

Aquaculture Innovation

A SweetSpring Coho Perspective

By
Per Heggelund, Founder & President



Who We Are

- Privately held company incorporated in 1988
- Locations in WA
 - Main office - ***Seattle***
 - Freshwater, based farms –
Rochester & Shelton
- Our brands
 - AquaSeed[®]
 - Domsea[®]
 - SweetSpring[™]



Domsea Heritage

- Domsea[®] Coho pedigree stock founded by Union Carbide in 1969
- Acquired by Campbell Soup in 1979
- Acquired Domsea[®] Coho from Campbell & relocated to Swecker Salmon Farm in 1991
- Longest pedigree bred salmon: 19 generations (38+yrs) based on 40 families



AquaSeed[®] 

Domsea[®] Seedstocks

- Domsea Coho
 - Japan
 - China
 - US
 - Vietnam
- Domsea Donaldson Steelhead
 - China
 - Japan
 - US
 - Vietnam



Salmon Conservation

Gene banking/safety-net program

- Public-Private-Partnership
- 10 years maintaining genetically diversified stocks
- ESA listed mid-Columbia Chinook
- Twisp, Nason & White River stocks
- Sponsored by Grant County PUD & permitted by NMFS & WDF&W



SweetSpring Adaptive Strategy

- Produce Coho Salmon breeding stock adapted to freshwater landbased production
- Sustainably raised Coho that meet the highest conservation standard
- Produce Coho with exceptional consumer approval

The SweetSpring Advantage

- Domsea Coho stock bred and reared in fresh water
- Pathogen free water supply
- Track record for Coho reared in tank system
- Experienced management team



Smolt Production

- 98% water recirculation system
- Optimum 15C (58F) growing temp
- 60gr smolts grown for larger grow-out tanks



Water Reuse Food Fish System

- Produce more salmon using less water
- 85% water reuse
- Eliminate harmful effluent discharge
- Control rearing environment



Collaborative Innovation



Creating positive outcomes for future generations





BEST CHOICES	GOOD ALTERNATIVES
<p>Abalone (farmed) Catfish (US farmed) Clams, Mussels, Oysters Cod: Pacific (longline) Crab: Dungeness, Snow Halibut: Pacific Lobster: Spiny (US) Pollock (wild-caught) Rockfish: Black (CA, OR), Sablefish/Black Cod (A, Salmon (wild-caught from Sardines Shrimp: Pink (OR) Spot Prawn (BC) Striped Bass (farmed) Sturgeon, Caviar (farmed) Tilapia (US farmed) Trout: Rainbow (farmed) Tuna: Albacore, Bigeye, Yellowfin (troll/pole-caught) White Seabass</p>	<p>Wild-caught (US), (imitation) (CA) (CA, OR) (from AK, BC, OR, WA) (A, OR, WA) (caught) (R, WA) (n,</p>

Seafood Watch

5 Sustainability Criteria



- Use of marine resources in fish feed
- Risk/impact of escapes to wild stocks
- Risk/impact of disease and parasite transfer to wild stocks
- Risk/impact of pollution and habitat effects
- Effectiveness of the management regime

<http://www.montereybayaquarium.org>



Super-Green Seafood

Super Green Requirements

- **Mercury** below 216 ppb
- **PCB** below 11 ppb
- **Omega-3s** > 250 mg/day

<http://www.montereybayaquarium.org/>

SweetSpring Salmon

- **Mercury** – 25 ppb
- **PCB** – 10.5 ppb
- **Omega-3s** – 437 mg/day

***Ranked Seafood Watch
"Best Choice"***





- Colony Partners are in Montana
- Product quality, human health and honest work key components of Hutterites efforts
- Colonies building 300,000 pound/year Coho production units
- First two units under construction now
- We will sell theses Coho under SweetSpring Brand





Healthy Choices for Healthy Oceans  SeaChoice

- Earned number one ranking for supermarkets by Greenpeace Canada
- Committed to purchasing only sustainably produced seafood
- Committed to buy most SweetSpring Coho
- Financially support SweetSpring to increase production at Rochester



Mission:

- Protect habitat in selected watersheds across the North Pacific
- Reform aquaculture practices to substantially reduce risk to wild fish from escapes, disease/lice transfer, and unprocessed waste outflow
- Reform hatchery propagation practices to safeguard the productivity and diversity of wild fish
- Ensure that salmon fisheries are managed sustainably

SweetSpring Collaboration:

- Provide grant to expand sustainable re-circulation system at Rochester

Paul Greenberg in Four Fish

- We may *“...have reached a crossroad with salmon.”*
- *“Instead of putting artificial selection pressure on salmon it may be time to put selection pressure on farmers.”*
- *“Let the fittest, most closed system survive and reap the economic benefit inherent within that victory.”*

Market Change & Acceptance

- Sustainably raised salmon
- Ranking vs. Certification
- SweetSpring status and challenges



Productivity Improvements

- Biosecurity
- Water conservation
- Feed quality and conversion
- Domsea strain improvements



Regulatory Adjustments

- Salmon conservation focus on P-P-P
- Food safety: USDA vs. FDA
- Food security
- Lacey Act vs. livestock



Thank You...



www.sweetspringsalmon.com /
www.aquaseed.com

