

Ecosystem Services and Idaho's Farmers

Interview Seven

I: All right, let's begin with a little bit of background information. Please tell us a little bit about how you got into the farming business.

R: I grew up right here on this farm. My granddad homesteaded here. I was the younger brother, youngest son, so as it fell on me. I took it and run.

I: And how long have you or your immediate family been farming in this area?

R: My granddad homesteaded in the early 1900s; but he bought this particular farm in 1912.

I: So a little over a hundred years. You had your centennial anniversary a few years ago. What do you grow?

R: Wheat and barley, alfalfa, and we are into some mustard now, as well as occasionally peas.

I: And how many acres do you farm?

R: We farm close to 5,000.

I: In what ways, if any, has urban expansion or any nearby construction affected you and your farm?

R: So far, urban expansion has not really affected us here. It did for a while because everybody thought they wanted a home in the mountains; but the county came and took care of that with their building lot permits, those types of things. So kind of discouraged us from selling 20 acres up here cause they couldn't get a building permit on it. So we were kind of locked out of that.

I: Do you have any current plans to sell or lease part of your farm in the future?

R: No, not right now.

I: Do you have any idea what you will do with your farm when you stop farming it yourself?

R: Well, right now. We've got seven sons and with creating the GE5, which is kind of funny, my grandkids will be the fifth generation. GE5 is generation five.

I: So that stands for the fifth generation on this land.

R: That's the hopes is that they can as family, brothers really, don't have any sisters, so it's all brothers, can manage, you know, what we have here and make it still profitable. All of them would kind of participate. They kind of do now with harvest. The busy times of year they come back and will help when they can. I have one son that's a full-time employee right now. They

will come back and help. They are in the professional field; so they can make their time. This is my vacation. I'm going to go cut grain for three weeks. That should work in my mind, and hopefully the brothers can get along. Then when they are grown up. Everybody's dream.

I: How important would it be to you that your farm remains an agricultural operation?

R: I think it is probably number one. It's a beautiful. It's prime farm ground. It is prime farm ground. That's the best use for it.

I: Did your grandfather homestead this whole 5,000 acres that you farm?

R: No. We only own about 1,000; but we are leasing 4,000 from different. My granddad homesteaded what they call Antelope Creek. He homesteaded up that creek and then sold that property and bought this one in 1912. I don't know what year he homesteaded. They broke it out basically out of sagebrush, my dad and his brothers.

I: That's a neat family history to be right in this spot. Have you implemented any conservation practices into your farming operation?

R: Tons.

I: What type of conservation practices?

R: We started years ago. We didn't have any grass to waterways, but they did the gully plugs, the dams, the terraces. We didn't do any terraces; but those types of things were the early steps and my dad started those. That was to stop the erosion, stop the water from getting into the river, the mud and silt. Then I took over in 1973. Then I started embracing the no-till. I have been no-tilling since 1985. We cropped everything every year. When I started it was 50-50. You left half the land idle and farmed half every year so it would build the nutrients. Of course, then they didn't have fertilizers. So that was the only way they knew to farm. When I started the direct seed, we tilled everything every year. That was all we had. Nobody had ever invented a no-till drill yet. First ones that I knew of was in the late 1970s. I started watching them in the Palouse area. In 1985, we started. So since 1985, thirty years, we have been direct seed or no till, same word, same practice just different terms.

I: What kind of pesticides and/or herbicides do you use on your farm?

R: We start free-plant with Roundup, then usually a broad-leaf weed type spray. Sulfonate urea is what is the main base now we use. We are after the broad leaves and some wild oat type grass herbicides. But usually the Roundup first will take care of that.

I: How do you make decisions about pesticide and herbicide use and application?

R: A lot of it is timing. I make the call; but I also subscribe to a field service. They come, stage the weeds, the grain, tell me okay you need to put this much fertilizer this year, do all the soil testing. Soil sampling is huge for me. Then we go on their recommendations. It is an

independent company. The fertilizer dealer does that for me to. But with the independent company that's not selling fertilizer and not selling chemicals. So I can take the two recommendations and do as little as I can. It is cost effective.

I: So, the use of GE (genetically engineered – also sometimes referred to as GMO) seeds has been in the news a lot recently, but the coverage only rarely discusses how American farmers are being impacted – either positively or negatively – by this technology. Has the use of GE seeds affected you as a farmer, and if so, how?

