

<u>Summary of Part I</u>: In the lead-up to the 15th meeting of the UN Convention on Biological Diversity (COP 15) originally scheduled for October 2020 in Kunming, China, it was realized that few, if any, of the lofty core protections for nature set at COP 10 in 2010 in Japan (the so-called Aichi Targets) had come close to being achieved. The pandemic then brought those failures into sharp focus. The precipitous global and national losses of biodiversity over that decade are summarized. It's noted that although money is a demonstrable key factor in enacting and enforcing protections globally, the system itself—especially in Canada—needs changing.

The not-unexpected findings of a 2017 Canadian study assessing public commitment to endangered species protection in this country was telling of the national—if not global—zeitgeist on the subject. To begin, 89 per cent of us were, in principle, strongly in favour of such protections. After adding the caveat of limiting industrial development to the question, 80 per cent still remained supportive. But only 63 per cent stayed onboard if those efforts were to limit private property rights, and the number fell further for scenarios involving outright loss of rights or reductions in industry-based jobs. This lower tolerance for personal impacts in preventing species extinctions explains both the difficulty of prioritizing conservation over socioeconomic forces, and the range of programs existing in Canada to encourage public-private partnerships, a reflection of the "stewardship-first" ethos baked

into the federal Species at Risk Act—strong regulations to protect species are imposed solely on federal lands, with voluntary stewardship relied on for private lands.

In response to the 2010 Aichi targets, federal, provincial and territorial governments collaborated on "2020 Biodiversity Goals and Targets for Canada." The document (which didn't appear until 2015—an issue unto itself) reflects both Canadian priorities and ways to aid the global effort (Canada, for example, contains a quarter of the world's wetlands, the majority in boreal forest; these are important not just for their inhabitants, but also to species that migrate through them). Canada's 19 targets support four goals: A) better land-use planning and management; B) more environmentally sustainable management across the economy; C) improvements to available information concerning "people benefits" of nature; and, D) increased general awareness of biodiversity and participation in conservation.

Progress on these goals was then reviewed in Canada's sixth National Report to the Convention on Biological Diversity (CBD). The news was typically Canadian: not great, but not horrible, with a dose of over-optimism.

Working backward, Goal D's two awareness targets are on track, which should help drive future targets faster. Surprisingly, three of four targets under Goal C's low-hanging fruit of public outreach are flagging. The only winner? Integrating the capital value of natural systems into Canada's statistical tracking system. Better, of eight targets under Goal B, we fall short on only two: the sustainable and legal harvesting of fish and aquatic invertebrates, and reducing water pollution. Finally, of the five targets under Goal A, three look good, but we lag in whole or in part on the two most important: Target 1, that we conserve 17 per cent of Canada's terrestrial (land and freshwater) area and 10 per cent of coastal and marine areas; and, Target 2, that species whose status is secure remain so, while species at risk trend toward recovery. As of 2020, 12 per cent of land and 13.1 per cent of marine areas are protected—the latter a positive overshoot on the strength of new Indigenous conservation areas. "Canada shares the priorities and challenges in having vast regions with Russia, Brazil and Australia," says Niall O'Dea, Associate Deputy Minister, Canadian Wildlife Service. "It's an integrative, planning-intensive exercise that interfaces with climate challenges and Indigenous reconciliation, but we've developed momentum to achieve the 17 per cent land protection target, move to 25 per cent by 2025, then 30 per cent beyond that."

With respect to Target 2, though a large proportion of secure wildlife are indeed holding steady, as previously noted many at-risk species are more at risk than ever, publicized in desperate gambits such as shooting wolves from helicopters to save caribou in Alberta and B.C., boating and fishing restrictions to stabilize southern resident killer whales and their salmon prey on the Pacific coast, and court-involved enforcements of the federal Species at Risk Act for greater sage grouse in Alberta and Western chorus frog in Quebec. When the Nature Conservancy of Canada released a first compilation of Canada's endemic species in June 2020, of the 308 animals, plants and fungi found in this country and nowhere else, almost 40 per cent were imperilled—eight already extinct.

## Missing the target

Arne Mooers, a professor of biodiversity at B.C.'s Simon Fraser University, has published widely on global biodiversity issues and participates as a non-governmental scientist on the Committee on the Status of Endangered Wildlife in Canada. Widely known as COSEWIC, it's the front end of species-at-risk conservation in this country. "We've realized for a while we're not close to achieving Target 2," says Mooers, "though you might think Canada was well-placed to get there because COSEWIC has been around so long."

Since 1977, in fact, an outcome of the 40th Federal-Provincial Wildlife Conference in Fredericton, New Brunswick. As a conservation tool, COSEWIC's rigorous process—in which at-risk species are independently assessed and recommended for listing under the Species at Risk Act—is highly regarded internationally, and much lauded by participants such as Mooers.

