.13 MMT of HRW compared to no purchases in 2019/20, which can be attributed to the Phase One agreement, and makes China the second-largest market for HRW behind Mexico this year. All HRW exports to China have been shipped from the Gulf of Mexico. Export sales to Mexico are down 11% on the year at 1.78 MMT due to volatility in the value of the peso and significantly reduced restaurant demand following the COVID-19 outbreak.

Export sales of SRW are down 22% compared to last year at 1.71 MMT (60.7 million bushels) due to high prices and low availability. Between early June and late December 2020, the average SRW export price was $247/MT, 12% higher than the same period last year and well above Russia, a key competitor in Nigeria and Latin America.

Durum exports are off 20% compared to last year as the top seven markets have all decreased purchases, including Italy and Algeria, who accounted for a combined 80% of total U.S. durum exports last year. While Idaho produces durum, it is normally used domestically.

Strong demand for U.S. wheat exports has contributed to the significant increase in futures markets since August, pushing prices to the highest level seen in years. Looking ahead, Australian wheat will likely become more competitive following its second largest crop on record and could dip into U.S. market share in Asia. However, Russia implemented an export quota from February 15 – June 30, 2021 in which a €25/metric ton charge is applied to all wheat sold within the quota, and increases to €50 once the quota is filled. Starting July 1, it will change to a "floating tax" of 70% of any value over $200/metric ton. Russia is aiming to tackle rising food inflation, but the wheat tax is mostly a political move as Russia hit record production in 2020. The U.S. stands to gain ground in Africa and Latin America if Russian wheat is less competitive.

IBC

How Trade Benefits the U.S. Economy

FROM *ESSENTIAL GUIDE TO U.S. TRADE* PUBLISHED BY U.S. GRAINS COUNCIL

As a new U.S. presidential administration begins and new trade priorities begin to emerge, it's important to re-examine: why trade anyway?

Most every product we use has a complex story that involves trade. They are the culmination of ideas, engineering, materials testing, accounting services, design, coding, sales, farming, manufacturing production and countless other activities by workers who add their value along the way in this country and many countries beyond our borders.

It may sound counterintuitive, but the more production processes are spread across national boundaries through global value chains, the more integrated the U.S. economy becomes with other economies in the world. Having so many firms lead and participate in global value chains is an American strength.

Food trade has grown more than thirteen times its value since 1980. Even though the majority of food produced in the world is still grown and consumed locally, global trade in agriculture and food products has swelled over the last three decades. In 1980, the value of agriculture and food trade is estimated to have been $230 billion. By 2015, global trade had grown to $1.77 trillion in agriculture and $1.49 trillion in food products. Today, more than one-fifth of the calories grown in farm fields is ultimately traded in global markets.

As exporters, U.S. growers are second only to the European Union countries counted together.

U.S. productivity is growing faster than demand in the United States, which means that American farmers, ranchers and firms in U.S. agricultural supply chains rely on export markets as an important way to increase sales and revenues.

There's reason to worry that tariffs will dampen overseas sales, but in the aggregate, the U.S. Department of Agriculture still sees a bright future for U.S. agricultural exports. USDA's Economic Research Service projects fiscal 2019 agricultural exports at $144.5 billion, up $500 million from the revised forecast for fiscal 2018. The increase is attributed to higher exports of wheat and horticultural products, which could offset expected declines in oilseeds, livestock and dairy product exports.

The Idaho Barley Commission and Idaho Wheat Commission work with partners including U.S. Grains Council and U.S. Wheat Associates on developing export markets for growers, including hosting trade teams from around the world. Pictured here is a Mexican Malt Barley Trade Team visiting Idaho barley harvest.

According to U.S. trade statistics, the United States has maintained a surplus in agricultural trade since 1960, driven primarily by exports of bulk commodities. In 2017, the U.S. agricultural surplus totaled $17.4 billion.

What are our largest agricultural export markets today? In 2015, Canada bought the largest share of U.S. agricultural exports, followed by Mexico. Together, our North American neighbors consumed over $39 billion or 28.3 percent of total U.S. agricultural exports, making them vital markets. East Asia, including its lucrative markets of Japan and China, purchased nearly $46 billion in U.S. agricultural exports, overtaking North America in accounting for 33.2 percent of the total.

Demand is rising for U.S.-grown commodities and food in large emerging markets that are experiencing significant population growth. Cities in emerging markets are bulging at the seams, which is a result of global patterns of urbanization; more than 2/3 of the world's population will live in cities by 2050. Significant reductions in poverty and emergence of a robust middle class in developing economies has driven dietary "upgrading" as more people can afford meat poultry and fish. Livestock demand is up as well, spurring demand for the grains and oilseeds that comprise animal diets.

Some 70 percent of the increased demand for these proteins is from developing countries. Asia, Latin America and Sub- Saharan Africa are having the most impact on food consumption and changing patterns of agricultural and food trade. The recent tariff war with China further underscore the need to sow the seeds now for diversification into smaller but growing markets.

Taken together, emerging markets currently make up 20 percent of U.S. agricultural exports. An important step to growing U.S. exports to these markets is U.S. expertise and assistance both to develop appropriate regulatory frameworks for marketing approvals and to facilitate the clearance and movement of food once approved for sale.

Trade agreements and trade capacity building can be enormously helpful in promoting good regulatory practices across the board, opening the door to more purchases of U.S. agricultural and food exports.

The U.S. Grains Council, U.S. Wheat Associates and organizations like them working with other commodities do significant amounts of this work for the U.S. agriculture industry, engaging in trade negotiations, helping facilitate trade around existing policies, helping customers understand the value of purchasing U.S. origin and teaching those customers how to actually buy and use U.S. products. The Idaho Barley Commission and the Idaho Wheat Commission work with these partners on export market development programs in leveraging grower dollars to provide export market opportunities for Idaho growers.

