

CHAPTER TWO



PRINCIPLES

Principles

The following principles flow directly from the ecosystem approach to managing the waterfront. They should form the basis of policies and planning for the waterfront by governments at all levels, and should provide a standard against which waterfront development and management, whether public or private, can be evaluated.

In future, policies and proposals along the waterfront should not be judged solely on their economic merits, or their contribution to recreational, housing or other objectives. They must also be judged on whether they contribute to rehabilitating ecological health and public use and enjoyment of the waterfront, or simply continue the pattern of past abuses. Applying these principles forms the foundation for making such a judgement.

Principles for a green waterfront can be expressed simply. It is the view of this Commission that the waterfront should be:

- ~ clean;
- ~ green;
- ~ useable;
- ~ diverse;
- ~ open;
- ~ accessible;
- ~ connected;
- ~ affordable;
- ~ attractive.

The following sections provide a more detailed explanation of the interpretation, origins, and possible applications of these principles.

Clean

- ~ The air, land, sediments, and water should be free of contaminants that impair beneficial uses by people and other living beings.
- ~ Water quality should be such that it allows fish to be eaten without restrictions

caused by the presence of contaminants; that people can swim and engage in water sports without risk of illness; that levels of potentially toxic chemicals in drinking water remain below detectable limits or meet all accepted health standards.

If the waterfront is to achieve its full potential as an attractive, positive element in the Greater Toronto Bioregion, substantial improvements in present levels of water quality are essential. The magnitude and extent of the problems have been defined by a number of studies, and summarized for the Metro Toronto waterfront in the Commission's Publication No. 10, *East Bayfront and Port Industrial Area: Environment in Transition*, which noted that:

Although the severity of problems varies, the same ones occur across the waterfront... Bacterial loading causes beaches to be posted. Eutrophication is a continuing problem due to nutrient loadings. Metals and organic chemicals can be found in the water column. Bottom sediments are contaminated with organic chemicals and metals, especially in slips and embayments where water circulation is poor. Aquatic biota bio-accumulate organic chemicals and metals. Good fish habitat is scarce.

The revised Great Lakes Water Quality Agreement defines a list of undesirable changes under its "impairment of beneficial use(s)" clause. These include:

... changes in the chemical, physical or biological integrity of the Great Lakes System sufficient to cause any of the following:

- i) restrictions on fish and wildlife consumption;
- ii) tainting of fish and wildlife flavour;
- iii) degradation of fish and wildlife populations;

- iv) fish tumours or other deformities;
- v) bird or animal deformities or reproduction problems;
- vi) degradation of benthos;
- vii) restrictions on dredging activities;
- viii) eutrophication or undesirable algae;
- ix) restrictions on drinking water consumption, or taste and odour problems;
- x) beach closings;
- xi) degradation of aesthetics;
- xii) added costs to agriculture or industry;
- xiii) degradation of phytoplankton and zooplankton populations; and
- xiv) loss of fish and wildlife habitat.

It is evident that the Metro Toronto waterfront now suffers many of those impairments, with the rest of the GTA waterfront affected to a lesser extent.

Correcting this situation will require commitment and co-operative action from many agencies, both along the waterfront and throughout the bioregion. The Metro Toronto Remedial Action Plan process is currently working towards a consensus on the actions necessary, and on the role of various agencies. Other studies, and other committees at various levels, are looking at specific components of environmental restoration.

While much of this discussion is commendable and necessary, it must not become an excuse for inaction. During the Royal Commission's hearings on a Green Strategy



Rouge River — polluted storm sewer run-off

for the Greater Toronto Waterfront, Luciano Martin of Etobicoke described his frustration at the slow implementation of the Toronto Area Watershed Management Strategy, which was completed in 1986:

On plans that have been approved, I think they should be implemented, and they should be implemented now rather than wait for further studies to restate basically the same problems and come up with what can only be rather similar cures.

Applying the principle that the waterfront should be clean also means that redevelopment or new developments, whether public or private, should assist in resolving problems created in the past. Because a significant component of waterfront pollution comes through tributary streams, it means that developments anywhere in the watershed can no longer be permitted to exacerbate problems — for example, through inadequate control of stormwater or eroded sediments.

In the course of its hearings, the Commission was given a number of suggestions for making improvements to the cleanliness of the waterfront: one deputant proposed a goal of no net increase in the flow of sanitary sewer water into the lake. To meet this goal developers would have to retrofit existing buildings to achieve substantial reductions in water use before they would be allowed to construct new buildings. The same principle has been suggested for stormwater, using design features to direct run-off back into the ground.