"It's the best, most-satisfying scientific advisory position I've ever had," says John Reynolds, professor of aquatic ecology and conservation at Simon Fraser and current COSEWIC chair. "The government gets a lot of value for very little money—the devoted expertise of 155 volunteer scientists from across the country who are experts on species, either scientifically or in the context of Indigenous knowledge. The vibe at assessment meetings is very positive."

Rigid adherence to procedural standards makes COSEWIC effective but cumbersome, a proverbial large ship in a tight waterway steered both carefully, to the benefit of species at risk, but slowly, with the opposite effect. Nevertheless, assessments move at lightning speed compared to the subsequent formal listing process, where the entire vessel can run aground—as Laurentian's Jacqueline Litzgus, whose turtle subjects are among the world's most at-risk group, knows all too well after a 12-year stint on the committee. "COSEWIC is doing all the things it needs to," she says. "All these busy scientists gather at an amazing consensus-based roundtable, and reports are written by the most knowledgeable experts to get the best results. But then... sometimes nothing."

As of April 2019, COSEWIC had assessed 799 species, finding 356 endangered, 189 threatened, 232 of special concern and 22 extirpated. Only 580 of these, however, are actually listed, the seven-step process from COSEWIC designation to a ministerial order a bottleneck of capacity issues, socioeconomic pressure and political interference (some pending listing decisions date back 15 years). "The challenge is to get everyone else in the chain of protection to keep up with COSEWIC," notes Reynolds, "because it's ultimately cheaper and faster to assess the status of a species than to bring it back from the brink of extinction."

The bureaucratic snaggle, in part, lies in the incrementalism of one-species-at-a-time recovery strategies and action plans. To cut the Gordian knot, a new kid appeared on the block in 2018—the "Pan-Canadian Approach to Transforming Species at Risk Conservation in Canada." According to its main architect Kaaren Lewis, executive lead, Species at Risk

Program and Species Transformation for Environment and Climate Change Canada's Nature Conservation Agenda, the framework will "help shift conservation implementation from the current species-by-species approach to more multi-species and ecosystem-based initiatives. Working with provinces, territories, Indigenous groups and other partners on shared priority species, priority places and priority threats, we're hoping to see better conservation outcomes for species at risk, increased co-benefits for biodiversity and ecosystems, and improved return on investment."

To help that along, the Pan-Canadian plan comes with \$155 million through the species-atrisk stream of the Canada Nature Fund to encourage more collaboration and partnerships. "Federal funding helps bring others to the table," notes Lewis.

"It's an almost revolutionary departure from business as usual, which makes it both interesting and worth supporting," says Mooers. "Done right, it could really help with situations where you need buy-in from everyone to prioritize certain species, while recognizing that you can't do everything equally well everywhere you try."

Collaborative landscape-level approaches could certainly help in B.C., which lacks dedicated endangered species legislation to support its country-leading 1,807 species of animals and plants at risk of extinction and range of land-water issues: the systematic under-reporting of deep-sea fish trawled from provincial waters because of intimidation and harassment of government observers; the diseases, parasites and waste of non-native Atlantic salmon farmed in crowded, open-ocean pens affecting wild Pacific salmon already impacted by overfishing and degradation of spawning habitat; the wine-soaked Okanagan desert, where virtually everything is endangered; the perennial crashes of woodland and mountain caribou; and poster boy for B.C.'s failure to protect old-growth forests, the spotted owl debacle.

A species listed since 2003, but now functionally extinct in the province, not only is a plan for spotted owl recovery 14 years overdue, but the B.C. government approved 312 new clear cuts in the dwindling, highly fragmented old-growth habitat required to reintroduce owls from a captive-breeding program it has funded for years. "It's disappointing," wildlife biologist Jared Hobbs told *The Narwhal* in May 2020. "It's [also] counterintuitive to the government's other purported mandate, which is to conserve species at risk and to recover spotted owls."

As a one-time scientific advisor to the spotted owl recovery team, Hobbs may have been the last person to see this species in the wild in Canada. The current dysfunctional pas de deux results from B.C.'s continued promise to do something—more-or-less buying time—with the feds avoidance of the alternative of forcing the province to protect economically valuable forest habitat using the federal Species at Risk Act.

Not that some good things aren't happening, too—they are, daily, right across the country. Like a successful \$825,000 collaboration between universities, butterfly breeders and conservation groups to reintroduce the endangered mottled duskywing butterfly to its preferred oak savannah habitats in southwestern Ontario. Or the new Mark Bass Nature Reserve comprising wetlands important to flood mitigation and at-risk Blanding's turtle that adds to a patchwork of set-asides in Ontario's Prince Edward County totalling 1,000

hectares. There are successful reintroductions to the wild of swift foxes, black-footed ferrets, Vancouver Island marmots, whooping cranes and leopard frogs to shout about. And the delisting of Pacific humpback whales and peregrine falcons—some of the earliest species officially identified as endangered in Canada.

