

AquaSeed's SweetSpring™ Salmon

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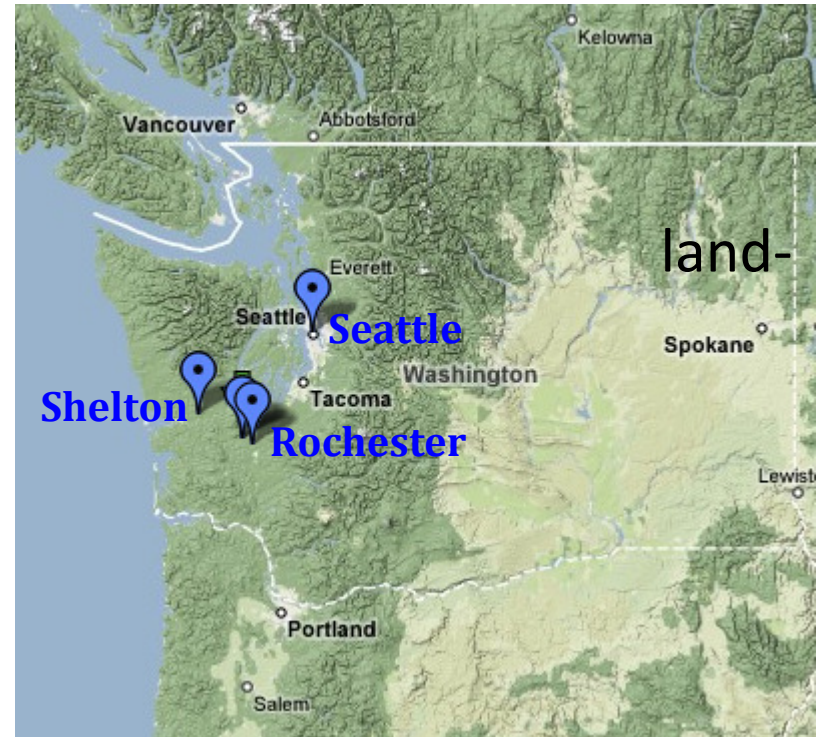
Overview

- Who We Are
- SweetSpring Smolt RAS System
- SweetSpring Growout RAS System
- Purging System
- Feeding System
- Fish transfer system
- Harvesting System



Who We Are

- Privately held company incorporated in 1988
- Locations in WA
 - Main office - ***Seattle***
 - Freshwater based farms –
Rochester & Shelton
- SweetSpring Contract Growers
 - Teton Fishery
 - Hill Fishery



Domsea Heritage

- Domsea[®] Coho pedigree stock
 - founded by Union Carbide in 1969
 - Acquired by Campbell Soup in 1979
 - Acquired by AquaSeed and relocated to Swecker Salmon Farm in 1991
- Longest pedigree bred salmon: 20 generations (40 yrs)



SweetSpring Smolt RAS System

- HTE microbead biofilter
- Two 4.6m x 1.2m tanks
- One 1.8m x 0.9m first feeding tank
- Two radial flow separators
- Foam fractionator with ozone
- Two Low Head Oxygenators (LHOs)
- Advanced oxidation system (Ozone + UV)





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TASTE BEYOND THE SEA





SweetSpring Smolt RAS System Parameters

- 2650 lpm recirculating flow
- 38 lpm replacement water
- 100% system volume replacement per day
- 20 minute system turnover rate
- Optimum 15C (59F) growing temp
- Produces 24,000 smolts @ 60 grams every two months

Sweet Spring Grow-out RAS System Bio-plan

- Produce 181,000 kilos of 3 kilo fish per year
- New crop added every two months
- Each crop is moved to a larger tank every two months
- Eight month grow-out from 60 grams to 3 kilos

