

Andrew Riseman

1. Could you start by telling me your name, who you work for, and a little bit about your job
2. How long have you [company/project/work] been involved with the BC Salmon industry?
3. What policies and regulations have most significantly impacted your work within the BC salmon industry?
 - a. Organic cert & food safety handling for fish & plants
 - b. Understanding these regulations needed to know
4. How has your personal role evolved in the Vancouver Food System?
 - a. Dramatic! Hortà UBC Farm
 - b. Aquaponics- Helping Farm: \$, healthy food
5. What significant changes over the past 40 years have impacted [company/project/work] most significantly?
 - a. Paradigm shifts: Science/knowledge
 - i. Farm was traditional research station- several disciplines did research, isolated “systems approach”, sustainability, and how it should intersect w. food system
 - ii. Land tenure-how we use land. Plentiful mindset (quick development, high output)à Scarce (not much land, need high yields)
6. What do you see as the biggest challenge to the sustainability of our current food system?
 - a. **Food literacy!** People don't know where food comes from, don't care, and not taking time to find out where to spend \$. Should know, because # is what determines
7. Tell me about your [company/project/work]. Is there any aspect of your work that you feel touches on issues of sustainability? Tell us about these.
 - a. Aquaponics: all about **sustainability**. effluent, full waste reutilization, energy efficiency. Way forward is land based.
 - b. *Should we be moving to complete land based system?*
8. How does the salmon industry affect food security/sustainability in BC?
 - a. Land based systems-
9. What are the greatest factors/ influences surrounding sustainability issues within the BC Salmon industry?
 - a. Environmental, economic, and social aspects
 - i. Env: sea lice, escapees, transgenic, Atlantic
 - ii. Economic: not a lot of ppl making money yet
 - iii. Social- training ops, First Nations & Aquaponics
10. What do you see as the biggest challenge to the sustainability of our current food system?
11. Are there any misunderstandings about the BC Salmon industry that members of the public may have that you want to clarify?
 - a. Not all fish are the same—foot literacy! Farm raised- what does farmed mean? Is it sustainable? Animal welfare? Organic? Antibiotic free

- b. Salmon Industry must do better job informing the public about what it is producing and differentiating them. Ppl think they are fundamentally different, but all things to store are 'farmed raised'
- 12. Food literacy- do you see any solutions to get people involved?
 - a. Food is the thing we do 3 times a day- if ppl don't care, they wont later. Childhood programs, motherhood programs, *start young and kids make better decisions.
- 13. What do you think the biggest milestones have been over the last four decades in the BC Salmon industry?
 - a. *not a fish historian- fishing rights, limited catches, intro of releases to maintain stocks, First Nations & their traditional fishing methods- sustainability have been lost! Selecting for size, and releasing.
 - b. Who can fish, when where and how
- 14. What have been your greatest achievements/ failures in the past 4 decades and why do you think they have worked/ do not work?
 - a. (UBC farm context): Greatest: Personally, convincing board of governors that we are of value of the Unit, and worth preserving. Legitimized activities, preserved them, raised profile (not only place where young ppl dig in soil; community outreach hub & Research centre)
 - b. Failures: If any, issue not of meeting expectations. Farm is at full capacity, and more ppl want to be engaged, but we are at capacity so can't meet others expectations.
- 15. Does [company/project/work] have difficulties in marketing, advertising or promoting the salmon industry to the public?
 - a. Farm has nothing to do with Salmon Industry right now, but if we do, not sure what kind of fish
 - b. Farm is fundamentally a grassroots org. Saved it, and moving it forward. Brand recognition & loyalty strong b/c of this. So no.
- 16. Where do you see your [company/project/work] in the future?
 - a. (UBC Farm & Aquaponics) Research platform, model training facility, for enthusiasts and commercial operators.

Ocean Wise

- 1. Could you start by telling me your name, who you work for, and a little bit about your job
 - a. Sustainable
 - b. Work w. OW to help business to ID sustainable seafood options & connect restaurants with suppliers for **access**
- 2. How long have you [company/project/work] been involved with the BC Salmon industry?
 - a. OW only around for 9 yrs (2005). Not specifically w. Salmon Industry
- 3. Start
 - a. In 2005 w. 16 restaurants, Monterey bay aquarium started a consumer wallet guide, and they worked with them to consumers more aware.

