

## Escapes From Salmon Farms

Any time a farmed salmon escapes its net pen and enters the wild marine environment, it represents an economic loss for the farmer. There is therefore a strong business incentive to prevent this from happening. Although escaped farmed salmon pose a low risk, there is also a strong incentive to minimize losses as a matter of precaution.

### How do farmed salmon escape?

In the early days of BC salmon farming, when farmers were still in a very steep learning curve, significant numbers of salmon escaped. This occurred mostly during storms, when peak winds, wave and tidal currents broke anchor lines and pen structures and allowed the nets to tear. Escapes have also occurred as a result of accidents with boats, tears in the nets from predators, and human error. Today, however, escapes occur far less frequently because farming techniques, equipment and escape prevention guidelines have significantly improved.

### What happens to escaped farmed salmon?

Farmed salmon live a pampered life. All of their needs are met they are protected from predators and are fed as much food as they care to eat every day. A farmed salmon that escapes into the wild is poorly adapted for survival, and only small proportions of escaped salmon ever survive to be caught or found in rivers. Of the escaped Atlantic salmon recovered from BC waters, 94% have nothing in their stomachs (McKinnell, et al., 1997), clearly demonstrating their poor ability to obtain food. With limited skills to find food or avoid predators, it is very likely that most farm escapees will quickly be consumed as part of the marine food chain. The few that do reach a river may attempt to spawn, but research indicates that farmed salmon have significant competitive and reproductive disadvantages to their wild counterparts (Fleming, et al., 1996).

### Are there differences in the risks posed by escaped Atlantic and escaped Pacific salmon?

Escaped Atlantic salmon are at a particular disadvantage because they are not naturally adapted to this ecosystem (see Farming Atlantic Salmon). Pacific salmon, which make up about 20 per cent of farmed fish in B.C., also escape from time-to-time. Pacific species are able to interbreed with their wild cohorts, although studies indicate that the farmed fish will have significantly lower success in breeding than wild fish (Fleming, et al., 1996). A few farmed salmon interbreeding with a wild population have little impact because only small amounts of new genetic material is being added and natural selection is continuing to play a role (Peterson, 1999). Genetic disruption of the wild populations would only be expected to occur if escaped farmed salmon consistently interbred with a significant proportion of the wild population (Alverson & Ruggerone, 1997) – something that has not occurred in British Columbia. Farmers nevertheless approach escape prevention with the same rigour in the case of Pacific stocks as they do in the case of Atlantic stocks..

### What specifically is being done to reduce escapes?

Some specific measures include: improved net management, better farm anchoring, and guidelines for vessel operation near farms. The BC Salmon Farmers Association developed its own Code of Practice with respect to escape

## Escapes From Salmon Farms

prevention, setting out standards for minimum net strength, net testing, and escape-response plans. All BCSFA members adhere to the Code, and several of its sections have now been adopted as a regulatory requirement for all salmon farm operators in BC.

The ultimate goal of BC salmon farmers is to eliminate escapes. Escapes as a percentage of production have been dramatically reduced since the early 1990s, and are estimated at or below one per cent in every year since 1995. Ongoing net upgrades and procedural refinements will help maintain this momentum.