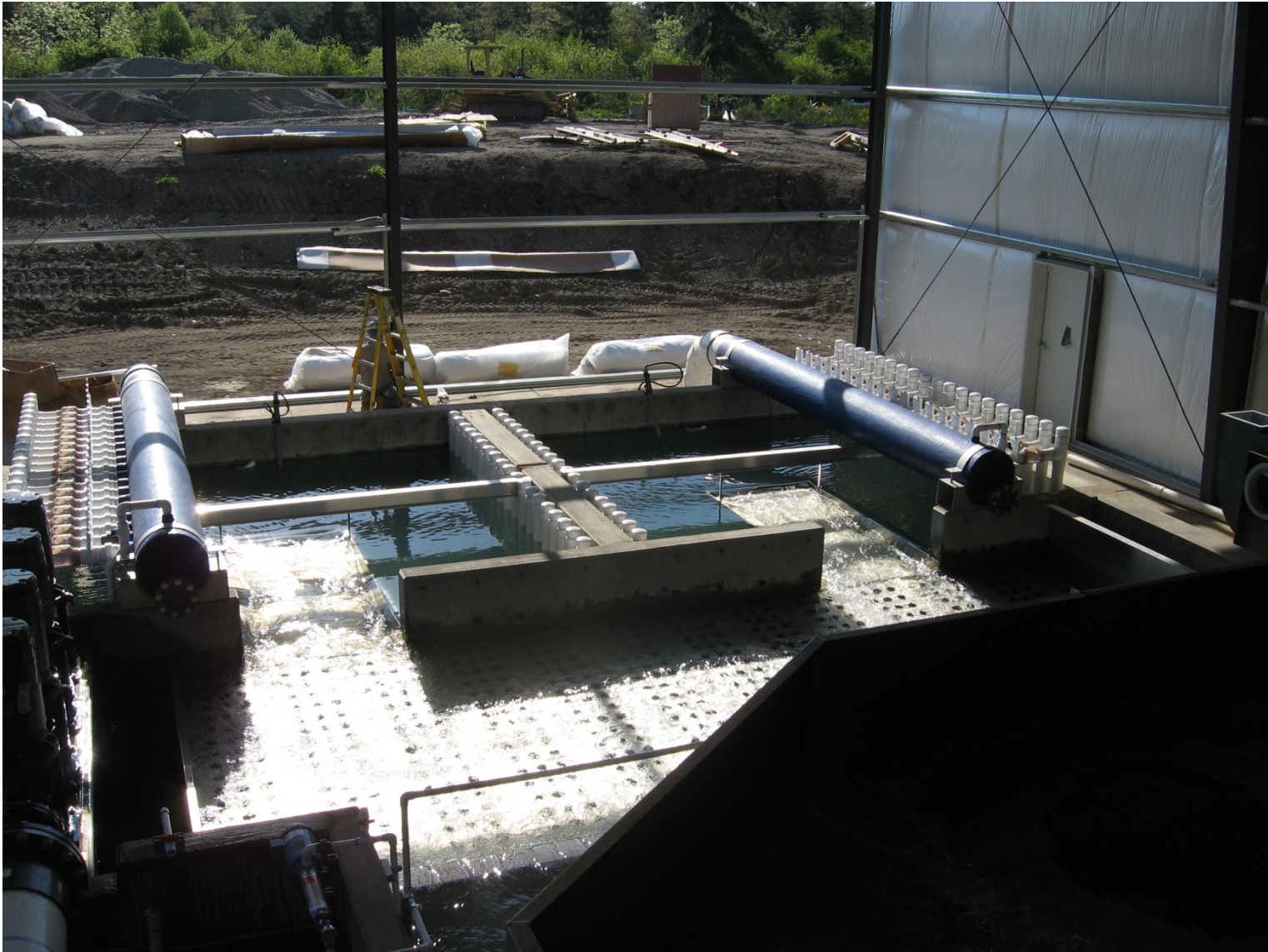


Sweet Spring Grow-out RAS System Filtration, CO2 Stripping, and LHO

- Lower head loss than conventional FSB
- Below grade fluidized sand bed biofilter
- CO2 stripper is combined with the pump sump
- Split system flow
- Two pumps supply the tank system thru the LHO
- Two other pumps supply the biofilter







Sweet Spring Grow-out RAS System Tanks

- Five tanks from 6.1m x 1.5m to 12m x 3m
- Four tanks needed – fifth tank used for special purposes
- Tank number and sizing for 8 month grow-out
- Tanks have built in inflow nozzles
- Two 6.1m x 3m purge tanks
- Purge tanks are sized to hold one crop for up to 15 days purge time





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Sweet Spring Grow-out RAS Feeding System

- Hybrid system consisting of Arvo-tec feeders and Cablevey cable disc refilling system
- Feeder hoppers located in tank center
- 360 degree electric spreaders for optimum feed distribution
- Will be fed by three silos outside building