To download a full copy of Backgrounder: The Essential Guide to U.S. Trade, go to: https://grains.org/learn-about-trade/.

Where's the Nitrogen? Fertilizer Recovery of Malting Barley

BY CHRISTOPHER W. ROGERS, GRANT LOOMIS & JARED A. SPACKMAN, USDA-ARS & UNIVERSITY OF IDAHO

- Fertilizer nitrogen recovery was similar for irrigated malting barley grown in Idaho compared to previous research in lower-yielding and typically lower-input, non-irrigated systems.
- Modern varieties (ABI-Voyager and Moravian 69) out-yielded a historical one (Harrington) with no reduction in fertilizer nitrogen recovery.
- While the incorporation of fertilizer did not result in a yield improvement, fertilizer recovery was improved by more than 10%: an important factor for long-term sustainability and environmental quality.


Rogers

Every grower understands the costs associated with running a profitable farming operation, and of these, nitrogen fertilizer additions are one that occurs nearly every year and for nearly every field to ensure that yield and quality specifications are met. It is important to consider where this fertilizer nitrogen goes, in terms of agronomic production as well as losses to the

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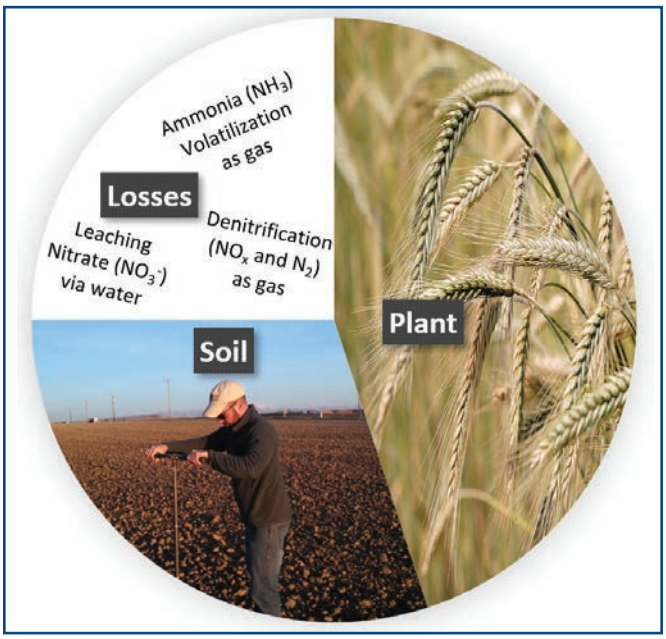

Figure 1. Portions of the circle represent the percentage of fertilizer nitrogen recovery in the plant and soil, and that which was lost to the environment.

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surrounding environment. Research has shown that globally and in the United States only 35% and 40% of applied N is recovered in cereals, respectively. Estimates have not been determined under high-yielding, high-input irrigated systems that are predominant in southern Idaho. Thus, in a recent study funded by the Idaho Barley Commission and the University of Idaho, we used labeled-nitrogen techniques to "trace" nitrogen throughout the plant-soil system, allowing us to determine where the applied nitrogen fertilizer ended up.

Our study compared the older variety Harrington, which was released in 1981, with two of the most widely grown modern malt lines produced in Idaho: ABI-Voyager and Moravian 69. The three varieties were planted on a loam soil at the Aberdeen Research and Extension Center in 2015 and 2016. Labeled nitrogen as urea fertilizer was applied at planting at a rate of 113 lb nitrogen/ac as either a surface or an incorporated application annually where the total applied nitrogen fertilizer plus soil inorganic nitrogen was 190 lb nitrogen/ac. Irrigation and rainfall for the season totaled an average of 16 inches in both years. Surface applied fertilizer resulted in total plant-soil system recovery of 66% and incorporated applications resulted in a nitrogen recovery of 77%. We determined that nearly 30% of the applied nitrogen was recovered in the soil, where the majority of this was in the top 1 foot of soil in the incorporated treatment. Despite differences in fertilizer recovery, there were no measurable yield differences between the surface and incorporated fertilizer applications, indicating that the soil N supply was sufficient to offset any nitrogen losses. ABI-Voyager and Moravian 69 averaged 161 bu/ac with 10.4% grain protein. This was 10 bu/ac greater than Harrington, which had a grain protein content of 11.3%.

Where's the nitrogen?

Overall, 40% or more of the fertilizer nitrogen was recovered in the plant and nearly 30% was recovered

Early season barley research plots.

Research combine harvest of barley plots.

in the soil. The remaining nitrogen fertilizer was lost through the processes of leaching, denitrification, and ammonia volatilization. Losses of 23% and 34% were noted for the incorporated and surface applied urea, respectively. Despite the use of best management practices, all of these loss mechanisms likely occurred during the study. While the exact breakdown of losses was not measured, we can predict the most possible loss pathways. Leaching likely represented only a small portion of the losses as the majority of nitrogen fertilizer was recovered in the top one foot of soil and only small amounts were found in the second and third foot. Denitrification losses were likely small as water-logged conditions are needed to produce an oxygen-depleted environment necessary for the process to occur. Previous research in Idaho has indicated that only a few percent of the applied N was lost via denitrification when malt barley was grown. Ammonia volatilization is likely the largest loss mechanism despite the usage of best management practices. Ammonia volatilization are favored in high pH soils commonly found in southern Idaho and late-season nitrogen losses from plant tissues can also occur. This study provides evidence of above average plant recovery and relatively high plant-soil system recovery of malting barley under high-input, irrigated production in southern Idaho when best management practices were used.

The full article is freely available from *Agronomy Journal*:

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