

STANTEC LEADS EFFORTS TO ELEVATE NATURAL CAPITAL ECOLOGICAL SERVICES FINANCIAL VALUATION & MEASUREMENT OF NATURE-POSITIVE OUTCOMES

Stantec unites more than 31,000 employees working in over 450 locations across 6 continents in sustainable architecture, engineering, and environmental consulting, delivering the expertise, technology, and innovation communities need to manage aging infrastructure, demographic and population changes, and the energy transition, innovating at the intersection of community, creativity, and client relationships. Stantec's 2024-2026 Strategic Plan consists of three strategic growth initiatives: Climate Solutions; Communities and Infrastructure of the Future; and Future Technology. Combined with strategic and disciplined acquisitions, Stantec looks to grow net revenues to \$7.5 billion by the end of 2026, rounding out Q3 2024 with a robust and increased backlog of \$7.3 billion. In early 2024, Stantec completed the acquisition of ZETCON, a 645-person leading infrastructure firm in Germany, and closed the acquisition of Morrison Hershfield, a leading transportation, buildings, and environmental services firm with 1,150 people predominantly in Canada and the US. In the spring of 2024, Stantec completed the acquisition of Hydrock, a 950-person integrated engineering design firm headquartered in Bristol, England that brings extensive capabilities in fire safety, energy and sustainability, civil and structural, MEP, transport, environmental, and geotechnical services.

Dom Kempson, Global Nature-based Solutions Program Lead. Mr. Kempson has 30 years of experience in the management of water and natural resources for public, commercial, and private clients. He oversees nature based coastal and marine solutions, ecosystem restoration, flood risk management, urban and watershed scale project development, climate adaptation, and support for water supply, treatment, and conveyance.

EBJ: Describe current trends in natural capital services, particularly in terms of client demands and industry growth?

Kempson: First, it's important to understand there are several ways of defining natural capital services. The short answer is that natural capital encompasses all renewable and non-renewable resources provided by nature, with ecosystem services being examples of natural capital assets. These ecosystem services can be further categorized as "provisioning," such as fiber and fuel provided by timber, "regulating," such as carbon storage in plants and soils mitigating climate change, or "supporting," such as the formation of fertile soil for plant growth. Stantec's involvement in natural capital typically includes assessing, valuing, protecting, and restoring these ecosystem services, which has been driven largely by the ongoing loss and degradation of global ecosystems. The World Bank estimates that the global economy could lose \$2.7 trillion (US) by 2030 if certain ecological systems collapse. Obviously, our

planet, our countries, and our companies have a vested interest in not having that happen. There is strong demand for assessing what we have in terms of this ecological capital, understanding its value, and using nature-based solutions to protect and restore these services. As a result, industry growth in the natural capital market has heavily been influenced by ESG fulfillment, particularly by commitments to climate adaptation, ecosystem restoration, and habitat protection. There has also been an increase in the demand for valuing natural assets as a mechanism for supporting business decisions. This information is typically used for project prioritization, decisions around mitigation measures in the case of environmental impacts, and the exploration of financial market opportunities such as carbon and nature credits. At the end of the day, if you have a degraded asset and can restore its ecological function and improve its value to the community, your employees, customers, and investors, you've made a smart strategic investment.

EBJ: What technological advancements have had the most significant impact on the way Stantec assesses, values, and restores ecological systems?

Kempson: Two technologies stand out: remote sensing using satellites, planes, or drones and environmental DNA (eDNA). Remote sensing using our ExtractX toolkit is dramatically changing how we measure ecological assets. For instance, remote sensing and machine learning can help us calculate how much carbon is being stored in vegetation and soils across large areas. We can monitor how nature-based carbon storage increases over time tracking the contributions of projects to climate change mitigation. Remote sensing helps us assess and value all kinds of ecosystems, from remote tundra ecosystems to mangroves that help protect coastal communities. eDNA is invaluable in helping us to see the unseen in a particular ecosystem. For example, the presence of a hard-to-find endangered Jefferson salamander might not show up in conventional survey methods, but we know they are there (or not there) using eDNA. Another example is we can use eDNA to help a state agency determine whether a river might harbor remnant populations of rare freshwater mussels or fish. This innovative tool can be vital in identifying and assessing critical components of biodiversity, helping clients measure their contributions to a nature positive future.

EBJ: How have recent regulatory changes influenced Stantec's approach to natural capital services, and what adjustments have you had to make?

Kempson: From a technical perspective, being able to identify and articulate natural capital assets has not changed much through regulation; however, the approach to assessment and measurement has evolved over time. The more impactful influence has been related to how cost-benefit analysis (BCA) is developing. This has specific influence on how government agencies make decisions around how natural capital is protected or developed. At Stantec we have been monitoring all of this carefully and have been involved with several agencies in the US and overseas in an advisory capacity. Our goal is to be familiar with evolving BCA approaches, so

we can provide confident advisory services and support to our clients.

