

Show Transcript
Deconstructing Dinner
Kootenay Co-op Radio CJLY
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Title: Sailing Vegetables in Puget Sound / The Local Grain Revolution VIII
(Sourdough Waffles)

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Jon Steinman: Welcome to Deconstructing Dinner, produced in Nelson British Columbia at Kootenay Co-op Radio, CJLY. This show is heard on radio stations around the world including CKLU, Sudbury Ontario, and KQRP, Salida California. I'm Jon Steinman.

In the *second* half of today's show we'll be revisiting our ongoing and always-exciting series, The Local Grain Revolution – a series that has been tracking the evolution of Canada's first community supported agriculture (CSA) project for grain underway in the Kootenay region of British Columbia. On this *eighth* episode we'll listen in on a *workshop* hosted by a member of the CSA, Lorraine Carlstrom. Just as the project has already spawned involvement from many individuals and businesses in the region, Lorraine recognized yet *another* gap needing to be filled... education... in the kitchen...and just how the 180 members who were part of the CSA's inaugural year, can now use the over 80 pounds of whole grains received back in December. Among the series of classes Lorraine offered to CSA members and the greater community, this *particular* recording today will focus on sourdough, and more specifically, sourdough waffles.

But starting off the show today, we'll step back just a moment, chronologically that is, and look to where part seven of this series left off... sailing 5,000 pounds of those locally-grown grains from the Creston Valley to the City of Nelson. It wasn't long *after* the sailing of the grain that sailor Jay Blackmore embarked on an *on-line* journey in search of any *other* intrepid communities who were too exploring the practice of sailing food... and sure enough, Jay came across Dave Reid of the Sail Transport Company in Seattle, Washington. For less than a year now, Dave has been in the early stages of creating a business around the idea of sailing vegetables from farms neighbouring Puget Sound and delivering them to customers in Seattle. Dave spoke to Deconstructing Dinner over the phone, and shared his exciting business model of a fossil-fuel free distribution system for zucchinis, tomatoes, and many other fresh vegetables.

increase music and fade out

JS: In late October, a fleet of four sailboats arrived in the city of Nelson British Columbia – their hulls filled with locally grown spelt, khorasan, hard spring and red fife wheats, however, unbeknownst to the dozens of those involved in the project was that not too far away, in Puget Sound, was another boat transporting vegetables to customers in Seattle. Not long after the grains had been transported, Nelson resident Jay Blackmore came across Dave Reid and his Sail Transport Company, who, had too, been exploring the idea of sailing food. Both projects were unknown to each other, and as it appears, the threats of peak oil, climate change, and seemingly dysfunctional and inefficient food systems have spawned very similar responses.

Dave Reid: Oh I thought it was amazing and you know that the other thing is like when I first saw the photographs of you guys unloading the dock, I was like...that looks exactly the same as what we did. You know if you saw the photographs together it was like, wow, this looks exactly the same. I was just amazed...this is amazing. We had no knowledge of each other doing this. This is completely independent, and that made me think, we really are on the right track. Here is like multiple organizations are starting to come to the same conclusion. And not just thinking about it...like actually doing it. That was great.

JS: Dave Reid's Sail Transport Company was first conceived around 2005 as part of his work with a group known as Seattle Peak Oil Awareness, and just as Jay Blackmore and Dave first made contact because of similar interests, so too did Dave Reid come across another person planting the seeds of sail transportation.

DR: I'm one of the organizers of Seattle Peak Oil Awareness, and you know we were looking at transportation quite a bit, since about 2005, and fairly early on I started playing around with ideas, like maybe sail is an obvious way to go. I didn't really do a whole lot on it and then I met Jan Lundberg. He had started making inroads on just the idea of a sail transport network. When I met him I thought you know, it's not just me that's thinking along these lines and that's when I started thinking...well hey someone needs to actually go out and do this and make it happen and see if it actually works.

JS: Now indeed this need to redefine how we produce and access food has become quite accepted among a notable percentage of the North American population, but in light of there being so few *known* examples of transporting goods by sail, an important question arises... why isn't anyone else exploring such models... as Dave alludes to, all that was necessary was to stop talking about it and just go out and walk the talk. I asked Dave Reid if he knew of any other groups transporting goods by sail.

DR: Not that we can find. I mean, I heard a lot of people talking on the internet about it, but even Jan hadn't actually tried it. Initially, I thought you know, if I can just go to a farm and get one bag of vegetables and sail across the Sound and sell it then you'll learn some things so we went to a farm and we bought enough produce for about twenty people, and went back to Seattle and sold all. And at that point I was like, well, we didn't actually find any ...you know, the vegetables were still fresh, we all made it, and it seemed to work, and there was no real big hitches so at that point I was like, well, maybe this works.

JS: When Dave first began thinking of how his sailboat might be used for functional purposes rather than for leisure, *food* wasn't the first idea of what to transport... but it became identified later on in the process as the most ideal option.