R: Really not me, because there is not any genetically modified wheats, barleys or mustards yet. In my mind, I see it as the only way we can go, with yields. If you look at the corns and the soybeans who have been genetically modified, their yield increases. The corns used to be in the 70-80 bushel, now in the 200-300. Wheat is in that position. Wheat has lost acres every year for the last 40 years.

I: Why?

R: Why would you raise when you can raise 200 bushel corn.

I: Because those seeds get more yield off the land?

R: Yes, more yield, so your profitability for those areas that can do it. We can't grow corn here obviously. Soy beans don't do well here either. We are at 6,000 feet, so we are kind of limited. Markets have a lot to do with it too. I'd love to grow canola; but we don't have a market for it. The market is so far away that the freight.

I: So there is one but just not right in this area to make it cost-effective to transport?

R: Yes. . . area in north Idaho has a great market for it and into Canada. Most of the crushers are in Canada for some reason. Don't know what that's all about.

I: The infrastructure has not gotten built here?

R: Yes, and the demand probably is a lot of it. That would be beneficial if we could do that. Then you could have the GE. Probably the main one they do, the first one they look at is number one is drought tolerance. Last year would have been great to have a drought tolerant wheat or barley that will produce well in a drier climate, in dry conditions. The next one is the Roundup Ready technology. That's the most widely used one. That's huge because I can apply one application of Roundup and take care of all of my weeds instead of doing the six or seven other chemicals that we are using. So I could use one. When you understand the gene technology. That's what they say, you change one gene. Soy beans have 57,000; so you change one gene in the soybean. They haven't mapped wheat yet. The sequence is so huge; that they have not mapped it yet. 127,000 genes they have identified in wheat so far.

I: So they are working on it?

R: So they are working on it; but they still say if they turned them loose it will be ten years before we'd have it.

I: If they turned the scientists loose?

R: Yes. If the world would accept. It's odd because there are over 120, something like that, genetically modified fruits, vegetables, stuff we eat every day. But for some reason, wheat is a no-no.

I: Yeah. That is strange.

R: So I'm not sure why the push back has come now; because we have been eating GE soybeans and corn forever. And everything you eat probably has corn in it.

I: Yeah, no, it's one of the reasons it's interesting; cause it's just been in the news a lot recently even though, yes, it's not a new phenomenon or new concept.

I: In general, you have kind of answered your opinion about these crops, but would you say you generally have a positive opinion of them?

R: Yes, I definitely have a positive opinion of GE crops.

I: Turning now to the subject of environmental change, have you noticed any changes in the environmental conditions in your area that seem beyond normal variation from year to year?

R: The weather is 99% of the environment here. We, with the direct seed, have changed the environment in my opinion. Erosion is no longer a concern; which was the big thing as a kid. Because a cloud burst and you don't silt in the river. People didn't like seeing a brown river. The no-till. And it has changed the soil complexity. It absorbs moisture faster and more. So you can. The tests they've done. We can take like 3-1/2 inches an hour. Where the old tilled ground we used to use could take like 1/2 inch an hour before it would erode. That to me is an environmental change.

I: Yes, and one that you have kind of made happen yourself for the benefit of.

R: The thing I do notice, and we don't really know, is the bugs. I don't know why. I tell everybody it's cause DDT finally wore off. But they have taken a lot of the chemicals away from us that worked on these bugs, ones that live in the ground, the wire worm, those type of things. We have got to control them; because they can devastate a crop. I've had them take 40% of a wheat field.

I: So you said wire worms, more of them. Any other environmental changes?

R: The birds, there's a bunch more. I don't know how much that has to do with cropping everything so there is always cover for them. Maybe that's a DDT thing too, I don't know. I'm not sure why the increase.

I: Have you noticed any persistent changes in the length of your growing season, or the first and last frost dates of the year?

R: No. That's all over the board now. We got froze last year on July 24. That was never heard of. If you can't get in the middle of the summer, 24th of July is the middle of the summer. I would say extremes. We had 7-8 inches of rain in August last year, destroyed the crop. We have never had that kind of rain. We have had 2-3 inches; but those come in one or two storms, not 30 days' worth of rain. The same way this spring. March was hot and dry for the month of March. Then May turns out we had over 7 inches of rain here in May.

I: That seems beyond the normal variation?

R: Yes, that's beyond normal. Those are extreme. May and June typically are wet months; but I don't know that we've ever had 7 inches in one month here. It is just kind of more extreme. Here we are 90 degrees now in June. Almost July, tomorrow.

