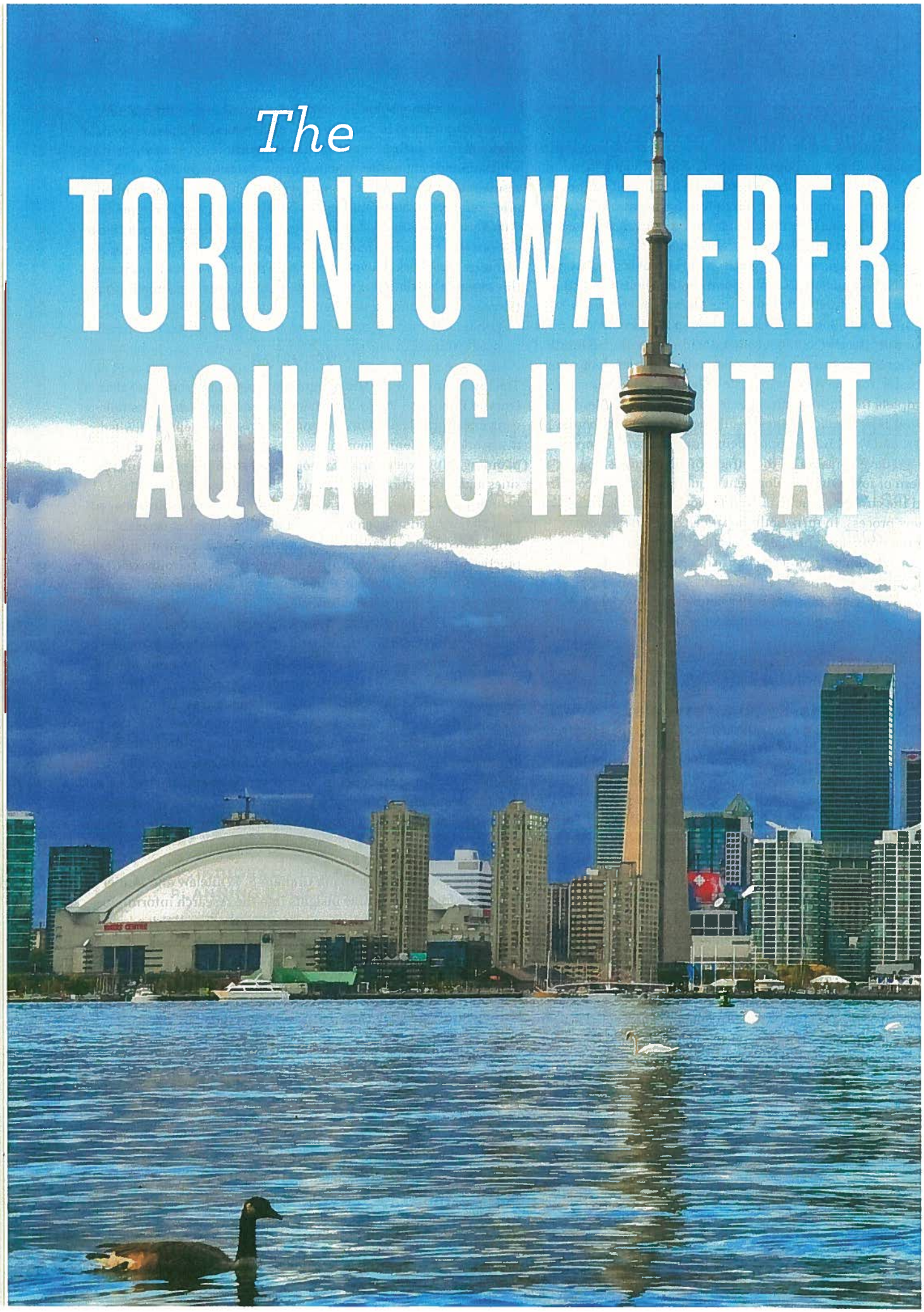
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