

# Whither the Wetlands?

**They provide the planet with natural, inexpensive purifiers, but are increasingly destroyed by human habitat. With population and industrialization on the rise, we need wetlands more than ever.**

Curt Kerns and Gary Bauslaugh

A dead orca is found on a Lower Mainland beach. Why should this concern us? Animals die all the time; life means inevitable death. But some deaths have a significance that goes beyond the perishing of an individual creature.

The death of a canary, for example is usually not particularly significant, unless that canary happens to be in a cage in a mine. Then its death is a matter of immediate, urgent concern. Similarly, the demise of a young orca, trapped in our deteriorating coastal waters, is a sign of something we ought to be very worried about.

In fact, family pods of Southern Vancouver Island and Puget Sound orca are some of the most contaminated marine mammals in the world. We will lose them from our waters unless their mortality rate decreases. In the past six years, half of their young have died.

But it is not just the orca that we need to worry about: The health of our waterways and the stability of the world's aquatic ecosystem are being seriously affected by our callous disregard for preserving natural wetlands that filter and purify runoff and waste waters. Like the miner who no longer can hear the canary singing, we need to worry about ourselves.

Wetlands are a natural process of water purification that once existed as swamps, marshes and estuaries at water's edge throughout North America. Unfortunately, however, most of these natural wetlands have been lost through urban growth and through agricultural use. Waterfront property has high commercial value in urban areas, and the fertile soil of wetlands, once drained, is attractive to farmers. Former wetlands have become prime residential land and agricultural land. As wetlands have systematically been removed from our landscape, the natural purification process for runoff waters has been largely destroyed.

At the same time, rapid population growth coupled with modern lifestyles and agricultural practices have led to a vast increase in the level of pollutants flowing into our waterways. We have much less wetland than ever, when we need it much more than ever.

The extent and the seriousness of this problem has not been as widely recognized as some of our other pollution problems. We hear much about air quality, acid rain, pesticides, ozone depletion, the green house effect, and radiation. But the wetlands problem may turn out to be at least as important as any of these.

The lack of public awareness about wetlands is in part because the problem is often described as being about the preservation of waterfowl. That is a worthy cause, to be sure, but insufficient to bring about widespread concern and drastic action. The wetlands problem is about much more than losing ducks and geese and orca.

The problem is the poisoning of our aquatic environment – our rivers, lakes and especially our Coastal waters are ill adapted to deal with substances added from human activity. Harmful algae blooms, once rarely found outside of northern waters, are now routine in the continental North America. In southern British Columbia, 98 per cent of tidal waters are closed to shellfish harvest, due to pollution.

The consequences of continuing pollution of our waterways will go far beyond these initial difficulties. They are only the start of an impending ecological disaster that could permanently degrade our waterways. We have done so much damage already; it is distressing to imagine the impact of another hundred years of such ecological insensitivity.

There have been some well-meaning attempts to deal at least with the urban sewage problem by constructing sewage treatment plants, but these are extraordinarily expensive. And even advanced secondary treatment plants do not remove the nutrients that promote undesirable algae growth. Moreover, they do not deal with all the problems of urban surface runoff, or with runoff through farm and suburban lands.

The solution must lie first in the preservation of our few remaining larger natural wetlands, which are particularly important for protecting species diversity. There are still some of these precious sites around, and we must save them. While many other preservation projects have large costs associated with them, using wetlands for their natural function, purifying water, reduces the need for expensive treatment plants and has, therefore, both economic and ecological benefits.

Burns Bog, for example, is being considered for other purposes. By leaving it as a wetland, and taking advantage of its natural water filtering function, everyone benefits: landowners from the leases paid, taxpayers by saving many millions of dollars that otherwise would be spent on municipal treatment plants and the public by having more parkland. And wildlife will benefit by having their habitat secured.

We must also begin the restoration of our wetlands to our watersheds. This does not mean scrapping the housing developments and reclaiming productive farm land, because that would be prohibitively expensive. It does mean that strategic introduction of constructed wetlands to replace the functioning of those lost.

Constructed wetlands are relatively new to North America, but they represent a cost efficient means of replicating nature's process for wastewater purification. They are rapidly being adopted in communities in many other parts of the world.

Used in conjunction with primary treatment to remove solid wastes from sewage, constructed wetlands are providing effective purification of sewage and runoff, often at a fraction of the cost of advanced secondary and tertiary treatment plants.

In essence, constructed wetlands are a series of shallow pools, filled with aquatic plants, with a means of carefully directing water through them. They require a surprisingly small land area. Wetlands can go into green spaces and provide enhanced wildlife habitat and parkland.

Sometimes they can be incorporated into land that cannot be used for other purposes, such as freeway borders and medians, or power line right-of-ways. They can also be used to extract value from some fallow agricultural lands.

The wetlands problem arose from the insensitive application of modern technologies in supporting urban growth alongside agricultural development. Now, with the sensitive application of newer technologies, and by learning to mimic rather than replace nature's own methods, we can do much to fix the problem. But we had better start doing it.

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