I: Have you noticed any persistent changes in average winter temperatures and average yearly snowfall?

R: The last five years the lack of snowfall is really evident. We built this house twenty years ago. I used to live here in Ririe in the wintertime cause the winters were too severe. We built this house twenty years ago. The first three or four winters, the road out here was blocked. Our older kids had snow days like you couldn't believe cause the highway was closed. Our youngest, they didn't know what a snow day was. There is quite an age difference, but they didn't have a snow day. They didn't know what one was. We have gone to that kind of extreme too. We don't get the snow. Our winds. The winter winds used to close the road. This year we didn't get any wind to speak of. That's part of our water issue now is you didn't have the big cornices up in the mountains that you typically do that build the big glacier fields that take all summer to melt. They are not there. They are gone. Who knows? Next winter will be totally different.

I: What do you think is causing those changes?

R: I don't know that you can put a finger on anything. How much is natural? I'm sure we have been through these cycles before. I remember my dad talking about in the early days being up here and couldn't even get here until the first of May. Then, he has also had those years when they were farming up here in April. So those extremes have been here before. Just not a lot of us have been around that could record that or did record it. They had the dry years where absolutely no rain, crops burn up. We have had those extremes before. I don't know that it really worries me and I don't know that there is anything we can do to change it. The world is pretty big. I know that fossil fuel is getting a lot of blame for that; but I honestly believe everybody could quit driving cars tomorrow and nothing is going to change. One volcano goes off and you'd done everything all the cars driving around could do in ten minutes.

I: Many of us have heard about the drought affecting the western U.S. right now. Have you noticed any persistent changes in yearly precipitation?

R: Traditionally, this dry farm up here (cause we depend on rain for everything, we don't irrigate) got most of its moisture through the snow. It was a winter moisture, so it built subsoil moisture. The plants lived on that and a couple of good showers in the summer made a good crop. We haven't had the winter moisture, so we have not had good subsoil moisture. Back in 1985, when I started no-tilling, we would soil test 6 feet every spring. We had moisture at 6 feet. This drought cycle, the last seven years, there have been several years we have not had moisture more than 2 feet when we start. That's. Some of those were actually good snow years; but the ground was frozen. We had a flash warmup; and so the water ran off rather than soaking into the ground. We are just kind of all over; but you just. I don't know that we could change it. Actually, I think growing grain out here every year at least cools it down some. Cause when you had the old dry farming, you had the black soil or the darker soil; so you would have heat. That caused more severe hail storms. In my opinion, that's what was going on. I remember flying over in a little plane. As you'd go over what they called summer fallow, where they tilled the ground in the summer, the plane would just buck and roll. As soon as you got across it and got over a wheat field it smoothed out. So the air was more stable. You get those updrafts and that to me creates.

I: Because there was more heat on the surface.

R: Yes, the open ground is hotter so that heat is rising. The grain is cooler cause it shades the ground.

I: Do you worry about water availability or maintaining your water rights?

R: We have a few, little irrigation in this region. Yes, water rights is a huge, huge concern. That is, part of the allocation was done back in the good years when there was a lot of water. There are so many things out there that people want to take the water. California, obviously, would take every drop that they could regardless of what it did to us. They need it. Then you have the groups who. I just read another article about they still want to tear the dams down. That was in the Post Register. They want to breach all the dams so the salmon can come up the river naturally. You talk that. We wouldn't irrigate if it wasn't for these reservoir systems to store the water so that we can use it. Once it has gone by. If you look at natural stream flows now, if we were dependent on that, just pulling out of a river for natural stream flow, the Snake River would be dry before it got to Ririe.

I: So you would say you do worry quite a lot about water availability.

R: Yes, and I really shouldn't. I don't have enough irrigated to really worry about it. But it is a huge concern to me to see them want to do that. There is money loss from hydroelectric and all those avenues. The commerce would scare me to death too. We've seen a byproduct of that this year with the unions over in Portland striking and did their work slow-downs. One of the biggest container shippers in the world at Han Jin pulled their business out of Portland. That dock, there is nothing there. I was over there two weeks ago. It is just a big empty lot now. What that did was we had a lot of hay go from here in pellets. They would go in containers to Asia mainly out of here. Now the only way you can get a container is to go to LA or Seattle. Neither one has a

good access. Here you could take a container to Lewiston, put it on the barge system, go down the river system. So you breach those dams. There again. The strike is kind of showing us what would happen. That's not ag products only that go up and down that river. It is amazing the commerce that goes down that river. I had no clue. It is everything from cars to auto parts to.