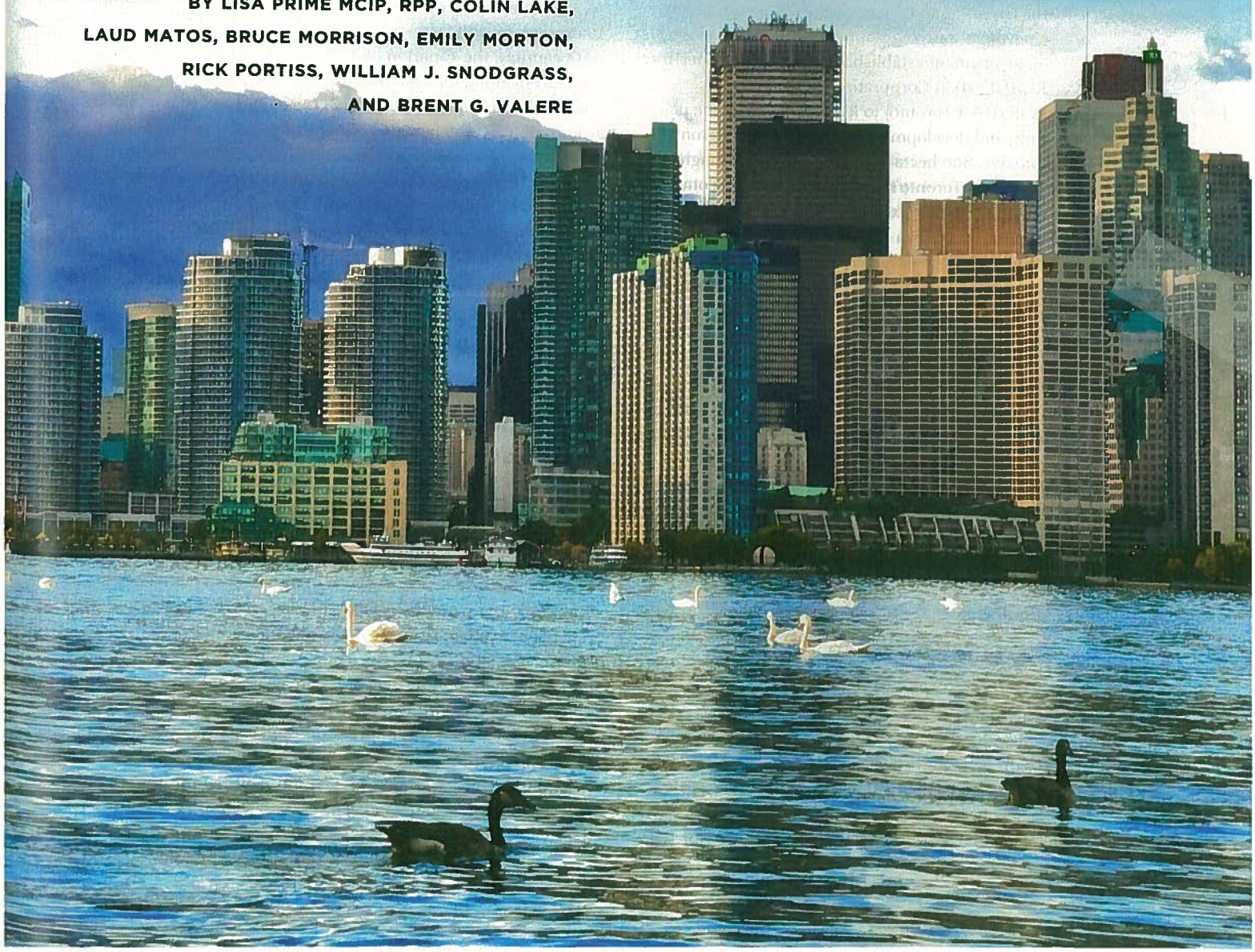
TORONTO WATERFR
AQUATIC HABITAT

