



trout and char require high-quality stream environments in which to live. Other fish species potentially affected by improper forestry practice include gaspereau, striped bass, smelt, and shad, which also rely on freshwater for completion of their life cycles, and clams, oysters, shrimp, crabs, and fish food organisms which live in estuaries or are found in shallow areas along the coast.

It is essential that we understand the fisheries-forestry relationship if the two are to co-exist. Careful planning of forestry operations, locations and timing can substantially reduce potential hazards to fish.

How Forest Characteristics Influence Fish Habitat

Forests play an important role in regulating fish habitat. Trees intercept rainfall and, by evaporation and transpiration, influence the amount of water that reaches a stream. Trees and ground vegetation also take up large quantities of groundwater; their roots stabilize

and bind the soil, thus reducing erosion on hillsides and along stream banks. Removal of forest cover by harvesting or natural events (e.g. forest fires) can result in more fallen snow and accelerated snow melt. In turn, these effects can advance spring run-off and affect the timing and magnitude of storm-peak stream flows. The tree canopy also limits the sunlight reaching the forest floor, thereby maintaining cool stream temperatures. The trees and branches that fall naturally into a stream help create the diversity of pool and riffle habitats upon which stream productivity depends. Riffles are the principal fish food-producing areas, while pools provide fish with growing space and cover from damaging storm flows and predators. Forest debris naturally anchored in the stream armours the banks and creates steps in the streambed which reduce water velocity and prevent excessive stream scour. This, in turn, lessens the risk of fish eggs being washed away during high water flows. Needle and leaf fall

provide essential energy for the fish food chain. Clearly, the way in which the forest is managed affects the make-up of fish habitat.

Timber Harvesting

Logging involves the development of access routes, the felling of trees and the hauling of cut logs from the woods by cable yarders, tractors or skidders. In addition to affecting stream flow and run-off, these operations can affect fish habitat by accelerating erosion, introducing logging debris or removing large natural debris from streams, and eliminating stream-side vegetation.

Clearing the land of trees when combined with snow-melt may produce stream flow increases which cause major changes in stream channels. Such changes may result in shifting or displacement of gravel used by spawning fish. Bottom-dwelling plants and animals, which are vital elements