Karey Shinn of the Kew Beach Residents Association reminded the Commission of the facilities, either present or planned, that cause air pollution in the Port Industrial Area, including proposed expansions to sludge burning at the Ashbridge's Bay Sewage Treatment Plant, and restarting of the retrofitted R. L. Hearn electrical generating plant. In Ms Shinn's words, "It is fundamentally wrong to ignore the cumulative effects of these actual projects and future projects on our airshed".

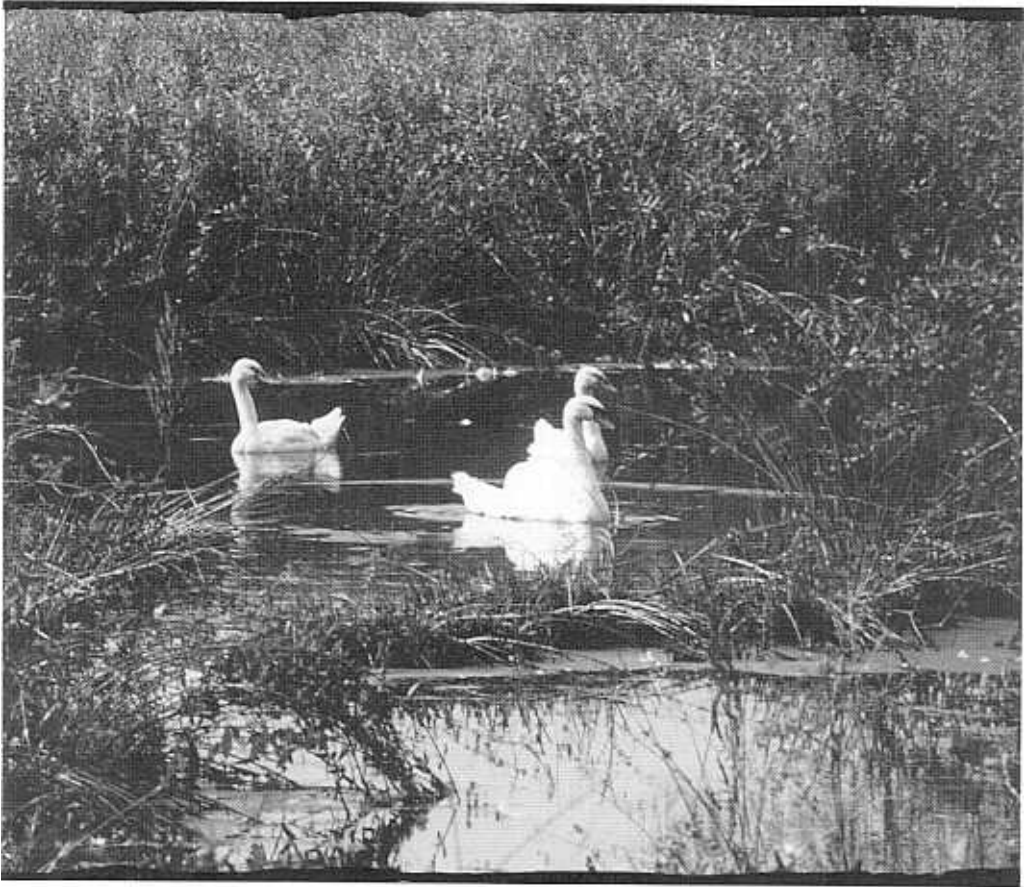
Green

- ~ The diversity and productivity of ecological communities should be protected and restored through measures to:
 - ~ preserve the genetic diversity of indigenous plants and animals;
 - ~ restore healthy natural habitats and communities;
 - ~ maintain natural ecological processes.
- ~ Natural vegetation should be used to restore and enhance the attractiveness, health, and usability of human communities.



Sport fishing in Lake Ontario

A rich variety of species is the cornerstone of a healthy ecosystem, with all species having a role to play. The trend in recent years has been a gradual but inexorable impoverishment of wild species along the waterfront. Today, such wildlife as common and black terns, spiny softshell and wood turtles, and redbelly and milk snakes are threatened. One hundred and forty kinds of



Swans in the Pumphouse Marsh, Oshawa

plants are known to occur at only one site in the GTA, while 109 species of plants and wildlife occurring within the GTA are classed as provincially rare. Given that genetic diversity is a minimum standard for a healthy ecosystem, this alarming decline must be reversed.

In its natural state, the waterfront is one of the most diverse and productive ecosystems in the temperate climatic zone. However, the productivity of the GTA ecosystem has been impaired, primarily by destruction and interference with natural habitats, but also by degraded water quality, and noise. Natural communities are resilient and many species of fish, wildlife, and plants will return if appropriate habitats are provided. The “miracle” of the spectacular wildlife populations now found on the Leslie Street Spit demonstrates how quickly natural communities

respond when favourable conditions are restored.