T STORATION STRATEGY

A Unique, Collaborative Approach to Streamlining Approvals and Restoring Aquatic Habitat

BY LISA PRIME MCIP, RPP, COLIN LAKE, LAUD MATOS, BRUCE MORRISON, EMILY MORTON, RICK PORTISS, WILLIAM J. SNODGRASS, AND BRENT G. VALERE



SUMMARY *This article examines how the Toronto Waterfront Aquatic Habitat Restoration Strategy (TWAHRS) evolved to become a highly effective planning tool that ensures all projects along Toronto's redeveloped waterfront incorporate opportunities to improve aquatic habitat. TWAHRS inspired the formation of Aquatic Habitat Toronto: a unique, collaborative organization committed to seeing the strategy's full implementation and streamlining the regulatory approvals process to the benefit of proponents, regulators and the environment.*

RÉSUMÉ *Cet article étudie la façon dont la stratégie de restauration de l'habitat aquatique du secteur riverain de Toronto (SRHASRT) a évolué de façon à devenir un instrument de planification hautement efficace qui veille à ce que tous les projets le long du secteur riverain réaménagé de la métropole offrent la possibilité d'améliorer l'habitat aquatique. La SRHASRT a inspiré la création de Aquatic Habitat Toronto : un organisme de collaboration unique, engagé à superviser l'application complète de la stratégie et simplifier les processus d'approbation réglementaire au profit des promoteurs de projet, des organismes de réglementation et de l'environnement.*

Although the degraded condition of their city's waterfront had long been a sore spot for Torontonians, it took Toronto's bid to host the 2008 Summer Olympics to bring the issue to a new level of public prominence. The task force charged with developing a business plan for the Olympic bid in 1999 deemed that waterfront revitalization was an absolute necessity. While in the end, Toronto lost the Olympics to Beijing, the waterfront had proven a powerful rallying point. In 2001, the three levels of government established the Toronto Waterfront Revitalization Corporation (now known as Waterfront Toronto) to lead and oversee the planning and development of Toronto's waterfront—a massive, 800 hectare piece of land that roughly translates into the size of Toronto's downtown core. Concomitant with Waterfront Toronto's early exercises in master planning, the Toronto and Region Conservation Authority (TRCA) led an initiative to develop an aquatic habitat restoration strategy. As part of this process, Waterfront Toronto was consulted as a prime stakeholder, along with multiple other agencies vested in the future of the waterfront.

This article examines how the Toronto Waterfront Aquatic Habitat Restoration Strategy (TWAHRS) evolved as a highly effective, consensus-based tool aimed at ensuring that the implementation of *all* waterfront projects incorporates opportunities to improve aquatic habitat and support sustainable aquatic ecosystems. TWAHRS lay the foundation for the formation of Aquatic Habitat Toronto—a unique, collaborative organization that became responsible for not only implementing the strategy, but also streamlining the regulatory approvals process. This yields multiple benefits for both regulators and proponents and ultimately, the environment.