Yet for every wound to nature for which we staunch the bleeding, a new cut—or three—appears. The reality on the ground is even more brutal. "Why isn't species-at-risk legislation ever mobilized to actually stop something? Why does the economy always trump everything else?" wonders Laurentian's Litzgus, while sharing stories of graduate students working on highway and energy-project construction sites who were reduced to tears by the destruction of habitat containing literally all of Ontario's most at-risk reptiles. Both practically and philosophically, she's right. The need to "balance the economy and the environment" we so often hear from politicians is a distracting abstraction, a zero-sum game in which an environmental "win" is really only a reduced degree of loss. With renewed government resolve, serious money and a new conservation framework in hand, things can only improve.

## Old problems, new normals

Back in 1995, University of British Columbia fisheries scientist Daniel Pauly introduced the phrase "Shifting Baseline Syndrome" to describe the slow creep of changes to nature that caused fisheries scientists to overlook the past, taking diversity and abundance numbers measured early in their careers to be the "normal" state. The concept had immediate application to all of ecology: failure to account for shifting baselines ensures that population declines and target numbers for recovery are chronic underestimates, and that bio-inventories will fail to capture both losses (extirpations) and additions (introduced species). A 2018 review ascribed this widespread "generational amnesia" behind our rising tolerance for environmental degradation and lowered perceptions of what's worth saving to a chronic lack of knowledge of historical ecological data. Coincidentally, the Green Status, a new species-recovery initiative from the International Union for the Conservation of Nature that launched in January 2021, complements that organization's Red List of Threatened Species but focuses instead on recovery rather than extinction. It also incorporates historical data as part of a broader shift toward long-term thinking in conservation biology.

In April 2020, with the pandemic now raging globally, Elizabeth Maruma Mrema, the Convention on Biological Diversity's acting executive secretary, addressed the issue of wildlife markets. Referencing the new coronavirus and recent outbreaks of Nipah and Ebola viruses, all of which putatively originated in bats, Mrema echoed a growing body of literature that shows how large-scale deforestation, habitat degradation, intensification of agriculture, wildlife trade and global warming combine to drive both biodiversity loss and new diseases. "Two thirds of emerging diseases now come from wildlife," she noted, adding that to prevent future pandemics, "countries must ban markets that sell wildlife for human consumption"—while ensuring critical food sources for otherwise dependent communities.

There's an old adage that you shouldn't judge a civilization on its wealth, but on how it treats its working classes, those most relied on for society's material gain. The natural world offers a parallel: despite contributing a yeoman's share to all human progress, we continue to exploit it mercilessly. Nature has no voice to raise in defence, yet when it convulses—as with COVID-19—we all suffer its outcry. How do we start thinking differently?

On the tail end of World Biodiversity Week in May 2020, the Global Biodiversity Festival, hosted by Ontario-based Exploring by the Seat of Your Pants, convened some 65 live virtual events with scientists, explorers, conservationists and policymakers from more than 20 countries. The first-time online festival drew 25,000 YouTube views and raised \$12,000 for six conservation groups. Most presentations banged the drum of more protections, more money, more understanding of biodiversity's role, but perhaps Marco Lambertini, director general of WWF, most clearly summed the actions needed. The need to stabilize climate and biodiversity loss for us to live in harmony with nature should be job one globally, he averred. It will require a sea change in thinking: producing more responsibly and consuming more wisely, building a green economy with subsidies and investment in more sustainable production of food, energy and goods. With \$44 trillion of economic value generation—equivalent to half the world's GDP—dependent on nature according to a report by the World Economic Forum, Lambertini foresees a cultural revolution that puts "the idea that nature is not just beautiful, but indispensable" at the centre of thinking and planning.

"We need a New Deal for Nature and People—a 'Paris moment' for nature, if you will," he said. "We have an opportunity to do that at COP 15."

Although there will be a face-to-face meeting as a second part of COP 15 in Kunming in April 2022, a first part took place online in October 2020. There indeed were big asks, but also a willingness to answer them given the global events of 2020—including some big commitments. Most of the signatories indeed committed to saving 30 per cent of nature, however, whatever other concessional paths are trodden scientists see only one way forward: adopting a carbon-neutral and nature-positive world with the participation not just of governments, but each of seven billion people. So far, even a direct threat to human existence seems but a fleeting and fractious call to action. But maybe there's a simpler way to get everyone onboard. And it isn't a new idea.

"We can't save what we don't love" is a sentiment widely touted in biodiversity circles, one that ultimately informed Margaret Atwood's long-ago answer to Jacqueline Litzgus' dinner party handwringing over why we should care. "You must tell people to simply love turtles, my dear," the author had summed, eyes flashing with intent. "The way they love us—unconditionally."

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