In part, the principle of a green waterfront reinforces the need to preserve those areas of natural habitat remaining along the shore. However, it also requires an unprecedented effort to recreate habitats destroyed by past abuses. Habitat creation measures should include:

- ~ making naturalization an essential element in park planning;
- ~ creating wetlands and offshore islands for wildlife use;
- ~ replacing rocky shoals and other fish habitats;
- ~ restoring vegetation along rivers and streams.

Management of natural areas along the waterfront should not employ the single-species approach that now characterizes

most wildlife planning, but should, instead, emphasize the need to protect rare species, restore wildlife communities, and enhance species diversity.

This change in emphasis has already taken place in fisheries management. The Ministry of Natural Resources, through its Strategic Plan for Ontario Fisheries II, has adopted a goal of creating healthy, sustainable aquatic ecosystems that are based on maintaining and restoring naturally reproducing populations of native species.

Naturalists' and sportspersons' associations, as well as members of the public, can be involved in restoring the health of ecological systems. Projects such as the tree-planting days sponsored by the Lower Don Task Force or the stream rehabilitation projects of the Black Creek group (a citizen's group active on this branch of the Humber River system) are among current examples of useful public involvement.


Wildlife agencies, school boards, businesses or municipalities could sponsor contests on ways to create habitat, and then provide financial and technical support for the best suggestions. Developers could be encouraged to make habitat enhancement a part of their plans.

To measure the effectiveness of greening the waterfront, key species should be identified as indicators of the state of our ecosystem and should be monitored periodically to evaluate changes in diversity and population levels.

As Marion Strebig of the Federation of Ontario Naturalists pointed out at a Commission hearing, indicator species should be chosen for the role they play in the ecosystem, rather than for their attractiveness to human beings:

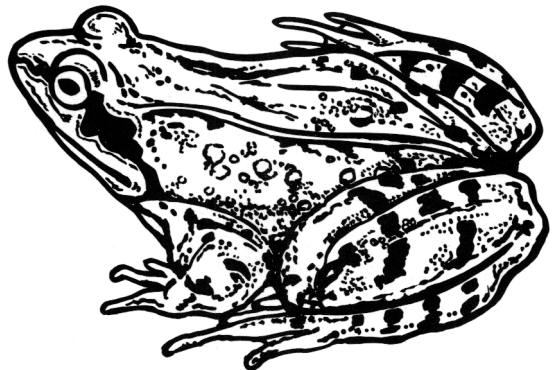
Why not take as an indicator species a humble thing like the Caddisfly, which acts as a basic food source for many species in the aquatic system? [Its] disappearance is a sure indication of trouble.

Over the past decade, volunteer atlas projects have added greatly to our knowledge of the numbers and distribution of birds and herptiles (reptiles and amphibians) in the ecosystem, and discussions are under way on a provincial mammal atlas. The data for this atlas could form the basis of more detailed



For many residents in the Basin, Areas of Concern are remembered as pristine natural areas that once harboured secret swimming holes, spawning grounds for fish and sanctuary for birds and other wildlife. Urban, agricultural and industrial development destroyed wetlands and other vital habitat. It is estimated that two thirds of the wetlands in the Great Lakes Basin have been destroyed.

1990. "Habitat restoration." In *RAP revival: a citizens' agenda for RAPS: report from A Remedial Action Plan Workshop for Citizen Leaders*, February 9-11, 1990, Stella Niagara, New York, 14. Buffalo: Great Lakes United.



information collection and monitoring along the waterfront, using the abilities and enthusiasm of local naturalists.