I: They usually use rivers for some serious transport, yes.

R: There is a lot of barges move up and down that river. You can't do it all in Portland. It just cannot be done. You don't have enough highway system to get trucks in and out. The rail is a one-line down the canyon. It would be a huge fix to think that railroad could ever satisfy that. It just worries me when they start talking that. You could dry this river system up in a hurry. In fact, one of the old water guys said in the late 1800s the Snake River was dry over here at Heise. That was before the reservoir systems.

I: If you have a certain amount of water allocated to you, about how much of that water do you usually use?

R: Yes. Everything we got we use.

I: You said some of your crops are irrigated but some of them aren't. Where and how do you get your water? Is it mostly through irrigation from those rivers?

R: Yes, for the water that's on the irrigated it is the canal systems built 110 years ago. That's how the water gets to those farms. And there is one well.

I: Do you rely on bees to pollinate any of your crops?

R: We don't. The mustard, they put bees on. I guess just some place to put them in the summer. They make a lot of honey off the mustard blooms; but it does not need to be pollinated.

I: Have you noticed any changes in bee populations around here recently?

R: Not really. They are too healthy. You get up in the mountains here and the wild bees, they are kind of ferocious sometimes. I have been stung by a lot of bees in the mountains when I was a kid. Yes, a lot of them. The mountain hornets up here. Boy they are mean.

I: Thinking specifically about changes to the climate, how concerned are you about climate change?

R: I am not. We just adapt. As far as agriculture, we will adapt and work with it. I think part of that climate change has been done through plant breeding. We have shorter growing variety. Shorter days, those types of things have helped that out. I just think we adapt as time goes. It is going to happen. I just always have said that the woolly mammoth didn't dig a hole and bury himself in that glacier. The climate changed. Something happened drastic and fairly immediate. Those things have happened before.

I: So you would think of it more like a cyclical change that has happened throughout history?

R: Yes. We will adapt to it, do what we need to.

I: As farmers and?

R: And as people. What choice do we have? You can holler all you want. It's not going to change it.

I: Do you think that any of the changes to the climate some people are talking about are caused by human activities?

R: I don't know that we can just. There are a few things. When you look at. A lot of the hype is based on the east. You go back there and look at a river. You would say we need to clean up the rivers. There is garbage in those rivers. There is junk in those rivers. These rivers aren't that way. We've protected that. So I don't know that we. I can understand what they are saying. Yes we need to clean up. But here and now I don't think we have changed anything.

I: For you, other than water, since we know that is extremely important, what is the most valuable natural resource for successful farming?

R: Fertilizer. You calling that a natural resource?

I: Sure.

R: It's not man-made. It is mined. We have to have the fertilizers. We couldn't do it without the fertilizers. That is balance in nature basically. Some of the crops. If we had a market for the right crops, we could cut the use of the fertilizers. Peas take a lot of nitrogen. The mustard, it fumigates the ground, takes care of the wire worm. So each plant, you know, if we can diversify. But your market drives 99% of that. I cannot afford to plant peas if I don't have anybody that will buy them. Even with the benefits I get from it, I can't afford that.

I: Are you are worried about the health or availability of any natural resources in this area?

R: Simplot. The phosphate mines are a little concerning just because of the environmental push back that they get. To close those, where do you get your phosphates. Then that's probably an import; which is going to way cost you too much. We export a lot of fertilizer, potash. Doesn't make sense to me how come you can export this commodity and I can't afford to buy it here. What country in the world is willing to pay more than I do for it? Doesn't make, tradeoffs. A lot of the tomato fertilizers are helping to balance nature. You pull off a lot with these crops. So you are just replacing it. I know a guy gets a pretty bad rap in the Midwest where they get a lot of moisture that will leach fertilizer, nitrates. I think some of that, too, is our ability to measure that now. We are in parts per billion. You can give me a parts per billion number and it sounds huge. When it used to be parts per million, it wasn't anything to worry about. That's the kind of thing. We couldn't do without it.

I: Have you changed any of your farming practices or decisions in recent years, such as the type of crops you are growing, when you plant or harvest your crops, how you manage pests, or other major changes, and if so, why?