DR: Initially when I wrote the business model for this, we were thinking about transporting people. Actually in terms of economically, it actually works out better for people, but I think psychologically, people aren't really ready for the time it takes to transport by sail and that was one of the reasons that I thought, well food doesn't... with food, it's really can you keep it fresh and can you get it there within a certain time. It doesn't have to be half an hour. It can take three hours rather than half an hour. And it doesn't really make a whole lot of difference to the freshness.

JS: Only in its first year, The Sail Transport Company is still small, and is comprised primarily of one boat and a small crew.

DR: There's about four or five people who sail not regularly but are more consistent crew on the deliveries. We really have just three boats that have been doing deliveries and most of the deliveries have been on my boat. My boat's the only one that's actually insured for doing this. I mean you don't have to be commercially insured to do this but to get into certain ports, you do. You know, we have one boat that can go anywhere and a couple that can go to certain docks. Right now I have three farms that I've actively been buying and selling food from and I have a list of about another twenty that we're looking at. Building the route...that's quite a lot of work and also a lot of farms work on a CSA schedule and we work more on a route schedule so I can't take ten shares from one farm and then ten shares from another and ten shares from another. Every week I have to ...my sailing schedule looks more like, ok I'll come to your farm and I'll take everything you've got this week, and if that wipes you out for the next week, then I'll go to another farm, so that I don't have to do...I can't run around like a truck doing multiple stops. That would take too much time.

Typical delivery ...we sail to Nash's Organics in Dungeness Spit. Takes us a couple of days to get up there and then we sail to Port Townsend and we sail to Sequim the next day. We pretty much take it easy on the way up. That would be sail with a crew of two to three. There's a guy called Sid Moroni who has an electric truck that he bought 15 years ago and has been keeping it running ever since. He moves our produce from Nash's to the dock. We load, and then when we leave on the way back, we do rotating shifts, 24/7. Takes us something like 25 to 30 hours to get back. When we get back to Seattle we unload at the city dock and we load the produce onto cargo trailers or electric-assisted trike and we either take that direct to door or to drop-off point where people come and pick up the produce.

JS: This is Deconstructing Dinner where we're listening to segments from an interview with Dave Reid of Sail Transport Company based in Seattle. The newly-formed business is exploring the economic feasibility of sailing vegetables across Puget Sound and delivering them to customers in Seattle. One of the goals of the business is to spend no more than .5% of their operating costs on fossil fuel, and so far, that goal has been exceeded, with *no* finances having gone to any purchase of gasoline. As Dave introduced, this is in part thanks to the methods used to transport the vegetables on *land*. Whether it's the electric truck to move the produce from the farms to the dock, or the custom built trikes and trailers used to deliver the vegetables.

DR: We use cargo trailers and we also have an electric-assisted trike made by a woman called Segue Fischlin. Our prize vehicle is an electric-assisted cargo tricycle and it's actually quite a beautiful vehicle. We think we've got probably one of the most efficient vehicles in the US for small loads because it takes so little electricity to run and drives about 20 mph which is all it needs to do a delivery area of a radius of about four miles. It works really well and people love it as well because you just need to look at this thing to understand that if you look at a quarter ton pickup truck and you look at our trike, it's pretty obvious what is economically viable in the long run because pushing around 2000 pounds of metal to transport maybe not even 700 pounds of produce is a lot different from using a vehicle that weighs less than the actual load it's carrying so we're also building custom cargo bicycle trailers that can also be turned into dog carts to get into small spaces and marinas, that kind of thing.

JS: As part of his reflections on the economics of transporting the food by bicycles and tricycles, Dave Reid also spoke to us on the models he uses to purchase the products from the farms. Whereas the grain CSA in British Columbia was transporting food that had *already* been purchased by the customers, Dave uses a different model, and *resells* the food once it's arrived at its destination.

DR: I run the economics of it is dependant a lot on coastguard regulations, on cargo vessels. So we're not registered cargo vessels. In fact as far as I know there are no registered sailing cargo vessels in the US that I know of. There are a lot of vessels that could do that but even those tend to be registered as recreational. But there is no problem with you moving your own stuff, so that leads to buy low, sell high model. Where I go to the farm and I buy the entire load so I own the load during transit—the risk's all mine. I'm not technically transporting cargo for anyone—I'm moving my own stuff and then I resell it. We did our first delivery August last year. We were running produce all the way up until February 22nd and that was really late. Nash's actually had produce all the way up until February because they've got some pretty good root cellaring. And then after that...produce in western Washington is gone at that point and doesn't really start up until June. So we're starting up in June again. But we have been doing honey pretty much all year.

Right now the average loads are about 25 to 50 customers. That's like a demo load and my goal for all this year is to continue servicing those customers. The customers are all individuals right now...to receive a tote of fresh produce delivered either to their door or they come and pick it up at a drop-off point. It works sort of like a CSA but economically I'm not asking customers to pay for a whole year up front. This is so new that my concern this year is not to make money out of this—it's to find out how to do it. The data I have so far lead me to believe that this can scale up into a viable business. But we haven't run for a whole calendar year, so I want to do that and then refine the business for next year from the data.

