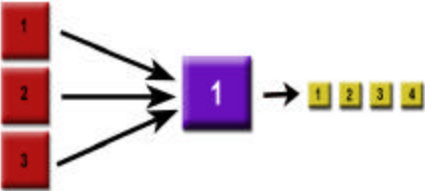


## Traceability Readiness Report Card

<b>Industry:</b> <p style="text-align: center;"><i>Finfish Aquaculture</i></p>	<b>State of Readiness Assessment:</b> <p style="text-align: center;"><b>Total Score =</b> <b>A</b></p>
<b>Industry Overview:</b> <ul style="list-style-type: none"> <li>• Five salmon aquaculture companies comprise over 80% of BC farmed salmon production. One of these companies is Canadian owned, while the others are large European multinationals. All five companies farm salmon in other parts of the world such as Norway, Chile, UK, New Brunswick, and the US (Maine).</li> <li>• Most product is sold on the commodity market. To achieve a competitive advantage, some companies are beginning to focus on product differentiation mechanisms e.g. 3<sup>rd</sup> party audited quality management programs, organic certification, higher value species.</li> <li>• Production is primarily Atlantic salmon. Other species include chinook, coho, steelhead and sturgeon.</li> <li>• Most BC finfish aquaculture businesses exhibit a high level of vertical integration; their involvement in many stages of the aquaculture supply chain allows them to implement effective traceability systems covering the entire upstream chain – from breeder to processor.</li> <li>• Depending upon the specific stage in the supply chain, the identification of products within the finfish aquaculture supply chain is based upon batch numbers, tray numbers, tank numbers, pen numbers and lot numbers. These designations are applied in a manner that is readily equated to the EAN trade unit/logistic unit system.</li> <li>• Pooling of product at both the hatchery and farm is common. The linkages between input units and pooled units is well maintained.</li> <li>• Industry association – BC Salmon Farmers Association (BCSFA) &amp; Canadian Aquaculture Industry Alliance (CAIA)</li> </ul>	
<b>Chain of Custody Pathways</b> <p>Breeder → Truck → Hatchery → Truck → Farm → Boat → Processor</p>	<b>Unit Transformations</b> <p>Units may undergo multiple pooling and subdivisions between breeder and processor</p> 
<b>Market(s):</b> <ul style="list-style-type: none"> <li>• Primary market is US.</li> <li>• The majority of product is sold in fresh whole form - although processing of farmed salmon into fillets and portions is increasing.</li> <li>• COOL and US Bioterrorism Act are the main traceability regulations of concern.</li> </ul>	

<b>Product and Business Data Availability:</b>	<b>Score = 1</b>
<p>The BC finfish aquaculture industry records its traceability data elements in computer-based data recording systems. In some cases, paper-based records are also maintained. Examples of the computer-based traceability systems used in finfish aquaculture include NuTrace, FarmControl (now known as WiseFarming) and Superior Control. The underlying concept for some systems – e.g. NuTrace - is that of a data warehouse: data from each stage of the value chain is submitted on a continuous basis to a central server. The NuTrace software is designed to identify, link and cross link data to create a chain of knowledge from feeding and breeding to delivered product.</p> <p><b>What product or business data is missing?</b> None. Finfish aquaculture companies collect a comprehensive set of product identity, business unit identity, product description, production history and transportation-related information</p> <p><b>Is the data electronically accessible to the supply chain?</b> Yes. Most companies maintain computer information systems which contain traceability information. The implementation of a single traceability system by all units of a vertically integrated business provides managers with easy access to unit-specific information.</p> <p><b>Is the data verifiable?</b> One company is certified by the ISO 9001 Quality Management Program. As part of this program, a third party auditor will verify its traceability system. Due to the competitive nature of the finfish aquaculture industry, it is likely that other BC companies will undertake similar certification in the future.</p>	
<b>Product Identifiers:</b> Unique trade and/or logistic unit identifiers are used.	<b>Score = 1</b>
<b>Data Transfer and Information Mapping:</b> Vertical integration and computer-based traceability systems facilitate the effective transfer of information	<b>Score = 1</b>
<b>Industry Leadership</b> Primarily one umbrella organization represents industry but other aquaculture groups exist	<b>Score = 1.5</b>
<b>Processor Level Constraints</b> Product is occasionally stored at cold storage warehouses with poor inventory management practices	<b>Score = 1</b>

<b>Factors impeding ability to meet traceability:</b>	<b>Factors aiding ability to meet traceability:</b> <ul style="list-style-type: none"><li>• Vertical integration of upstream supply chain</li><li>• Computer based traceability systems</li><li>• Good product unit identification</li><li>• Good linkages between inputs and outputs</li><li>• Comprehensive data collection</li><li>• Good appreciation of benefits of traceability</li></ul>
<b>Opportunities:</b> <ul style="list-style-type: none"><li>• Maintain verifiable traceability information through third party audits.</li><li>• Exchange traceability information with other supply chain partners using a globally recognized standard such as the EAN.UCC system.</li></ul>	