R: That would be the mustard and that natural fumigation that it does, takes care of the wire worm, and the peas, fixing nitrogen. Those are the type of things we have changed. We'd love to do more of, but there again you gotta have a market.

I: So you are growing some peas to do that. In the recent last few years that has been a decision you made to change?

R: That has been the most recent change was the peas, and we are seeing the benefits this year from what we grew last year. But we didn't have a market for it this spring, so we didn't plant any. It would be ideal with a 5,000 acre farm if you could have 1,000 acres of mustard and 1,000 acres of alfalfa and 1,000 acres of peas and just a rotation; but we don't have that kind of market. Agriculture, we spend so much money and we don't make much from what we spend. It's gotta show a profit at the end or there is no sense of planting.

I: What are the biggest challenges you see to farming in southeastern Idaho?

R: Bugs. That seems to be our biggest. Bugs and diseases.

I: Ruining a certain proportion of your crops?

R: Yes, we were just spraying here an hour ago. The plane was here. The stripe rust has been huge in Idaho this year. There is another one, Burley yellow dwarf virus. We were spraying for the stripe rust. There has never been a problem; but it was blowing up this year. It could take 50% of your yield. It is another thing I'd just not have to spray more chemical on; but I gotta keep that 30-50% yield.

I: Are you noticing more bugs in general do you feel like?

R: I think they cycle too. We've had some huge infestations of like grasshoppers, a couple years they're gone. There is always a few. It is a cyclical thing too. Some years you see a lot of barley thrip. This type of year I expected to see a lot of them; but they had a rain storm last night. A rain storm at the right stage of growth will actually drown them so you don't have to spray them.

I: Sometimes it can be good.

R: There have been. The bugs just seem to be. Maybe we didn't worry about them, used to didn't even know what the problem was. Maybe having a field guy now, work with the University of Idaho a lot as far as diseases and things. Maybe we have always had those and didn't know why the wheat didn't yield so good.

I: Right, so now you have more knowledge and more ability to manage.

R: There are some big ones coming that scare me to death and that's the, called UG99. It is a new stripe rust found in Uganda in 1999. That's where it gets its name. It has the potential to explode and has. It can devastate a wheat crop. It is 80-90% yield loss and there is nothing, there is no chemical that can control it. So far, the two that they have come up with, in two years it has mutated around that. So that spray is not effective. Just the patterns that it's gonna go. It'll go up into India, Uganda, and the trade winds will blow into South America. Those winds will bring it north, or from India get into China, Asia, come across the ocean into North America. So there are two different directions it will come into North America. There have been billions of dollars spent trying to fight that one. The Gates Foundation has put a lot of money, realizing. I think that was the one that caused the famine, the great famine 1912, somewhere in there. They had a huge famine.

I: The same strain?

R: Yes.

I: It has not become a problem yet; but you are expecting it to? So where are you hearing about that and getting that kind of information that makes you worried?

R: Most of the ag publications, University of Idaho, that type of stuff. They have tracked it very, very well. And any ag publication will kind of have a story or two every year about this, what it has done this year. We found it here.

I: Are those ag publications global? You are talking about Uganda.

R: That is probably more researcher. They write articles about this is what is happening in Russia. I have articles about what is happening to the Russian crop and those type of things. They had a drought in Australia. That is kind of a worldwide. Ag is worldwide now.

I: You follow the global farm news?

R: Yes.

I: How are these challenges different from what they were in the past, if they are different?

R: It is hard to know. Just you just go with them. You just change with them. Some of the challenges we have right now if I had had them thirty years ago I would have thought the world is coming to an end. It is one of those things you adapt as you go. I don't know that they are any different. I had a good friend. He always said well I had the same crop. It was just a different reason. I had a disaster this year. I had one last year. But it wasn't the same reason. You always hope for the one good year. I have been looking for that for thirty five years.

I: Is there a best year that you can remember?

R: Nineteen-ninety-seven probably was a good year for the crops. But then the prices were back in \$8, 9 and 10, the price of grain. That was our drought years. So you got less bushels, more money, same dollars.

I: There are two different things that make a best season I guess, prices and yield.

R: Yes, and we have never had the same, not all the same year.

I: What is your favorite thing about farming in southeastern Idaho?

R: The beauty of the land, being able to live right here. That's my favorite. And the people I get to deal with.

I: Other farmers in the area?