EBJ: In which areas of the country are you experiencing a higher demand for these types of services and why?

Kempson: We can point to the western US, where there is a lot of work to restore salmon and steelhead fisheries by removing dams and culverts that don't allow fish passage. Assessing the value of restoring those fisheries versus the costs of upgrading dams is occurring regularly. Also, we are increasingly thinking of the value of those fisheries to traditional users and their communities. Creating resilient coastlines is front and center of this increase in ecological services and valuation. Think of the value of restoring key ecosystems to reduce flooding, protecting our shorelines, community infrastructure, and mitigate or adapt to rising sea levels.

EBJ: Has the Infrastructure Bill impacted the demand for this type of service?

Kempson: Yes. The Biden-Harris Administration and the Bipartisan Infrastructure Law has made considerable investments in ecological services, particularly in the western US and around river and stream restoration. In September 2024, the administration announced \$92 million for 19 aquatic ecosystem projects in western states. The Bipartisan Infrastructure Law also provided \$200 million for the US Fish and Wildlife Service's National Fish Passage Program. Dam removal and river and stream restoration are essential to connecting and improving these ecosystems. The Biden-Harris administration made a concerted effort to adopt nature-based solutions to mitigate climate change impacts.

EBJ: In what ways has climate change impacted your strategies for valuing and restoring natural capital?

Kempson: We have developed critical partnerships in this area. We became a partner in the United Nations Decade on Ecosystem Restoration, solidifying Stantec's position as one of the foremost global ecosystem restoration firms. We're also a proud partner with the Network for Engineering with Nature (N-EWN). Engineering with Nature (EWN) is a plan-

ning and design approach developed by the US Army Corps of Engineers and the University of Georgia that applies natural solutions and nature-based features for mitigation, adaptation, and resilience. N-EWN is a community of researchers, practitioners, and educators working to apply EWN to real-world applications, education, and outreach—and relies on collaboration with industry partners. We also support the Pollinator Habitat Aligned with Solar Energy, or PHASE, project—funded by the US Department of Energy's Solar Energy Technologies Office is led by the University of Illinois at Chicago (UIC). We partnered with Argonne National Laboratory on a multi-year research project to determine how solar farms can improve soil health. We also work with the Global Society of Ecological Restoration to share lessons learned and learn from other practitioners.

The rise in voluntary and regulated actions to mitigate climate change both within and outside the United States has supported the development of global carbon markets, including the voluntary carbon market (VCM). The carbon storage (a component of natural capital) that occurs from the management, restoration, and protection of nature can sometimes be credited and sold on the VCM as an offset. Stantec is supporting clients in identifying and assessing these nature-based carbon solutions as a method of supporting natural capital and mitigating climate change. It is important to note that as with other nature-based solutions, these projects can uplift a variety of other ecosystem services and resulting natural capital.

EBJ: How does Stantec integrate natural capital considerations into its service offerings across water, buildings, transportation, and other sectors?

Kempson: At Stantec, we make a conscience effort to support our clients across all sectors in considering nature-positive alternatives, or integrating nature-based approaches, to address their day-to-day operations, maintenance, and project development. In our strategic plan, Stantec has identified climate solutions as one of our key priorities. A key element of climate solutions is leveraging nature-based

solutions and natural capital as a global opportunity to develop mitigation and adaptation strategies.

EBJ: What are some of the most challenging aspects of executing natural capital projects, and how does Stantec overcome these challenges?

Kempson: The benefits of leveraging ecosystem services can be challenging and are often poorly understood or defined. Informing our clients about the potential co-benefits of a nature-based solution or a traditionally engineered / nature-based hybrid approach is an important part of overcoming the challenges of natural capital projects. Developing transparent and defensible approaches to measuring nature-positive outcomes is also an important element in overcoming the challenges of natural capital projects. It's essential to help clients feel comfortable with this approach. We often step them through a cost-benefit analysis with a nature-based or hybrid solution. Example, if we want to restore a stream from a concrete-lined ditch to a natural system, what is the cost-benefit analysis of that restoration? Maybe now it's a recreation amenity for the community or habitat for rare species. Once you figure out what all of the co-benefits are, it makes the decision to take a nature positive approach easier to justify.

EBJ: What innovative tools or methodologies has Stantec developed for assessing and valuing natural capital?

Kempson: Collecting empirical data from the field can be complex and even dangerous, particularly when we are assessing habitats that may be in remote or hazardous locations. Capturing non-static elements of natural capital, such as mammals, avian species, and pollinators, can be challenging. We are developing more shape recognition technology and refining tools in our eDNA program to be more effective at that. We're also partnering with other technical service providers, so we have access to the best resources available. Whatever technology or tools we use must be grounded in solid scientific principles, transparent, and defensible.