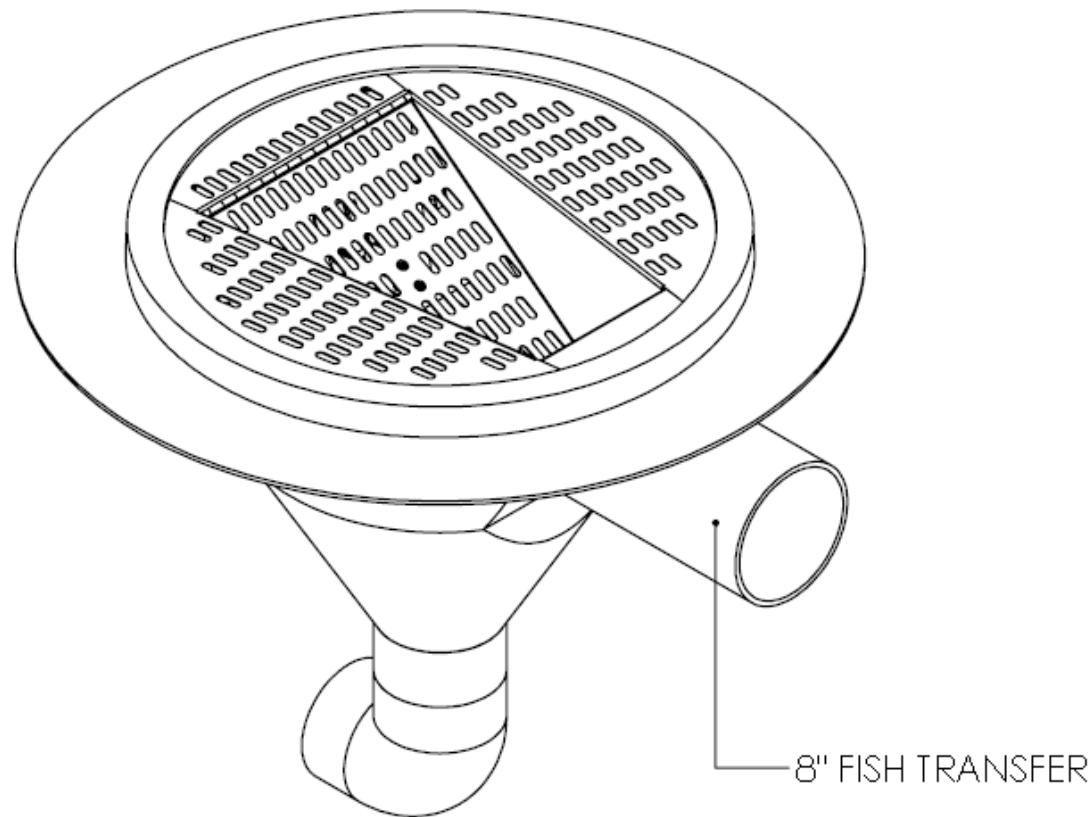
Sweet Spring Grow-out RAS System

Fish transfer

- Pneumatically actuated tank center drain screens
- Central fish handling sump
- Transvac twin canister vacuum pump
- Fish are pumped tank to tank from the central fish handling sump using the tank center screens



SweetSpring Grow-out RAS System Fish Transfer Sump





Sweet Spring Grow-out RAS System

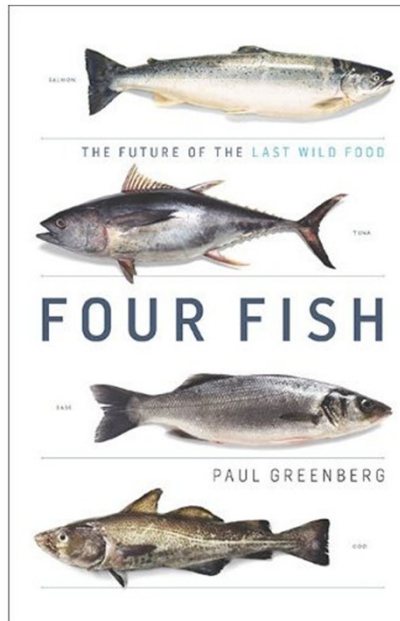
Fish Harvesting

- Fish are pumped with pneumatic fish pump using the transfer sump
- Fish are then dewatered
- Fish are then piped to a counter extended over the purge tank lip
- Fish are held in purge for up to 15 days
- Fish are then pumped to a stunner/bleeder and then to an ice slurry filled tote



Collaborative Innovation





“Let the fittest, most closed system survive and reap the economic benefit inherent within that victory.”

Paul Greenberg, 2010 (pg 74)



Thank You...



www.sweetspringsalmon.com