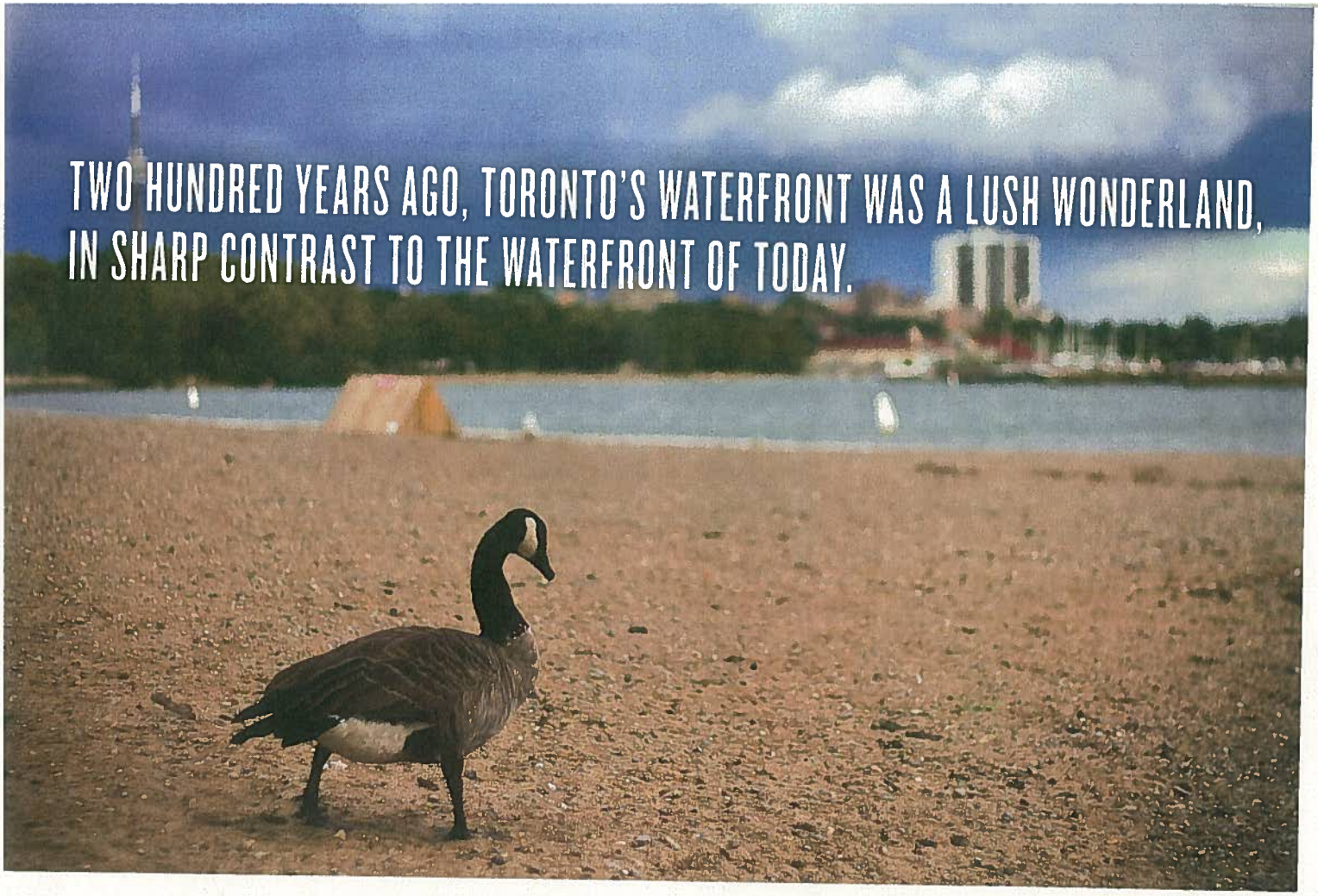
BACKGROUND

Two hundred years ago, Toronto's waterfront was a lush wonderland, in sharp contrast to the waterfront of today. Diverse aquatic wildlife such as salmon, sturgeon, suckers, herring, whitefish, trout and pike flourished in the clear, cool waters, while birds such as the peregrine falcon, Caspian tern and least bittern soared over the region. Thanks to nature's architecture—including bluffs and beaches, cobble reefs, estuaries and bays with fruitful marshes, meadows and wooded shorelines—a variety of aquatic and terrestrial life found a welcoming habitat.[1] Since then, this environment has been progressively degraded. At the turn of the 19th century, aggressive clearing of the forest that once covered the uplands meant that land contours were altered by grading, while run-off to creeks and rivers led to flooding and bank erosion with estuaries choked off by too much sediment. Untreated sewage discharge led to widespread water pollution as the water became inhospitable to many aquatic and terrestrial species. By the late 19th and early 20th century, the situation had worsened: the removal of natural stone from along the lake bottom provided a cheap and abundant source of building material to fuel the city's construction boom.[2] Approximately 428 hectares of Ashbridge's Bay wetlands were filled in order to create port facilities and industrial lands—a fate shared by many wetlands along the waterfront.[3] As a result of these and other influences connected to urbanization, the shoreline was altered almost beyond recognition.