R: Yes, the farmers, the businesses.

I: It is beautiful out here. It is amazing with the mountains in the distance.

I: Where do you go to get news about weather, regulations, or other farming-related information?

R: Just my farm publications.

I: Which ones are you thinking of in particular?

R: There are a few magazines that I get all the time. Right now I am on the US Wheat Associates; so I get a news blurb every morning. They have articles from around the world that you can link to and read the whole article. There are 10-15 different stories every morning.

I: All about wheat farming around the world basically?

R: Yes. It gives you a worldwide perspective. Then the farm magazines do very well. They are kind of the same. They will pick up on these same stories; but it is 30-45 days later that you get to read it, not every morning.

I: Most of the publications are more sort of global rather than local in terms of the information and the news that they are telling you?

R: We have the local ones; but even the local ones will pick up on a world article somewhere.

I: Which regulatory agencies, such as the USDA or other government agencies, have you been in contact with in the last few years?

R: Just personally it would be just the NRCS, Soil Conservation Service, FSA, Farm Service Agency are the two main ones. Others that concern are the EPA. I have not had any issues with them. Trying to avoid that. Those are coming.

I: You expect?

R: I expect, yes. That is kind of a bad issue. EPA with the new water regulations. I don't know if you'd read all that. Waters of the US, where they want to control all the waters. They used to control navigable waters; which was something that you get a boat in, navigate in. Then they stretched that to all. They wanted control over all the streams. Now it is any pond of water. So if I have a heavy storm or early melt in the spring and I have five acres out here that's under water for three or four days they want to regulate all that ground under that water.

I: Regulate it how?

R: That's just it. They can come in and tell you maybe you can't plant. You need to do this to it. You have to do that to it. They would. Basically, you lose control of your private land because they want that issue. That concerns me because the soil conservation. Like I told you early on, we built all the dams and terraces. Well, that was. We had heavy storms in those days. After a big storm, every one of those dams would be full. So you stopped all the water from eroding and getting to the river. Now are they going to fly over and say oh, here's a body of water now. I control your farm on this spot. I got gulleys that got 10 or 15 dams down through there. Proved very beneficial. But with the no-till I could take them out now and it wouldn't hurt a thing. One agency has helped us. Now they want to control it.

I: Which agency?

R: NRCS, Soil Conservation. They are the ones that started all the want to build the dams. In fact, they encouraged the no-till programs cause they knew it would stop erosions, and it really has, just put the brakes on it. That has been a plus.

I: Have you had any friends or other farmers in this area who have had negative experiences with what you are just talking about, with the EPA and water regulations?

R: Yes. I was just thinking of one this morning. A friend, he had a spill, a diesel fuel tank. Somebody reported him. They had to come in and dig up all the soil at the cost of the grower. And of course digging more than what they needed. But then he had to pay to haul it to a toxic waste dump. It was diesel fuel. Just my experience over the years, in two years, you're never going to see that diesel fuel anyway. I have spilled it in the fields before, you know, but you never ever see it. It never hurts anything environmentally. That is part of the EPA regulations. Now I just had to put a new tank in here with fuel. You had to have a containment system if you have a fuel tank over 1,000 gallons. There isn't a producer out here that has one smaller than 1,000 gallons. So they want a containment built around them. I put dual wall tanks in. It is twice, three times the money to build that tank so if a person on the inside. Their claim is that if it spills here it will get into the Snake River. I couldn't have enough rain to get it to the Snake River. It's not going to happen.

I: How did you know that you had to build that containment. How did they communicate with you the new regulations?

Through your farm magazines. The Idaho Grain Producers Association puts out very good publications on new rulings, EPA type stuff, regulations, so that we know. Then they have different schools in the winter time, cereal schools, and things like that will alert you. This is coming guys. I wasn't forced to do this; but I know that someday I will. I have issues with what their engineers have come up with for a containment system. They basically want you to set your fuel tank in a swimming pool cause it cannot leak and it cannot have a drain. So you can imagine 6 inches of rain in something that the water can't get away. It is going to be standing 6 inches up on your fuel tank. Is that good for a steel fuel tank? But they have sub pumps, but will never ever dry underneath that tank. It is eventually going to rust the tank out. What they are doing basically, in my mind, speeds up what used to take 30-40 years for a fuel tank to rust through. If you are going to set it in a very moist environment, the rust is going to pit probably twice as fast or better.

I: So you built your own that you prefer?