JS: Having not yet completed a full inaugural year of the Sail Transport Company, the economic viability of such a business is still being worked out, and Dave Reid has *some* ideas on how to make it happen. Of course, using the current economic models driving our food system today, the most common approach to making a business viable and doing so quickly, is growth, and Dave Reid scoffs at such an idea.

DR: Haha, that old growth thing. That's what got us into this trouble in the first place. No, I'm going to be growing pretty slow. We're not going away and the fundamentals behind this that make it economically viable are going to be long and slow and are just going to get better. You see the price of oil going down over the next year, five years, ten years, thirty years...well no it's not—that's a one-way ride. So my take on that is if I had to grow this fast to make it viable, then this would be a silly model. My model is more like grow it steadily, find out how to do it. We've got time on our side and make it long and slow and do it right.

JS: Instead of growth, Dave shares thoughts on what he sees as next steps in making the Sail Transport Company economically viable.

DR: The first thing is finding farms and customers that are close enough to the marinas or dock access, because the land transportation is the hard one. The sailing's not really the hard part. And also in terms of keeping food fresh, as soon as it's on the boat it's at a really nice temperature, but in the middle of summer, the further you have to go once you're off the boat especially if you're doing it in daylight, which most of the time we don't...if we move produce we try and move it at night. So what we're doing is we're using natural refrigeration. If you move things at night and you move things through the water then you don't need refrigeration because it's all cool. We don't have the same kind of problems if you load up a truck in 110 degrees of sunshine and running around during the day, then you've got huge refrigeration costs. And then like any other business, establishing your customers, and creating a buzz around what you're doing and making people feel involved—that kind of thing. If you get the customers involved, and get them excited about it, then the rest is logistics.

JS: This is Deconstructing Dinner. As part of our March 2009 episode of the Local Grain Revolution series, we examined the efficiencies and benefits of combining function and leisure as we were all doing as part of this sailing the locally-grown grains along Kootenay Lake. As can be expected, Dave Reid and his crew have too recognized the beauty of blending the two together, but for them on the waters of Puget Sound.

DR: Well, it's a pretty nice way to go. A day at the office is pretty nice—sailing through pods of orcas with a load of vegetables. It's really interesting—sailing with an actual agenda as opposed to just cruising around. It's really satisfying and I think all the people who crew with me would say the same. People haven't been able to get that level of satisfaction out of sailing for quite awhile.

JS: Now this topic of sailing food is certainly a great example of a growing number of groups beginning to walk the talk and who are truly creating new food system models. But nevertheless, there are always the skeptics, those individuals or businesses who perceive such seemingly “radical” ideas as a threat to the status quo. Often, such skepticism comes in the form of questioning the *practicality* of the new models. This question of practicality closed out our conversation with Dave Reid and you can expect more on his Sail Transport Company on future episodes of Deconstructing Dinner, and you can check out their website in the meantime at www.sailtransportcompany.com

DR: We're running free fuel—how practical is that? When you really look at it, we have no fuel costs. We're talking about comparing against a system that you need aircraft carriers to get oil into your tank. You can't do it without them. So how practical is that? All we need is the wind and tide—it's there, it's going to be around for a long time. So I actually think we're actually the ones that are practical.

Part of what I'm doing here...I want to build a system that can be reproduced and that would be the ultimate test if somebody else says, 'Oh I like the way that you're doing that—hey let's do it that way too'. That would be great.

music: Vancouver British Columbia's Vanessa Richards and her tune, Occupying Army.

JS: This is Deconstructing Dinner, a syndicated weekly radio show and podcast produced at Kootenay Co-op Radio CJLY in Nelson, British Columbia. I'm Jon Steinman. Today's episode is archived on our website at deconstructingdinner.ca and posted under the June 11th, 2009 broadcast. You'll also find a collection of photographs of the Sail Transport Company featured on the first half of today's show.

Moving into the *second* half of the show and part VIII of our Local Grain Revolution series, we take a trip into the home of Lorraine Carlstrom, a resident of Nelson, BC, and one of 180 members who were part of the first year of Canada's first Community Supported Agriculture (or CSA) Project for Grain. As this Local Grain Revolution series has evolved, we've tracked, chronologically, just how a new food system is birthing itself in the interior of the province. Just as a seed germinates, grows and then spreads it's seeds elsewhere, so too has the grain CSA helped spawn new ideas, new projects, and in the case of Lorraine Carlstrom, a new part-time job as an educator.

Following the October 2008 sailing of the grains featured on part VII of the series back in March 2009, the members of the Kootenay Grain CSA received their grains. Because of the uncertainties

inherent with such a project, members of the CSA received *less* than the 100lbs that were hoped to comprise an individual share. The three farms instead produced just over 80 lbs per share, but because the CSA model was used, the farmers still received the same compensation that they were promised before the seeds went into the ground. Because members had *committed* to this risk of possibly lower-than-expected yields, there didn't appear to be any upset members, just some overwhelmed ones... you see receiving over 80 lbs of unmilled grains is not something most North Americans are used to. The grains, for one, need to be milled, or rolled to be used for whatever purpose in the kitchen, and both of these needs were satisfied by two millers making themselves available to members both in the cities of Nelson and Creston. The CSA also made a bulk purchase of grain rollers, a relatively inexpensive tool that affixes itself to a countertop and can produce either a coarse flour or rolled oats for a fresh breakfast cereal. Over 30 rollers were ordered for CSA members. But then, there are the culinary skills...turning those grains and flour into breads, pancakes, crackers or scones, and as someone experienced in the art of using grains in the kitchen, Nelson member Lorraine Carlstrom saw an opportunity to share her knowledge and create some part-time employment at the same time. One of the farmers, Joanne Gailius, also opened up *her* kitchen to members in Creston.