- b. Canadian distribution of these wallet guides at VA. Still difficult to use, so VA wanted to make it easier
4. What policies and regulations have most significantly impacted your work within the BC salmon industry?
 - a. OW doesn't work w. gov. more on consumer side so policies and reg. come into play when assessing fisheries, but not major focus.
5. How has your personal role evolved in the Vancouver Food System?
 - a. With herself and OW main focus was w. restaurant and chefs to ID sustainable seafood, now working with seafood suppliers- **engaging** suppliers. More directly with farmers and on **producer level and lg scale suppliers** to facilitate transaction through sustainable food options.
6. What significant changes over the past 40 years have impacted [company/project/work] most significantly?
 - a. Major things that resulted in awareness is collapse of Atlantic cod fishing on east coast. In 1992 moratorium on Atlantic cod (Around for over 500 yrs). Was the 1st large scale industry closure, and had a serious impact.
 - b. Misconception that our oceans were an endless bounty- this showed ppl it was not the case. "Oceans can keep up with us"
 - c. 'Sustainability issues are a major concern- need proper management and regulations in place to ensure we're not over fishing'
 - d. Need programs like OW to educate ppl so they're making better choices
7. What do you see as the biggest challenge to the sustainability of our current food system?
 - a. **Probably **consumer awareness (literacy)** and education, especially about sustainable seafood
 - b. Education is key in terms of providing consumers w. proper knowledge for ppl to make better choices (we do research for them)
8. Tell me about your [company/project/work]. Is there any aspect of your work that you feel touches on issues of sustainability? Tell us about these.
 - a. We work directly w. sustainability!
 - b. Work w. businesses, restaurants, seafood suppliers, retailers (whoever is in line) to ID and choose better seafood options (lots of research w. Monterey Bay Aquarium to know which fisheries and **aquaculture** choices are better and make those connections throughout supply chain .
9. How does the salmon industry affect food security/sustainability in BC?
 - a. N/A
10. What are the greatest factors/ influences surrounding sustainability issues within the BC Salmon industry?
 - a. Issues: Concerns w. BC Salmon & Fishers in general is **climate change** and affect on Wild populations- salmon are sensitive to temp fluctuations for spawning

- b. 13 of past 20 summers are above of warmest on record, and temperatures are rising- salmon are vulnerable to predators, parasites, and disease. >22C = mass die off
11. What do you see as the biggest challenge to the sustainability of our current food system?
- a. **Access** to sustainable foods, and seafood in general
 - b. OW is increasing access, 10 years ago **awareness** was not there, In VAN it is higher, and is much lower east and other locations.
 - c. Take time to education consumers
12. Are there any misunderstandings about the BC Salmon industry that members of the public may have that you want to clarify?
- a. **Literacy:** (For OW) sees that, in respect to Salmon, they see Atlantic Salmon and are unaware that it *is* farmed. There is no WILD commercial fishing for Atlantic salmon (overfished) so open net pen farmed, few land based. A few though which are better options.
 - b. Seafood in general: ppl think that frozen is NOT fresh, but not true. Flash frozen at sea is much fresher than fresh fish not frozen. Ppl need to realize frozen is not always the best option. (**literacy again**).
13. What do you think the biggest milestones have been over the last four decades in the BC Salmon industry?
- a. N/A
 - b. Fish in general: BC Ground fish, good example of fishery is that it is integrated. Not as much by-catch which helps counting
14. What have been your greatest achievements/ failures in the past 4 decades and why do you think they have worked/ do not work?
- a. (Ocean Wise) Growing 570 partners dedicated to sourcing and selling sustainable fish. Partners across Canada.
 - b. Success of OW: Working with chefs. The ambassadors of sustainable seafood. High profile chefs too- 4 seasons chef biked across Canada and raised awareness
 - i. Celebrities using their voice
15. Does [company/project/work] have difficulties in marketing, advertising or promoting the salmon industry to the public?
- a. OW lucky b/c 'good news storey', especially in Vancouver and media willing to share their story
 - b. More difficult in other markets
 - c. Don't market or promote salmon specifically, but do make recommendations
16. What makes a salmon sustainable or unsustainable?
- a. 4 criteria (for all seafood) is abundance and resilience. Short lived, reproduces quickly w. lots of offspring.
 - b. Management of fisheries- strong management in place in terms of quotas, total allowable catches to ensure no overfishing
 - i. Regulations for certain fish

- c. Amount of bycatch associated w. fisheries- no endangered and threatened fishes
 - d. Amount of habitat damage bottom nets vs. rod/reel w. min impact.
17. Where do you see your [company/project/work] in the future?
- a. Ultimate goal is that sustainable seafood be the *only* option for Canadians and world
 - b. Diverse fisheries and aquaculture ops providing consistent supply of seafood of seafood and still provide vital env. ..?
 - c. Industry plays major role in affecting this change toward sustainability industry and conservation organizations work together to move forward and sourcing sustainable options
 - i. Industry must be involved & following good management