Based on this history, it is no surprise that in 1987, the Government of Canada designated Toronto and region an "Area of Concern", recognizing that a Remedial Action Plan needed to be developed to improve environmental conditions.[4]

A MORE HOLISTIC APPROACH

Developed through an extensive consultation process involving multiple stakeholders and the general public, TWAHRS was adopted in 2003 by agencies with responsibilities for overseeing the waterfront, including TRCA, Fisheries and Oceans Canada, Environment Canada, Toronto Port Authority, the Ontario Ministry of Natural Resources, the City of Toronto and Waterfront Toronto. The strategy provides crucial information to help decision makers, designers, and regulatory authorities ensure that waterfront projects incorporate improvements to aquatic habitats and fisheries resources as an integral part of creating a more liveable and sustainable waterfront. Its objectives are geared at identifying potential self-sustaining aquatic communities in open coast, sheltered embayments, coastal wetlands and estuaries, evaluating these opportunities and proposing action plans to bring these communities to fruition. Developing sustainability indices to monitor implementation also forms an important part of TWAHRS' mandate. On the one hand, TWAHRS recognizes the numerous social



and economic benefits of a clean, healthy waterfront that makes for a much more desirable location in which to live, work and play. At the same time, TWAHRS envisions a more efficient, streamlined approvals process whereby different regulatory agencies work together and reach consensus about what proponents need to do in order to move forward with their developments on the waterfront in a timely manner.

The strategy takes an integrated, holistic approach to managing ecological damage and restoration, recognizing that "whenever centres of organization are degraded or obliterated, more ecological damage occurs than just the loss of function at a specific site."[2] (p 42) Whereas in the past, aquatic habitat restoration had been handled in a piecemeal manner—looking only at the project site in question—TWAHRS calls attention to how the loss of reproduction habitats and feeding sites can cause whole species and aquatic communities to suffer beyond the ecological integrity of the specific site undermined. Thus, the concept designs, restoration techniques and opportunities proposed and established in TWAHRS are premised on a true ecosystem approach, where the relationships between air, land, water and living organisms including humans must be seen as part of a single, interdependent system.

AQUATIC HABITAT TORONTO

While many strategy documents are eagerly prepared and endorsed at the outset, they often get lost at the implementation stage and simply gather dust on a shelf. TWAHRS sought to rectify this through a working group, Aquatic Habitat Toronto (AHT), devoted to its implementation. Senior leaders and staff from the partner agencies that had participated in TWAHRS' development found its core message and opportunities so compelling that they came together to form AHT.

AHT's unique multi-agency governance structure needs to satisfy several key functions. From the outset, partner organizations had to be engaged at the senior management level in order to maintain their informed support and decision-making capacity. An implementation team comprised of individuals or teams from the partner organizations coordinates the day-to-day operations and management, while working groups focus on specific key areas such as regulatory activity and science and monitoring to deal with implementation issues as they arise (see Figure 1 for key elements of AHT's structure). Since each partner organization contributes a portion of its time and staff resources, this governance model provides a highly effective way to leverage expertise. It enables organizations with a vested interest in improving the waterfront to realize their collective goals in a remarkably cost-effective and efficient manner, while building upon and contributing to a rich body of scientific research that extends to national and international knowledge communities seeking new ways to develop and restore waterfronts.

Thanks to its multi-agency composition, AHT is in an excellent position to provide support to proponents working on the Toronto waterfront by simplifying and easing the approval process. In order to carry out development on the waterfront, proponents may be required to attain several approvals from different agencies (e.g., federal and/or provincial and related agencies). Moreover,