The classes that Lorraine offered included how to make your own bagels, crackers, biscuits, oatmeal and granola, grain-sprouting, and the class that we'll drop in on today... sourdough waffles and pancakes.

The art of sourdough is certainly one that could and *should* make up an entire episode, and perhaps we'll explore that in more depth on future episodes, but Lorraine's experience with grain and her knowledge gained as a Chapter Leader of the Weston A. Price Foundation, provided a pretty solid introduction to this exciting and healthy way of consuming grains. I signed up for the class and soon found myself in a kitchen surrounded by six other members of the community and learning just how, in a relatively short period in human history, we've chosen to consume grains in their raw form. Sourdough, on the other hand, is seen as a tried and tested method to make grains more palatable to our digestive systems and, our tastebuds.

Lorraine Carlstrom: When I first set out on my health journey about nine years ago, grains were the biggest issue for me. It was sort of like, "Ok get away from the white, right, and the enriched, and go to whole." But everywhere I kept running into was whole...the way we were eating it was wrong, and it was actually doing more damage and I was having issues with digestion. I guess the one thing that really struck me is how we've gone wrong in such a short time in human history. It's only been in the last 150 years that we didn't eat grain the way we eat it now, which is like, quick oats and granola and crackers and fast-rising yeast, and that just shifted about 150 years ago.

And then we're talking about grain today but this is seeds, legumes, anything that's a seed of a plant. We don't have cow's three stomachs that can ferment all this, so all these things are seed foods, and nature, which is always so amazing, has it in a preserved form, so it won't sprout, it won't get damaged until it's ready. And so that's what I think is so amazing, that our ancestors have figured this out, but we thought we were so smart and changed it. So we just need to bring it back and there was sort of a skip. For me it's only one generation, I find out I have a Scottish grandmother who used to, according to my dad, always soak her oatmeal before she went to bed, *always!* I said to my dad, "why did you not do it for our family? why the skip?" "Well you know...the 60's...new things...microwaves...quick-rising. Mom's were going to work..." Whatever the reason, it changed, plus commercially, it doesn't work well, for commercial bakers it's not consistent. Sourdough is moody, mine's very moody, and it doesn't work in big-scale ways and so they didn't like it until we could isolate the yeast to make it consistent.

And also I do have sort of a diagram but you guys are pro, way above this, right, to know the different parts of the grains but I can just show you. There's this bran area and remember when we went through our bran phase—everything had to have oat bran or something in it. And this is mainly fibre and some nutrients. Then there's the germ that's really loaded with most of the nutrients. It has lots of vitamins and minerals. And then the endosperm is what mainly our white flour is made of and it's starch but it's not loaded with very many nutrients. And when we put them all together, it's very healthy if we prepare it right. But it's actually harmful if we don't.

JS: As Lorraine suggests, consuming grain that is *not* fermented or sprouted, leaves us ingesting some pretty harmful ingredients, one of the most notable... phytic acid.

LC: And the harm comes from things like phytic acid, which blocks mineral absorption so that actually after a long period of time, and this is like a lifetime of heavy whole-wheat eating, you think you're doing the great thing, and things start breaking down—you get low on minerals and you wonder, ha, a whole lot of hip fractures, osteoporosis, cavities...I mean you think of all the things that we are starting to get that some cultures that were studied before, it never showed up in them. This is just one...I mean there are *many* things that have gone on. But this is possibly one of the answers—that we've gone to whole grain but yet we're having digestive issues which is what the phytic acid will do too, as well it has enzyme inhibitors so it inhibits our own enzymes from working and so it can't even digest it right. So it has phytic acid, enzyme inhibitors, tannins, and complex sugars. Glutens...how many people know celiac disease people—people that can't handle gluten at all. I'm very sensitive to gluten. I have a sister who has gluten intolerance. And what they've found out is when we do what I'm going to show you to do at this class and all the classes on grain, some of that gluten gets broken down so well that even the really serious celiac patients can have sourdough bread or sprouted, when they start doing it, once they've healed their stomachs. So that, I think, is really fascinating. Also cellulose in the plant gets broken down too. And the way we do that to break all these things down...all you need is time, and the main thing to remember is minimum of eight hours. It takes about that much time, and longer is even better, but minimum of eight hours to break down most of these anti-nutrients or preservatives, or whatever we want to call them. So eight hours, that's easy—go to sleep, wake up the next morning. It needs some moisture, so the water is usually the case, but it can also be bone broth, and things like that, but water is usually what you use. And acidity is quite important, so either lemon juice, vinegar, whey, or sourdough, which has acidity in it. So we're going to be using the sourdough today. The other way to do it is by sprouting—and that's another class. But those are the other ways you can do it.