R: I didn't build it. I bought it. That was one of the specific things that I just knew. That was one of the things, EPA. That's the drone technology that everybody is scared of. You can have a love-hate with a drone. Because the EPA can fly over these farms and say oh he has got a fuel tank. It's not contained. So they come in and start fining you so many dollars a day until you get it fixed; which bankrupts the farm.

I: In general, have the experiences you have had with regulatory agencies been positive or negative? You have talked about a few of these.

R: They are positive.

I: So far?

R: Yes, had a good working relationship with both of them so far. No complaints.

I: Is there anything that the local, state, or federal government could do or provide for you to help you do your job?

R: Stay out of my life. Not really. There again, regulations. There is just a lot of issues we face that would help, the infrastructure, highways, trucking grain, the highway systems need to be maintained, not wait until they are broken down and then try to fix them. The bridge system, I think they have pretty well gone through. Those types of things that the state can do. This highway out here is getting so heavily traveled now. For me, to get off and on the highway with these big trucks, it's almost impossible. You'll find out when you go back out and turn down the highway. You pull out with a big truck. People are mad but you got no choice. A four-lane road out there would help that. A lot of it is because of the tourism this time of year, so I understand. We need the tourism for the state of Idaho. It is good for the state; but it is killing me. I've got to move tractors up and down the highway and the number of times we have had people almost kill us, come up behind you and not see this big green combine going down the highway with flashing lights, you know. We have had them actually hit one, had one hit before.

A guy just wasn't paying attention. The two cars in front of him pulled over. The two cars behind him pulled over. But he side-swiped the ? cause he wasn't paying attention; but it was my fault.

I: Why, who decides whose fault it is?

R: That was just his opinion. The deputy that was there says I'm sorry, sir, but he has every flashing light he can have. He has a pilot car in front and in the back. What more do you need? Well, he said I saw the pilot car. Didn't it click? The highway system, it just needs to be bigger now. And farm machinery is getting bigger and so it makes the roads even smaller. It has to get bigger. You have to farm more acres just because of the machinery. It used to be everybody had their combine; but with the cost nowadays you gotta have enough land to justify even owning one.

I: Do farmers ever sort of share that kind of equipment? Is it usually not feasible to do that?

R: Around here it's kinda not feasible, just because when it is time to harvest you just need to get it done. You can't wait for your neighbor for a week. Fall sets in early. I do partner up. I got a guy in Burley that we own combines together. He is pretty well done in Burley in time for me to start my harvest.

I: There is a different sort of timing?

R: It is the timing. There are companies now who lease combines nationwide. They have got a big fleet of combines. Okay, we will start them in Texas. They aren't going to need them in North Dakota for two months. So they just move up. There are those possibilities out there. It is kind of hard for two close neighbors here to get together and do that unless one machine will actually take care of both of you in a timely manner. At the same time basically, in the same week or so. That window is pretty narrow here in the fall. Last fall just kind of opened everybody's eyes again. Who would have bet on 8 inches of rain in August; which put Burley behind. He is usually done by the second week of August and I start about the second week of August. He wasn't even done until the first of September.

I: You mean harvesting?

R: Yes, harvesting. So I had to go rent a machine.

I: Logistics?

R: Yes. There is a not a lot of machines around; because they are so much money. The dealers will not keep one just on the lot just in case. If it is not sold, they don't order it. Most of them are about \$500,000 now. Dealer is not going to stock an extra combine just in the hopes that I can sell it this fall. Tractors are the same way. Most machinery now, if you want it, you go in and purchase it and then they build it and then you can have it.

I: By order only basically?

R: Yes. There are some dealers out there who will kind of put in orders early knowing that I sold five combines last year I will sell/book three and they can get them built now. There is a little forethinking on the part of a dealer. They have combines now. If I want one next year, I need to have my order in by the end of June.

I: Really, it takes a whole year to build or get prepared?

R: Yes, get prepared. They are that far out. They don't just build combines 24/7. They build tractors for a while, different size of tractors and different combines. They are taking advantage of their workforce.

I: What about other people or organizations in this area, can you think of anything they could do to help you farm?

R: You've got Farm Bureau and those types. They basically fight our political battles. Part of that is the environmental battles that we have to face. You get Farm Bureau, Idaho Grain Producers, those types help with that. We have the universities who do all the research, help us with research getting new varieties, getting around all the.