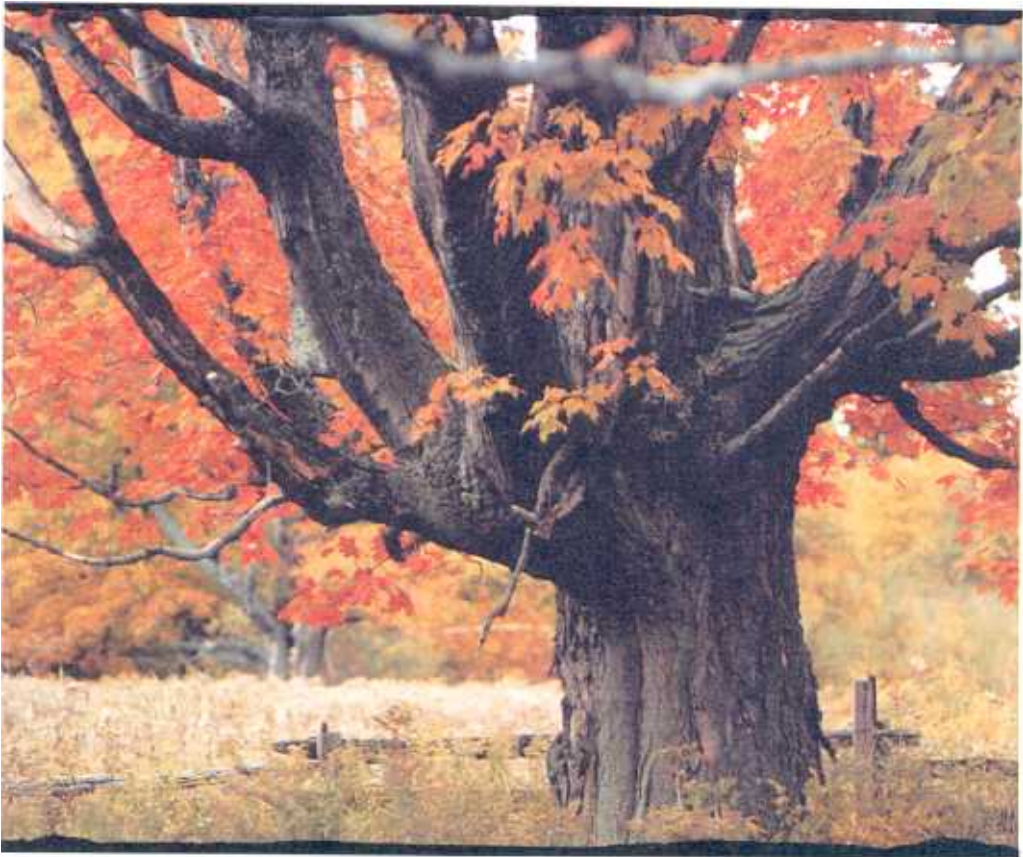
The control of populations of such species as giant Canada geese is also related to promoting ecological diversity. When they reach nuisance levels, wild species are themselves a symptom of an ecosystem under stress, in which normal checks and balances have failed. In addition to the very real conflict between geese and recreational users of the waterfront, their abundance interferes with the potential for other species. A control strategy that combines habitat modification and population control by federal and provincial wildlife agencies would be appropriate.

The locations of most significant habitats and natural areas along the GTA waterfront are known; a good many are already in public ownership. However, a substantial number of critical habitats remain unprotected,

and it is vital that their future be secured. Among the most important sites in need of additional protection, through either public ownership or other means, are:

- ~ Joshua Creek mouth (Mississauga);
- ~ Frenchman's Bay marshes (Pickering);
- ~ Carruther's Creek mouth (Ajax);
- ~ Lynde Creek mouth (Whitby);
- ~ Pumphouse Marsh (Oshawa);
- ~ Second Marsh (Oshawa);
- ~ McLaughlin Bay (Newcastle);
- ~ West Side Beach Marsh (Newcastle);
- ~ Wilmot Creek (Newcastle);
- ~ Bond Head Bluffs (Newcastle).

As well, as noted in the Commission's Publication No. 8, *A Green Strategy for the Greater Toronto Waterfront*, natural creek mouths and other areas of local significance should be protected wherever possible. These



The G' mas Maple



Port of Toronto eastern end of Ship Channel

Ontario is still undergoing rapid development. Constant land use pressure on an area whose size remains constant assures the continual loss of field, forest and marsh which make up the rich tapestry of the landscape. We cannot turn back the clock, but we can rescue some pieces of green from the diminishing legacy.

Hilts, S. G. 1986. "Why protect natural heritage?" In *Islands of green: natural heritage protection in Ontario*, 24. Toronto: Ontario Heritage Foundation.

include the mouth of Fourteen Mile and Shoreacres creeks in Halton, and Graham and Port Granby creeks in Durham.

The Commission is aware that plans to secure some of these priority sites are under way, and encourages all such efforts. For

example, we hope that the present unsatisfactory state of Pumphouse Marsh can be corrected, in response to pressure from the South Oshawa Residents Association, combined with the stated willingness of the City of Oshawa to assume management of the marsh.

Evidence from deputants at the Commission's hearings cited praiseworthy examples of co-operation to protect natural habitats: Hugh Peacock of the Durham Region Field Naturalists noted General Motors' exemplary treatment of stormwater and other environmental concerns during design and construction of its headquarters, adjacent to Oshawa's Second Marsh. This contrasts greatly, he pointed out, to environmentally destructive practices carried out behind the Atlantic Packaging plant on Corbett Creek, as well as along many other areas of the waterfront.

As the experience at Rattray Marsh in Mississauga has shown, development that does not provide sufficient buffer for wetland