JS: Also as part of the health benefits of fermenting grains through the sourdough process, is the effect of this fermentation on blood sugar levels after the bread is consumed.

LC: This one comes out of the University of Guelph. They took white sourdough bread...so, pure white right from the endosperm of the wheat, and they sourdoughed it. And then they took whole grain, but just did it quick-rising. And they fed these people that had blood sugar issues. They were older and have had some weight issues—they were either diabetic or pre-diabetic, and they tested their blood sugars. And the white sourdough bread did way better than the whole wheat. Their blood sugar stayed really level and steady and the ones that ate the whole wheat, which you'd think would be the opposite, spiked way up and was an unhealthy situation for blood sugar levels. So their next study, I heard, they're going to compare the whole wheat sourdough with the whole wheat non-sourdough. That alone is quite...oh—you're saying that white sourdough is actually healthier than whole wheat, plain. Which is fascinating as far as blood sugar levels go...we're not talking about nutrients or anything like that. And the other one comes

out of the University of Alberta in Edmonton, and I love this one. This guy, Michael Gaenzle...I'm probably butchering his name...he's a cereal microbiologist, don't you love that, the names. He's now at the University of Alberta. He suggests that sourdough cultures act so intimately connected with the people who use them that they are mutually supportive and sustaining in the relationship. So if the microorganisms are part of you and they come from you, and so the bread you ferment with them is tailor-made to nourish and support especially you. You bolster your own health by eating bread cultured with your domestic friendly beastlies. So I just think that's fascinating.

JS: This is Deconstructing Dinner and part 8 of The Local Grain Revolution series. On today's broadcast we're sitting in on a class offered by Lorraine Carlstrom on the ins and outs of fermenting grain through the sourdough process. The featured products prepared as part of the class were sourdough waffles, but before we began combining ingredients, some background on what a sourdough starter is and how to maintain it was shared. Any home baker wishing to use the sourdough method needs to first maintain a sourdough starter as the base ingredient. The starter is a mixture of water, grains, and wild yeast, and can be made at home or purchased from local artisan bakers. Once prepared, the starter can theoretically last for thousands of years, so long as it's fed a steady diet of grain. Stories of sourdough starters dating back generations are commonplace.

As Lorraine shared tips on maintaining the starter, yet another possible economic spin-off of the grain CSA was realized...that is, the creation of a new profession...sourdough sitting.

LC: Now, as far as sourdough...you can leave sourdough for quite a long time. Totally, not even worry about it. You go on vacation, up to two weeks, sits in the fridge. Come back, it's got this brown...what they call *pooch*, on the top. It looks really...disgusting. You're like, oh no, I've ruined it. Just stir it right in, it's as happy as can be. Re-feed it again. The only thing you that you've got to know about sourdough is it's best not to feed it more than that eight hour period. If you keep feeding it every two hours, what it does is get so active that it almost eats itself out really quickly. So if you just steadily, after eight hours, even longer, if you're using it every day, just feed it once a day. I told you guys to feed it one and a quarter cup of flour to one cup of water, which is a nice ratio. But depending on how you like to use your sourdough. I keep it fairly thick because when I do things like scones and stuff, I don't want to add too much of my sprouted grain grinded flour that took me forever to make. So I keep it thick. But if you're always only using it for pancakes you could keep it a lot thinner, because we always have to add water to it to the dough. But if you're going away more than two weeks I say to get a babysitter for it, just to come over and feed it.

JS: Maybe that's a future business for someone in Nelson, advertise babysitting grain...

LC: Well, many times I've used my neighbour girls, or people that are into sourdough, they water my plants and they feed my sourdough.

JS: Matt and I were talking about the economic spin-offs for the CSA.

LC: There you go! There's one. Mackenzie, it's a new job for you. So...double the recipe, so you're going to use four cups of this straight into it, so imagine you wake up in the morning, it's been in the fridge at least eight hours, so you know that most of those things have been broken down, usually...it gets sticky...and especially when you're using high gluten wheats, which this one is...kamut...it really gets sticky, we need the soft wheat doughs which I use a lot also...I feed mine *anything*, any of the wheats, but the lady I learned from, it was hard red or nothing. She

only fed hers raw, I mean red hard, and I don't know why she never told me...but people get very religious about their sourdoughs and you might get very particular about yours too. This does not need to be in an electric mixer, it can just be hand-done. No problem at all. The next ingredient is ...I always put a little bit of sweetener in. It's more for flavour. When you're doing breads, it's a nutrient for the yeast, but you don't need to put it in. But what I use though, for sweetener, and you can use pretty much anything that's whole, so our honey which is local, which probably is the number one you should use, if you want to stay local and using a good sweetener. Maple syrup...at least you're in Canada. We love maple syrup here. Unfortunately, I use Brazilian raw sugar and it's about the only sugar...it goes under the name either Sucanat or Rapadura. It's about the only one that is truly just the cane juice that's been dried, nothing else has been done to it. The next thing we've got to use is eggs. Because we're doing waffles we're going to separate the eggs and beat our egg whites, but if you're doing pancakes, which are easier, just break the whole thing in. But you guys need to take turns—we have four to go. So the white's going in there to beat and the yolk is going in here, and a lot of chefs just grab the whole egg and separate it with their fingers. You can do it like this and it releases it...and it's good to add a little salt. It helps stiffen it up. And it's easier to fluff up egg whites when they're room temperature. So, who's going to beat it?

female voice: I can beat...