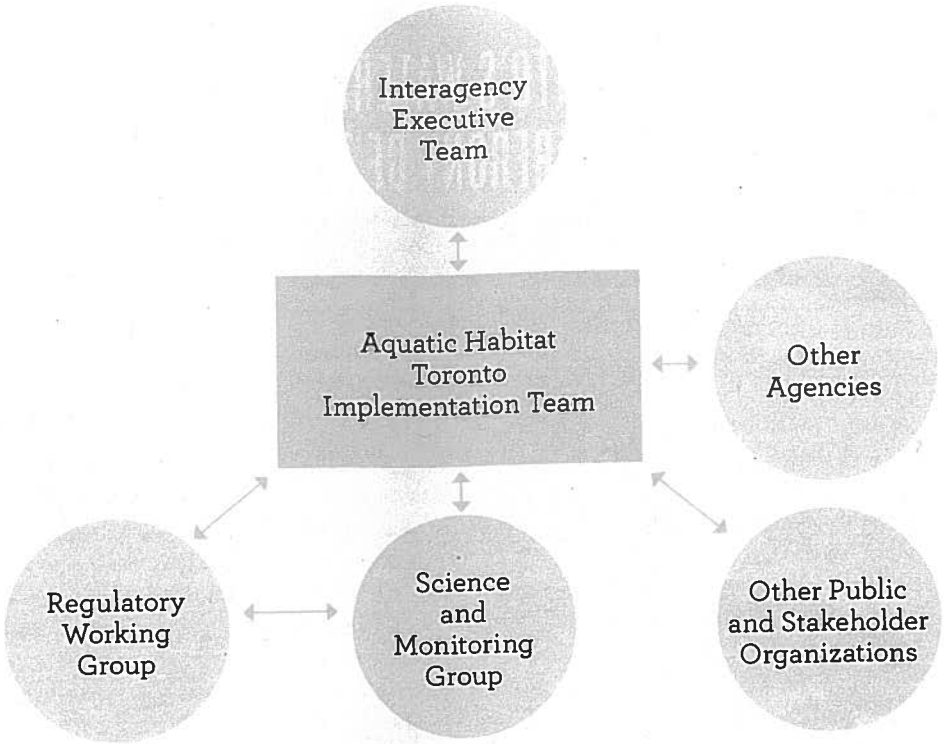


FIGURE 1 : KEY ELEMENTS OF AHT'S STRUCTURE

whenever a proponent's work negatively impacts fish habitat, a regulatory review must be completed; if the impact cannot be avoided or mitigated, the proponent may be required to counterbalance the potential loss through an offsetting strategy. In the past, the proponent would have to approach each agency separately in order to enquire about the necessary approvals and aquatic habitat offsetting plans, which often proved a lengthy and contradictory process. Now, however, the proponent has the option of coming to AHT for a one-stop shopping experience. AHT staff can quickly convene a roundtable that represents all agencies vested in the approvals process and agree upon the appropriate measures. In addition, AHT offers services directing and designing aquatic habitat offsetting plans that are based on a true understanding of the needs and sensitivities of the shoreline and habitat priorities grounded in science. To date, AHT has provided its services to an array of clients, primarily drawn from the public sector (e.g., Toronto Water and Parks, Forestry and Recreation Division of the City of Toronto, Waterfront Toronto, Toronto Port Authority, yacht clubs, Enbridge Gas Distribution). Often, clients want to meet with AHT staff at the initial, conceptual stage of a project in order to discuss the approvals process; AHT staff is pleased to accompany clients on site visits to discuss the various design possibilities from a regulatory perspective, with an eye to making Toronto a more liveable city where ecologically sound decisions are the norm.

Take, for example, Waterfront Toronto's activities in building a series of bridges and signature, custom designed boardwalks—known as "wavedecks"—along a three kilometre stretch of the central waterfront. Since the footprint of the new bridges and wavedecks would negatively affect aquatic habitat, new habitat in the harbour had to be created or restored. Lisa Prime, Director of Environment and Innovation at Waterfront Toronto, asked AHT to devise an offsetting strategy. Working collaboratively, the team tailored a plan based on TWAHRS to meet the specific needs of each bridge and wavedeck. In the case of Spadina WaveDeck, its proximity to the Spadina Wetland guided the habitat restoration of this slip improving its overall connection to the harbour. The steep dock walls of the slip provided little in terms of aquatic habitat, so the lake bed was recontoured along the dock walls to the wetland and beneath the wavedeck to create structure and habitat diversity using boulders, smaller aggregate, root balls and larger logs. The result is an abundance of places where fish can hide and aquatic plants can take root providing both food and shelter. This provides just one example of AHT's groundbreaking work along the waterfront. As AHT has been tasked with facilitating approvals and directing aquatic habitat offsetting plans throughout the waterfront, it is working closely with Waterfront Toronto's team of designers to create the best habitats possible, taking an integrated, holistic approach. John Campbell, President and CEO of Waterfront Toronto, has praised AHT's work, recognizing that "a revitalized waterfront, replete with healthy aquatic life, is a key ingredient in making the waterfront a place where we all want to live, work and play."

