

## **Lack of Coastal Planning Leads to Increased Risk of Flood Damage**

April 16, 2003

In Nova Scotia, the lack of clear municipal or provincial guidelines has led to unregulated residential and commercial development in coastal areas. Building houses and roads on floodplains and across rivers or wetlands leads to the kind of flood damage experienced last week in much of Nova Scotia. Last week's heavy rainfall caused bridges and roads to wash out and caused flooding in many low-lying areas of the province.

Coastal floodplains are low-lying lands such as salt marshes and river valleys that help to buffer and stabilize coastal systems. In natural coastal landscapes, floodplains are sponges that absorb and gradually release excess water back into the system. This protects inland and downstream areas from flooding during heavy rainfall.

In recent years, residential and commercial development along the coasts has increased in scope and intensity. In Nova Scotia, there is no comprehensive provincial legislation suggesting guidelines for coastal development or the protection of natural coastal buffer zones. As a result, natural floodplains are covered with houses and parking lots, and roads and causeways bisect wetlands.

This infrastructure in turn has to be protected by roads, dykes, culverts, and seawalls to prevent the natural entry of the sea into low-lying coastal lands. Ironically, these coastal protection systems compound the problem because they are designed to limit the flow of water. "Watersheds are like bathtubs. If you place something over the drain that blocks the hole partially or completely, then the water can't escape and eventually spills out of the tub." explains Tony Bowron, chair of the Ecology Action Centre's Coastal Issues Committee (CIC). "We build dykes, dams, causeways, and install culverts in an attempt to prevent the natural flow of the daily tide across coastal salt marshes and into natural tidal rivers, but it is freshwater that builds up behind these structures and cause the flooding."

The Ecology Action Centre has conducted tidal audits to assess the status of tidal crossings in Minas Basin. They examined culverts, causeways and bridges to determine how well daily tides could flow into, and freshwater out of, the crossing openings. This research identified that over 50% of the tidal crossings in Hants and Colchester Counties are partially or completely restricted.

Improperly sized culverts increase the likelihood of coastal flooding. When huge volumes of water, such as those experienced last week, reach tidal crossings with small culverts, the culvert openings are too small for the increased water volume. It was the built up force of the backed-up freshwater (called a freshet), which was unable to drain quickly enough, that led to bridges and roads washing away last week. Throughout Nova Scotia, 47 bridges were damaged or washed away after the heavy rains.

We can learn from the destruction. The Ecology Action Centre urges the Department of Transportation and Public Works to view last week's events as an opportunity to

replace restrictive crossings with properly-sized and placed structures that allow for a more natural hydrological regime. Tony Bowron says, "If we built our roadways and constructed our coastal communities in balance with the daily flow of tidal waters up stream, then we would be less likely to suffer the devastating flooding events like we experienced last week. We would be maintaining the buffering capacity of coastal areas."

The Coastal Issues Committee is also promoting the development of a Coastal Areas Protection Policy similar to that adopted in New Brunswick. Under this policy, coastal development activity is governed using established zones in which various kinds of uses are permitted. Municipal governments are required to manage growth on coastal lands and protect coastal features, such as wetlands. This will ensure better planning of development activities as well as greatly improved protection for the future.

For Jennifer Graham, Outreach Coordinator for the Coastal Issues Committee's salt marsh restoration project, "a comprehensive policy would be step in the right direction, but it would still require legislation and enforcement to ensure implementation and accountability".