LC: ...you can go faster, there you go. The other thing we're going to add is baking soda and it doesn't actually help much with the rising because sourdough is going to do a lot. It does a little bit, but the main thing it does is it cuts the sourness down, and most people don't like a super-sour waffle, I found out. But you can also skip this too. I tell you, even the most mainstream kids that come over here love my waffles. And it's very amazing because a lot of the time they won't want to do full on whole wheat or anything but you give them this waffle and they go...oh, can we have those waffles again tomorrow morning? So it's really fun.

The other thing I add in is butter. The key—I didn't put this on your recipe, but to always be aware of ...this is why classes are so great...you can *see* it. It looks to me that's pretty thick for pancake batter, so I just add a little bit of water. And this is something with sourdough—you can't have exact measurements and you just have to start feeling it out yourself. And after awhile you'll start knowing how that pancake was too thick, or that one was too watery. And if it's too watery, that's when I say that's it's okay to use a little bit of the white flour, so unbleached organic white flour—just add a little bit in. It has the least amount of those anti-nutrients because it's just the endosperm. That's looking pretty good.

JS: Would you ever use milk instead of water?

LC: You could...exactly. That's totally fine to use, for sure. And then we fold in the egg whites. Fold them gently in so it keeps nice fluffiness.

male voice: ...never done any folding before...

LC: Ah, good...

male voice: Wow, it's like stuffing an envelope

LC: Well, first I'm going to dump it on top. There we go...and then you're going to fold it in

male voices: Is that ever stiff...looks more like a meringue.

LC: It is. And you know when you fold, you go from the bottom, you bring it all on top of each other like this...and then it starts to get the lower layers from the sourdough

JS: This is Deconstructing Dinner and recordings from a class hosted in Nelson, BC on the benefits of sourdough and how to make sourdough waffles. The class was offered to members of the Kootenay Grain CSA – the project that we’ve been covering for over a year now as part of our Local Grain Revolution series.

Today’s episode is archived on our website at deconstructingdinner.ca and posted under the June 11th, 2009 broadcast. On that page you’ll also find a sourdough waffle recipe and links to many resources on how to use sourdough at home.

Just prior to the waffle batter arriving onto the hot surfaces of the four waffle irons set up in the kitchen, Lorraine reminded participants to not forget to feed the starter before putting it back into the refrigerator.

LC: Now the one thing we didn’t do yet is to feed our starter. So usually after I use it I always feed it and give it about a cup and a quarter and then a little bit of water...

male voice: Do you always just eyeball it like that?

LC: At first I always measured so carefully, and I think it’s recommended, so you get used to seeing it. Then, as you get better and better, you just eyeball it. And you’ll feel really comfortable about it. You really cannot screw up sourdough too badly. The only thing that I found is chemicals, and that’s why I recommend on your sourdough literature to try and do filtered water if you live in a city, because pretty much every city in North America has chlorine and a lot of them have fluoride. We don’t have fluoride here but as far as the health of the sourdough...some people will tell you you’ve got to be super clean but I was thinking way back there with my ancestors, I’m sure their houses weren’t super clean. And I think that’s actually part of our problem—is we’ve become too clean. So I think sourdough is actually happier if you use your hands, work with it, stir it, don’t use soap, don’t use any sort of chemicals with it...and it’s super happy. Now if you do use a dishwasher and you clean your jars, the dishwashing soap is very toxic, so always rinse your jars before you switch them over. And just make sure that it doesn’t have any residue of the soap. And I think that’s about the only thing that really hurts sourdough. As far as having a cleaner jar, I switch mine over about once every week, sometimes once every two weeks. When it’s getting really crusty, like these little parts get crusty...they can get molds on them, which can interfere with your wild yeast. But sometimes the wild yeast can be fine with it, right? So then I just stick it in the fridge with the flour that I had ground for about three or four days worth of feeding it. And that’s it...and it can stay in there for weeks, and you can decide to make bread with it or you can use it tomorrow morning again, because that will be another eight hours...as long as it has its eight hours of breaking down, it’s good to go.

So I’m going to make the waffles, but the best thing about waffles is that you’ve got to eat them right when they come out. So I’m going to move some of our stuff...