Equally innovative is AHT's work in creating a habitat bank comprised of approximately one hectare of coastal wetlands on the Toronto Islands. The concept behind an aquatic habitat bank is that prime habitat can be created in advance—in other words, "banked"—in anticipation of future development needs that will undermine existent habitat and therefore require offsetting measures. The habitat bank area is subdivided into a series of

ecosystem or habitat classes with different values that are standardized to a "common currency" for trading purposes (see Acknowledgements). When aquatic habitat is created or restored, this process is assigned a value or "priced" and deposited in the habitat bank. Conversely, when a development project is going to have a negative impact on fish habitat (and it has been determined that this impact cannot be avoided or mitigated), the proponent has the option of purchasing credits from the habitat bank for an agreed upon amount, based on scientific calculations. The beauty of this approach is that it takes the burden away from the proponent to come up with an offsetting strategy and enables the experts at AHT to plan for prime aquatic habitat in the most integrated way possible. Moreover, fish habitat usage is being tracked for monitoring and research purposes through means of telemetry—acoustic tagging devices attached to a sample of the fish population—to ensure that the potential of the habitat bank is being maximized. In the next phase of its work, AHT plans to create or restore an additional 20 hectares of coastal wetlands including the renaturalized mouth of the Don River, which may in turn become part of the habitat bank. "The creation of wetlands in Toronto goes a long way toward our goal of delisting Toronto as an Area of Concern in the Remedial Action Plan," according to Laud Matos, a Program Specialist on the Great Lakes Area of Concern, Environment Canada, and one of the driving forces behind AHT.

AHT plans to branch into other areas, such as the creation of strategic aquatic habitat demonstration projects. Such projects provide important opportunities for education, research and expanded access to recreational fishing, as well as raising public awareness through signage and exhibitions about the benefits to our health and well-being from living in an urban environment that maintains a more harmonious, sustainable relationship with nature. The benefits flow both ways. As the waterfront becomes a more beautiful, inviting and active space, the opportunities for economic development and tourism grow accordingly.

CONCLUDING REMARKS

AHT's pioneering work in implementing and building upon TWAHRS is only just beginning. Its unique, multi-agency model has proven remarkably well equipped to handle the regulatory needs of complex projects and resulted in invaluable cost-savings, while enabling its clients to meet their aggressive development schedules and ultimately creating an abundance of high priority habitats and coastal wetlands that benefit the environment and society at once. Its one-stop shopping approach to the approvals process provides a model that other cities looking to develop their waterfronts should consider emulating. The result may be, as in the case of Toronto, a more liveable, vibrant waterfront where healthy aquatic wildlife can thrive in concert with urban development.

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1. See: Whillans T. Waterfront Ecosystems: Restoring is Remembering. In: Roots BI, Chant DA, Heidenreich CE, editors. Special Places: The Changing Ecosystems of the Toronto Region. Vancouver: UBC Press; 1999.
2. See the "Cultural Influences" section of the Toronto Waterfront Aquatic Habitat Restoration Strategy, pages 22-24 in particular. The Strategy is available online at: http://www.aquatichabitat.ca/pdf/TWAHRS_STRATEGY.pdf
3. See page 20 of "History of the Shoreline" in Shoreline Regeneration for the Greater Toronto Bioregion, volume 13. Toronto: Royal Commission on the Future of the Toronto Waterfront; 1991.
4. The Remedial Action Plan is available at: http://www.torontorap.ca/resources/reports-and-documents.dot. Other early initiatives that supported bringing people and programs together for the restoration of the waterfront include the Royal Commission on the Future of the Toronto Waterfront, established in 1988, and the Waterfront Regeneration Trust, founded by the Ontario Minister of the Environment in 1992.