



*Prince Edward Island has a strong history in cultured finfish production. Rainbow trout salmon enhancement efforts were carried out in the 1920's while trials to develop commercial finfish operations began in the 1970's. In 2008 an experimental halibut farm was successfully launched.*

### **Production of PEI Finfish**

While the PEI finfish aquaculture industry is small, it is an important contributor to the local economy and produces disease-free Rainbow Trout and Salmon eggs, fry and smolts for grow-out in other provinces in the region.



**Figure 1: Eggs collected from Salmon broodstock**

### **Spawning**

A finfish farmer's production cycle begins when the eggs are collected in the fall of the year from the females. A gentle pressure on the abdomen of the female fish will cause her to release the eggs, a process called stripping. In some cases, air may be gently injected into the abdomen to help force the eggs out.

### **Egg Fertilization and Rearing**

The eggs are fertilized using the same techniques – gentle pressure on the sides of the abdomen of the males, which expresses the milt. Typically, fertilized eggs are placed into incubation trays with flowing oxygenated water. However, one Alliance facility keeps its salmon eggs in small silos with oxygenated water flowing up from the bottom (upwellers). The amount of incubation time depends on the species of fish and the rearing temperature. A gentle flow of water through the trays maintains the temperature and oxygen conditions at the right level to ensure healthy fry are produced.

Salmon start off as pea-sized orange coloured eggs. Eggs are very delicate until they reach the eyed stage (eyes are visible through the egg). Eggs develop into alevin (2 cm long) or sac fry. During this period the alevins utilize their attached sac for food. Feeding is normally initiated when the sac is almost completely absorbed. Once feeding has begun, they are referred to as fry (5-8 cm long).



**Figure 2: Fertilized salmon eggs stored in upwellers**

### **Growout and market size**

Because the Gulf of St. Lawrence becomes frozen in the winter, PEI salmon aquaculture is limited to land-based operations. As a result, Island salmon aquaculturists specialize in the egg to fry market.

Rainbow Trout are generally grown in pond based cages. Trout fry are typically reared in circular tanks and may double their weight every 28 days. By the time they are four months old they will have grown into 10-gram fingerlings. They are considered market size once they reach  $\frac{1}{2}$  kg (1  $\frac{1}{4}$  pounds). At one Alliance facility trout are also being stocked into ponds for U-fish operations.



**Figure 3: Trout fry in tank**

Generally 18-22 months after they reach first feeding, trout are ready for harvest. The fish are sold in the market place and local restaurants as either a head on gutted product or a fillet.