JS: Just line up at the waffle maker and open our mouths.

noises of people moving around, dishes

LC: ...bring those plates. We'll squeeze out and rise and then we have the good old ...I'll only do it on one side because I noticed that other side is cracking. I forgot to set the timer...but I find with sourdough it takes a little longer than with white waffles, white wheat, but about three minutes seems to be the magical number for me to put these on, so if you have a timer, it's great, but one way to tell is when this really strong steam goes down, is when it's getting close...that you'll still have the little steam but not the really super strong steam. So, if you want to put out the plates, you guys, because they're going to be coming out and we can all split them up

Okay I think we've got enough, if you guys want to go to the table. There's butter and there is honey. One thing about honey that's really magical is it has an enzyme in it, especially if it's raw, that when you put it on the bread it starts to pre-digest the carbohydrates, and it actually helps *you* digest those carbohydrates. So that's a kind of magic about honey. But maple syrup is by far the favourite in this household, right Logan? And I don't know if you guys noticed, but it doesn't taste heavy, and it's 100 percent whole wheat. I mean it's *100 percent*. The sourdough has broken all that down and made it so ...nice...

female voice: Really fluffy...

LC: ...and light. There's another one that came out...you guys, if you want another hot one

male voice: Are you two drinking your waffles? (*general laughter, other comments*) Are you remembering to chew? (*general laughter, other comments*)

JS: And that was Lorraine Carlstrom – a member of the Kootenay Grain CSA who saw the new project as an opportunity to educate members on how to use the new grains they received as part of this local grain project taking place in the interior of British Columbia. Lorraine offered a number of different classes, and we'll hear more recordings from her grain sprouting workshop on a future episode of the Local Grain Revolution Series. As a member myself, and as a new home sourdough baker, I can strongly confirm that digestively speaking, consuming grains that have been fermented through the sourdough process produces a far more digestible food than what I had been consuming before. And the sensation confirms just how important listening to our bodies can be in determining what's good for us, and what isn't. As for me, I now view unfermented or unsprouted grains as not being fit for human consumption, and as other CSA members would concur, this new exploration of sourdough-making would likely have never taken place without the encouraging presence of the grain CSA – yet another of many positive outcomes of this innovative project that we've been documenting here on the show.

In closing out today's episode, we'll leave you with one last segment on the topic of sourdough, and some advice to those of us who *don't* have the time to prepare sourdough at home.

LC: The other thing I want to talk to you about is the basic...our labeling on our bread. If you think, okay, I'm going to go out there... and I'll just buy this certain way. Right, I'll go to a bakery and I'll make sure it's whole grain. I'll ask them if it's been at least eight hours in its process, and I found out there are so many ways on labels if I got a bread. It will say white flour or wheat flour. Well, wheat flour isn't whole—that's really frustrating. I mean, you're just wanting to get what you think is whole. Actually, the label should say 100 percent whole wheat sourdough, but *none* of what they call yeast. They'll just say yeast...that means they've added something and that's going to be a shorter time. So even the really great...we have great artisan bakers in town...but you need to call them and ask them...How do you do it? The only way you guarantee is either get to know the baker and talk to him in a nice way, or ask him to make it, or ask him how he does the processing.

I'm not a person who thinks you should ever be 100 percent in *anything*, right? I'm an 80/20 person. If 80 percent of the time you eat really well...20 percent of the time you get invited to a birthday party and they've got white icing with hydrogenated...*go* for it. That's a birthday cake. There's ice cream that day, have an ice cream cone with your friends. If we went 100 percent, we would be unhealthy in another way, so always be a little bit more relaxed about those things. But if you want to be even 80 percent and be sure of it, I think the only way you know that is if you do it yourself and be part of this awesome grain CSA that I'm so excited that you got going. To say local, you see it coming in, it's whole, it's in its whole form. You know it's grown with care, organically...I don't like that term anymore—it's getting stolen...but without any pesticides. And a lot of our grain, even though it might say that it's in this great 100 percent whole wheat...a lot of the time it's gone through a lot of chemicals before it was planted, injected into the seed, GMO...you know, there are so many things that go on in our grains and in all of North America and Europe...and in our breads, they don't even have to put on the label some of the stuff they add...and that's what's really frustrating. So I'd say either stick with the local bakeries, get to know your baker, find out what they use, or do it yourself.

audio clip describing industrialization and commercialization of bread-making, and occupations related to baking: Bread is the foundation of our daily meals. It's the number one food on the tables of people all over the world. Very good reason...It's the most economical source of the elements needed to provide energy and to help build strong bodies. It is wholesome, tasty, and although man does not live by bread alone, without it a meal seems incomplete. Formerly, most bread was made in the home. But it took experience and a lot of hard work to turn out good bread every time. The housewife usually gave a sigh of relief when her efforts were successful.

Today, the baking industry has taken over a good part of the job of providing America's daily bread and other bakery products. The industry produces over two billion dollars worth of baked foods per year. It employs more than 300,000 persons in a wide variety of jobs calling for various degrees of skill and knowledge. ...wholesale bakery, the actual baking is mainly machine operation and except for certain key jobs, much of the work can be done by a person without any previous training.