Skipper Otto

1. Could you start by telling me your name, who you work for, and a little bit about your job
 - a. Sean from Skipper Otto and part owner
 - b. Skipper Otto is growing, so management and fishing and working with fisherman
2. How long have you [company/project/work] been involved with the BC Salmon industry?
 - a. Skipper Otto CSF started small as a side project in 2009.
 - b. Skipper Otto the person fishing for salmon since 1969
 - c. Started as a small business, small-scale sustainable fishing, CSA type box but for fishing. CSF= **community supported fishing**
3. What policies and regulations have most significantly impacted your work within the BC salmon industry?
 - a. Heavily regulated- resource extraction. Moving to quota system. Still has yet to move out
 - b. Must buy more licenses for more area. So restricted travel
4. Is it feasible to buy more licenses?
 - a. SO does not have area E area, so no licensing for Fraser
 - b. Started at Aug, and moves south. No river license
5. How has your personal role evolved in the Vancouver Food System?
 - a. SO always knew that direct marketing/sales was better than large corporation/company
6. What significant changes over the past 40 years have impacted [company/project/work] most significantly?
 - a. Industrialization of the industry (mechanizing, capitalization)
 - b. In the 90's- Davis plan capped salmon boat licensing since 70s to buy old boats or licenses off of old boats
 - c. Before that, smaller boats. No new licenses but could roll licenses together. **Patterson?** Build a huge boat and didn't reduce cap of whole fleet, actually increased. Less small boats, and fewer big ones. Made small fleet irrelevant..
 - d. Monopolizing of industry- big companies merge and competition disappeared

- e. Lg. scale aquaculture takes away market for small ocean fishers
 - f. Rise of awareness like CSF and CSA etc. food movement a new opportunity for these fishers
7. What do you see as the biggest challenge to the sustainability of our current food system?
- a. (Ocean)- the amount of corporate domination.
 - i. Hook & line with SO for tuna, but hook and line doesn't overfish. Bigger boats use big nets- lots of by-catch (dolphin). Lots of damage! And ppl don't know it. Its offshore, so not regulated much and will fish off coast when no navy to regulate
 - ii. Fleets on BC Coast until 1977 when 200-mile international control area was enforced.
 - iii. Companies that are Shareholder/ large corp – “not same built in desire to see next generation continue” (50 min on movie)
 - 1. Dangerous potential over-extraction
8. Tell me about your [company/project/work]. Is there any aspect of your work that you feel touches on issues of sustainability? Tell us about these.
- a. (industry)- want viability for independent small scale fisherman- better price (\$) for independent fisherman and keeping up interest in what they're doing and increasing **public knowledge by connecting public with fisherman** (52 min)
 - b. (Ecological)- only fish use low impact methods,
 - i. **Education** on fishing sustainability, and eating sustainable fish
9. Is SO goal always sustainability?
- a. Always the idea, but increasing this as they see success.
 - b. Mislabeled seafood! They stay transparent
 - c. Salmon take nutrients up river
10. How does the salmon industry affect food security/sustainability in BC?
- a. Fish should be part of diet for those eating protein- low carbon on coast
 - b. Salmon take nutrients up river
11. What are the greatest factors/ influences surrounding sustainability issues within the BC Salmon industry?
- a. Industry- monopolization an issue. Difficult to be a new buyer into this industry
 - i. Cant get a buyer's license – can price fix on buying things.
 - ii. Price fixing open b/c they're consumers
 - b. Fish Stocks- Worry about placement of what can destroy the stocks- we *can* manage stocks
 - i. Poorly **managed** fish farming
 - ii. Conflict of interest in dept. of fisheries
 - 1. Promotes fish farming industry, but should be protecting stocks.

- iii. Land based factor- land use around salmon.
 - 1. Logging- landslide wipes out spawning zone (1913 b/c CNR blasted a tunnel, and land slide in river)
 - 2. Agriculture – pumping water out of river affecting spawning(1.00)
 - 3. Mining (Mentioned below)
 - c. Climate change
 - i. Water- raining more or less?
12. What do you see as the biggest challenge to the sustainability of our current food system?
- a. Monopolization- fewer small stakeholders! More large!
 - i. Agribusiness and lots of farmland
 - ii. One company and huge stake in halibut quota or salmon boats
 - 1. Too much lobbying power and policy decisions made through these large corps.
13. Are there any misunderstandings about the BC Salmon industry that members of the public may have that you want to clarify?
- a. Was an over harvesting problem, but *not necessarily* the case
 - b. Fact is, that Salmon are resilient species- reproduce quickly
 - c. First Nations took out a lot of fish many years before for 1000's of years- it is naturally sustainable if we watch what we're doing.
 - i. Watch mining, forest revenues
14. What do you think the biggest milestones have been over the last four decades in the BC Salmon industry?
15. What have been your greatest achievements/ failures in the past 4 decades and why do you think they have worked/ do not work?
- a. Fishing safely for 40 years as a family (or more) and managing to stay around for that long= proud
16. Does [company/project/work] have difficulties in marketing, advertising or promoting the salmon industry to the public?
- a. Not so much- starts slow, but spreads word of mouth- *public is interested*
17. Where do you see your [company/project/work] in the future?
- a. Want to be able to control quality and take hold more- looking availability of creating small processing plant.
 - b. Process locally as much as possible
 - c. Do as much as they can in house
 - d. More opportunities- canning line?
 - e. Want to make changes for industry as whole, rather than just communities. So growing helps.