We are also developing more robust approaches to the financial valuation of nat-

ural capital/ecosystem services. There are many regional and global methodologies in existence or under development. Some are better suited to specific types of systems than others and there are many influencing factors to consider, so it's important to identify the right methodology and be cognizant of its strengths and limitations.

EBJ: What future trends do you foresee in the natural capital services sector?

Kempson: Over time, we believe that governments, regulators, private companies, corporations, and financial institutions will become more aligned in how natural capital is defined and valued. It is already happening. For example, the US Government of Information and Regulatory Affairs, Office of Management and Budget, offered this guidance for natural capital and cost-benefit analysis in February 2024. There will always be some nuances associated with geographic locations and geopolitical drivers, but the importance of recognizing the value of protecting, restoring, and creating natural capital assets will continue to be a critical factor in prioritizing actions and investment. At Stantec, we often say hard is easy, easy is hard. We see our role as helping our clients better understand the potential of natural capital and offer solutions for their consideration. It is our job to make this a simpler concept to understand and implement so they can make decisions that fit their business objectives. □

Stantec Named Partner in UN Decade on Ecosystem Restoration

The UN's Decade on Ecosystem Restoration, a global compact signed by 70-plus countries, aims to prevent, halt and reverse the degradation of ecosystems. This effort plays a critical role in achieving the UN's 17 Sustainable Development Goals (SDGs). The UN developed a partnership framework and approved Stantec as the first design and engineering firm to be named an actor partner. Actor partners are private sector entities that develop restoration programs and advise, support, or facilitate restoration activities on the ground, signing a declaration statement and serving on the Science Taskforce.

EA ES&T NATURAL RESOURCES BUSINESS UNIT FOCUSES MORE ON OUTCOMES & ECOLOGICAL RESTORATION WITH INCREASED USE OF TECHNOLOGY AND R&D PROJECTS

EA Engineering Science and Technology Inc. PBC (EA) is a 100% employee-owned public benefit corporation that provides environmental, compliance, natural resources and infrastructure engineering, and management solutions to a wide range of public and private sector clients. Headquartered in Hunt Valley, Maryland, the firm employs more than 700 professionals through a network of 27 commercial offices across the continental United States, as well as Alaska, Hawaii, and Guam. In business for more than 50 years, EA has earned an outstanding reputation for technical expertise, responsive service, and judicious use of client resources.

Jeff Boltz, Senior Vice President/Natural Resources Business Unit Director/Chief Scientist. Mr. Boltz is a Senior Water Resource Ecologist with a specialty in fisheries science, aquatic ecology, planning, and permitting for large water resource construction projects and ecosystem restoration. He has 37 years of experience, including 30 years managing and performing environmental assessments related to water resource development projects such as hydroelectric power, fossil and nuclear generating plants, sediment remediation, and wastewater treatment projects. He leads EA's Natural Resources Business Unit, which provides ecosystem restoration, sediment management, and coastal resilience services. As Chief Scientist, he plays a significant role in the firm's quality management process and decision-making for complex work within the industry.

Dan Savercool, Senior Scientist, National Service Line Program Manager for Natural Resources. Mr. Savercool has worked in the environmental field for more than 41 years in habitats ranging from the open ocean to xeric uplands. His specialty areas include marine and estuarine benthic invertebrates and fish, wetland vegetation (estuarine to freshwater), and habitat-level ecology. His expertise includes ecology, restoration, and creation of freshwater and estuarine marshes, mangrove forests, seagrass meadows, streams, rivers, and adjacent upland habitats. Research experience includes the study of plant and animal colonization of recently restored or impacted coastal habitats, experimental revegetation of wetlands utilizing both marine and freshwater species, and management techniques for the control of undesirable exotic vegetation.

EBJ: What are the main trends influencing the natural resources market?

Boltz: While there are many trends and innovations developing within the natural resources industry, EA has focused on two impactful areas—outcome-orientation and technological efficiencies—both driven by client- and market-changes. Over the last decade, natural resources projects have become much more outcome-oriented versus data collection and monitoring for long-term analysis. Although many restoration techniques have been field-tested and proven successful in a variety of environments, rapidly evolving conditions (driven by sea level rise and climate change) have driven approaches like nature-based solu-

tions and natural infrastructure to become prominent solutions for a host of different natural resource challenges. This outcome-oriented mindset drives the need for increased efficiency in data collection efforts through technology (e.g., drones).

EBJ: Has EA incorporated new services into your practice due to these trends?

Boltz: EA has invested in both human and technology capital—our team and their equipment—to increase our natural resources capabilities in both of these areas. Our Coastal Resilience team has experienced ongoing growth through contracts with the National Park Service, Department of Defense, state and local governments, and non-profits. The firm