The first step in bread-making is to prepare the flour by sifting and blending. The other ingredients such as sugar, yeast, shortening, milk, and salt are weighed or measured carefully according to set formulas. A man called a mixer starts the bread on its way to the table by pouring the ingredients into a huge dough-mixing machine. He sets a scale, which weighs out just the right amount of blended and sifted flour. The flour falls from an overhead hopper into the mixer, which is then set in motion. Half a ton of dough, enough for a thousand loaves, can be mixed in some machines. When the dough is ready it is dumped into a trough, which the mixer's helper wheels into the air-conditioned fermentation room. In this warm moist place, the yeast cells multiply and the dough rises. To make good bread, the dough must be allowed to ferment just the right length of time. The skill of the bakery superintendent is called on in working out proper schedules. Next, the dough goes to the divider, where it is separated into pieces the right size for individual loaves. The divider man checks the weight of the pieces and regulates his machine so that the output is uniform. The rounding machine rolls the dough into compact balls. These travel slowly for a time on an endless belt in an air conditioned cabinet or overhead proofer. This gives the dough a chance to rise again. Then the pieces are fed into the molder, which flattens them and rolls each one up into the proper shape for the pans. The pieces are delivered to men known as panners, who place them in greased bake pans. The pan racker puts the pans on racks, which go into a proof box where further rising called proofing takes place. Here, too, temperature, humidity and time must be carefully controlled. Then the bread is ready for baking. The oven loader sets

the pans on the moving steel belt or hearth, which carries the bread slowly through the oven where it can be observed through windows. Finally it is delivered, baked to a golden brown, and the oven dumper puts the loaves onto a belt leading to the cooling room. The oven man has a responsible job. He must regulate the temperature and humidity in various parts of the long oven to ensure bread that is baked to a turn. After cooling, the loaves go into a slicing and wrapping machine. Its razor-sharp blades slice about forty loaves a minute. The machine does all the work, but the operator must watch it closely to see that everything goes smoothly. The wrapping end of the machine, too, is completely automatic.

Wholesale bread is usually distributed by route salesman delivering to stores and restaurants all over the city. But this mass distribution has not put the small retail bakery out of business by any means. In fact, most of America's 30,000 bakeries are small ones, serving their own neighbourhoods. In addition to bread of all kinds, retail bakeries make a variety of foods including cakes, doughnuts, rolls, pies, cookies, coffee cakes, and fancy pastries. Because of this wide variety of goods, to be a baker in a small shop you have to have real skill and experience. Except for electrical mixing machines, flour sifters, and in some cases, ovens, the average retail bakery is not mechanized, so handwork is the rule. One minute you may be getting a batch of cookies ready for the oven and soon after be making pies or cakes. And no matter what you make, you must be really good if the bakery is to keep its customers. Not only good to the taste, but clean and wholesome. The conscientious baker is aware of his responsibility to the consumer's health. The working hours for a baker and his helpers used to be long and arduous, but today most bakeries operate on eight-hour shifts. But a baker must be in good physical condition, for some bakeries are warm places, especially in the summertime.

Bakers usually learn their trade as helpers or by contracting as apprentices. Experienced bakers teach the apprentice the skills of the trade, and when the training period is completed, the apprentice is qualified for a job as a journeyman baker. Baking can also be learned in a vocational school. Nationally known schools in baking are located at the Dunwoody Institute, the Siebel Institute of Technology, and at the American Institute of Baking. Such schools offer ambitious workers a chance to qualify for better jobs in the industry. Their programs include instruction in the science and theory of baking, shop management and related mathematics. These schools have completely equipped bakeries where the student learns all phases of wholesale and retail baking. Courses cover routine shop work on all bakery products and special study leading to a thorough understanding of the chemistry of baking. The subject of fermentation includes the study of yeast. This one-celled fungus, with its facility for rapid reproduction, plays a vital role in baking. When the course of training in a good vocational school is completed, the students are prepared to take advantage of the opportunities for employment as foremen or production managers in large bakeries.

Such men must be highly skilled technicians. There are also positions as executives for men who know baking thoroughly, and who also have some business ability. Men with scientific training are employed in laboratories engaged in routine analytical work for large bakeries or in research work for the industry as a whole. In some bakeries, women are employed in light work such as putting frosting on rolls or cakes. But in retail business, women are in greatest demand as sales persons. Here, a pleasant manner and courtesy are necessary. For women with exceptional ability, there are jobs as store managers for neighbourhood retail bakeries, and for companies, which operate chains of retail sales rooms in large cities.

Owning your own bakery is an attractive goal to those who know baking and enjoy the work. But you must also know management and have enough business ability to handle the bookwork, which is a part of any commercial venture. But whether you operate a shop or work for someone

else, you will find the baking industry an interesting field. It is one, which contributes to mankind's wellbeing. It is a permanent part of America's economy and is due for further expansion. It offers employment to many and a career for those who qualify. If the work appeals to you and you're willing to learn with a sincere desire to get ahead, you may find some phase of the baking industry a worthwhile choice as your life work.

ending theme

JS: That was this week's edition of Deconstructing Dinner, produced and recorded at Nelson, British Columbia's Kootenay Co-op Radio. I've been your host, Jon Steinman.

I thank my technical assistant, John Ryan. The theme music for Deconstructing Dinner is courtesy of Nelson-area resident, Adham Shaikh.

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