Tony Farrell

- 1. Could you start by telling me your name, who you work for, and a little bit about your job
 - a. Work for UBC, position in LFS: Canada research chair, tier 1, for Fish physiology, culture, and conservation

2. How long have you [company/project/work] been involved with the BC Salmon industry?
 - a. ~10 yrs through Fish phys research
3. What policies and regulations have most significantly impacted your work within the BC salmon industry?
 - a. 1. Restriction of net-pen aquaculture in big-sea environment
 - b. World has been growing in aquaculture (recognizes that ag land is **diminishing**) and world Pop growing
 - i. We don't catch more than we've ever caught
 1. Increase in demand met by aquaculture on global scale
 2. BC met demand from '86-2000 then put moratorium
 - c. 2. Interest in closed-containment aquaculture- controlling water quality of where fish live, and not releasing waste water to env.
4. How has your personal role evolved in the Vancouver Food System?
 - a. Producer of wastes- (?)
5. How do you reduce waste
 - a. Dilution
 - b. Monitoring
6. What significant changes over the past 40 years have impacted [company/project/work] most significantly?
 - a. Increase in fish conservation – tax wild fish to limits
 - i. Habitat protection & Over fishing
 - b. Growth of aquaculture- more sustainable model (19.37)
 - i. Available from farmed Atlantic salmon & wild fish in store.
7. Where did your interest in fish research begin?
 - a. Just loves fish- touches on their incredible diversity (fascinates him) especially in extreme environments
 - b. Salmon in particular? *** 6.28 min
 - i. If you've ever watched a salmon what a salmon does in its life, its just a marvellous example of sheer determination, stamina, to get back to its spawning grounds. What, when you see that for the first time, it just gives you this [this powerful impression of what nature is all about, you can give it all, give your life to **reach** your goal..."
 - ii. Only two salmon need to make it back
8. What do you see as the biggest challenge to the sustainability of our current food system?
 - a. Continue to have too many children
9. Tell me about your [company/project/work]. Is there any aspect of your work that you feel touches on issues of sustainability? Tell us about these.
 - a. Taking a desirable food product, and minimizing the ecological footprint
 - b. By doing so, can attack the problem in several ways- use more sustainable products
 - i. Aluminum, trees, ?

- c. In Western world we love to eat salmon- salmon doesn't need to be completely coniferous, can feed them diets of canola, etc. (research going on)
- 10. How does the salmon industry affect food security/sustainability in BC?
 - a. Enormously. Pacific salmon only come back in fall
- 11. What are the greatest factors/ influences surrounding sustainability issues within the BC Salmon industry?
 - a. Food supply for the fish [aquaculture]
 - b. **Changing environment** – increase water temp, sites aren't good (low O2)
 - c. People don't understand industry (believe in hyperbole)- lots of people (12.17)- education big now
- 12. Misunderstandings of BC Salmon industry
 - a. Parasitic disease is natural- sea lice- exist on many fish. When you incubate and bring them in close contact w. each other.
 - b. Wild fish- also have sea lice. Suggested they would collapse B.C. of parasites from farmed fish- proved to not be the case (info put out was wrong)- science proved that sea lice does not kill baby salmon
 - i. Misinformation from website was removed.
- 13. What do you see as the biggest challenge to the sustainability of our current food system?
- 14. Are there any misunderstandings about the BC Salmon industry that members of the public may have that you want to clarify?
- 15. What do you think the biggest milestones have been over the last four decades in the BC Salmon industry? 16.42
 - a. Incredible- you can walk into [Costco] and get pure protein, taste good, high quality product
 - b. 40 years ago log boom chain with tarp b/w logs and fly buckets of fish larvae in advent of aquaculture in can
 - c. Mom & Pop shops did not know how to culture fish. Wonder when there would be a profit? Problem is that it takes ~2 years for salmon to grow to size to sell.
 - d. **Technology,**
- 16. **Effects of non-BC based management system for aquaculture**
 - a. Issue- 'fantastic', people invest in BC, provide Jobs, as long as these large corps have B.C representation..
 - b. Know BC ppl care about env. Pride
 - c. Win-win for job creation/food supply.
 - d. *Largest legal export is fish 18.37
 - i. Fish- economics! Water!
 - ii. Expansion- Some backers in BC, Jim Patterson
- 17. What have been your greatest achievements/ failures in the past 4 decades and why do you think they have worked/ do not work?
- 18. Does [company/project/work] have difficulties in marketing, advertising or promoting the salmon industry to the public?
 - 19. Where do you see your [company/project/work] in the future?