I: Seeds or soil health?

R: Right. Yeah

I: Are you using aerial drones or unmanned aircraft systems at all for your farming operations?

R: We have a high resonance imaging that we do; but that is a plane goes way up there. They can zoom in on that. We have not done the drones yet. There is a lot of interest. But on a dryland situation around here, if you spot a problem I'm not sure there is a lot you can do about it. With dryland, it is not like if I had a pivot and I saw it was lacking fertilizer I could go pump fertilizer in the water. Out here, you're kind of saying well I'm short on fertilizer I'll know better next year. Those types of things. So I'm not real sure the drones have a big place yet. I think they are just like everything else. I, for years, said GPS I didn't need it and I could drive my own tractor; but I wouldn't have one without it now. The efficiencies that come with that have been a huge savings, huge savings. When they first told me that GPS would save enough money to pay for itself the first year, I'd say no way.

I: Skeptical but it ended up kind of happening?

R: It does. When we were just driving it, you overlapped a foot or so. Now you can set the GPS at a 2 inch minimum. There are 10 inches that you aren't double seeding, double fertilizing. It does not sound like a lot; but when you take that. This field over here was 100-some passes. You got 2 feet per 100 passes, a mile and a half.

I: It adds up.

R: It does, well 100 miles with 1 foot extra seed.

I: Big difference.

R: It has made a big difference. The same with sprays, you don't overspray. Most of the sprayers now have boom technology so that it does not bubble spray. Your boom is sectioned. If it crosses a line, the computer GPS says okay this has been sprayed so it will shut this section off, this section, so all your sections will shut off so that you are not double spraying anything. Your double spray is probably 6 inch to a foot, not like I used to do. Oh, yeah, I'm at the end. Turn it off.

I: Judge it better?

R: Yes, and the cost of those chemicals. Run is fairly cheap but still the cost can be quite a bit if you are double spraying a lot.

I: Are you interested in using drones in the future and if so, how do you think they will be of benefit?

R: I have yet to see. My jury is still out. It wouldn't surprise me. Same as the GPS story, it would not surprise me that down the road it is going to be a benefit.

I: You just mentioned some concerns too about them that I had not heard before, concerns about drones and how they could impact you. Do you have any other concerns?

R: Well, I guess the concern, I hadn't even thought about it, but just watching the deal on the forest fires. They had to ground the planes because too many guys were up there with their drones wanting, taking pictures of the fire. They had to ground because it actually hit a couple drones. You are endangering the life of a pilot because you're out enjoying yourself. When we have ag pilots out here, for somebody to be flying a drone. I had never considered that. I had not even thought of. So you got a hobby. I know they are pretty regulated right now, so that if there is going to be a night pilot in the area I think they are grounded. Apparently not though, cause they lost one over here in my mustard field.

I: Lost one?

R: Yes, it went down. They are over there trying to find it. When they said it was a GPS type locator on it so they could find it. How much mustard are they going to walk down before they find it? How many rattlesnakes they will find.

I: I've heard the rattlesnakes are a lot this year.

R: Yes. I've seen that many. I grew up here and saw one rattlesnake that I can think of growing up. I have seen more in the last year and a half, big ones.

I: You have? Interesting. I've heard that it's a big rattlesnake year; but I have not seen any yet.

R: They are right out in the middle of the highway, just up the highway here a couple miles when you start dropping into the valley. It was like 12:30 at night. I was coming back from a field. I thought it was a piece of iron in the road cause it was kind of curled up. I thought, wow, somebody dropped something. So I swerved around and I thought oh that was a big rattlesnake.

I: Wow, it must have been really big.

R: Yeah. He was really big, really big. They like this cover. Early in the spring, there is no cover and they won't come out into the fields. Now the birds can't seem them. I've seen a lot of birds carrying off snakes over there. I don't like rattlesnakes.

I: Okay, before we finish here, I would just like to ask you a couple of brief demographic questions. Including yourself, how many people live in your household?

R: Two.

I: In the simplest terms, how would you describe your political views?

R: Conservative.

I: And what is your age?

R: I just turned 62.

I: Finally, is there anything else you would like to share with us about farming in southeastern Idaho that we have missed?

R: I think we have covered. I have probably bored you to death.

I: All right, thank you very much. We really appreciate the time you have taken to participate in this research. It helps us understand what issues you are facing and how steps could be taken to help you do your work, which is work we know benefits this community and others.