

Letter from SER Executive Director Bethanie Walder

Dear SER Members,



In early January, I met with Tim Purinton, Director of the Massachusetts Division of Ecological Restoration (DER), about opportunities to work together. As Tim explained how DER was formed and what it has been able to accomplish in a few short years, I was both intrigued and impressed. So I asked if he would be willing to write an article for *SERNews* about how DER was created, what it has accomplished, and how it could act as a model for other states. Fortunately, he agreed.

I found this quote from his article particularly compelling:

"Unencumbered by legislative mandates, regulatory duties, or a legacy of bureaucratic evolution, the division has been free to 'start fresh' and pursue an integrated, science-based approach to ecological restoration. We focus our work on pro-active restoration of healthy ecological processes without favor to specific species, habitats or geographic locations. As our mission and tag line suggest, we are 'invested in nature and community' and emphasize outcomes that benefit both people and the environment."

To learn more about DER's work, we will be sponsoring a free webinar in May focusing on how the Division is working with multiple partners to help create a "culture" of ecological restoration in Massachusetts. Stay tuned for date/registration details.

You'll find the Massachusetts article in this issue of *SERNews*, along with two other articles about creative institutional approaches to ecological restoration. Emily Gonzales writes about a new partnership between Parks Canada and First Nations to deliver ecological and cultural restoration in Canada, and Keith Bradby explains Gondwana Link's large-scale approach to restoring ecological linkages across Australia.

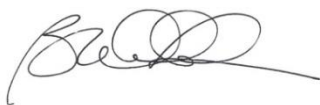
Of course these four stories are just the tip of the iceberg. The new ecological restoration standards from SER Australasia (featured in the [December issue](#) of *SERNews* and in this issue's New Publications section) are another great example. A special issue of *Restoration Ecology* featuring the Australia standards is currently in press. We will also be hosting a free webinar about the Australia standards on April 27 to explain how SER-Australasia developed the standards (including the many partners they worked with), how they expect the standards to be implemented and used in Australia, and how they can act as a model for other countries who want to adopt standards.

Moreover, SER's Science and Policy Committee is currently working with SER-Australasia to take the peer-reviewed version of their standards, adapt them to a more international audience, incorporate some additional components for field-based work, and finally, to disseminate those more broadly throughout our network as the foundation for other SER chapters and partners to consult as they adopt restoration standards in their own countries.

SER has taken a similar approach in the past for internationalizing effective restoration guidance. In 2012, we partnered with Parks Canada and the IUCN to publish [*Ecological Restoration for Protected Areas: Principles, Guidelines and Best Practices*](#). These IUCN standards were built from a 2008 Parks Canada document, [*Principles and Guidelines for Ecological Restoration in Canada's Protected Natural Areas*](#) (which, themselves, may have provided some of the initial inspiration to our Australian colleagues). These three documents, from 2008, 2012, and now 2016, along with numerous other SER publications, provide a growing body of work for SER members and partners to use as the basis for adopting and implementing ecological restoration principles and standards in a wide variety of countries and contexts around the world.

Similarly, constitutional provisions for ecological restoration provide inspiration and opportunity to advance the practice of ecological restoration on the ground. We hope this issue of *SERNews* provides thought-provoking ideas about innovative approaches to implementing and promoting ecological restoration throughout the world. Please read on to learn more about the great restoration efforts underway in Australia, Latin America, Canada, and the US.

Happy Reading,



A State-level Commitment to Restoration: Benefits, Challenges and Opportunities

Contributed by Tim Purinton and Hunt Durey

The Commonwealth of Massachusetts is, to the best of our knowledge, the only state in the U.S. to operate a government division dedicated solely to supporting pro-active ecological restoration. A restoration advocate might ask: How was this division created, what are the benefits of its existence, and what challenges and opportunities does it foresee for the future? We think the answers to these questions may offer some helpful approaches/solutions for other U.S. states, and perhaps local or regional governments in other countries.

Located within the state's Department of Fish and



Completed in 2014 the removal of the Bartlett Pond Dam saved the Town of Lancaster taxpayers an estimated \$600,000 in dam repair costs under dam safety regulations.

Game, the Massachusetts Division of Ecological Restoration (hereafter referred to as DER or Division) works with many partners to restore and protect the Commonwealth's rivers, wetlands and watersheds for the benefit of people and the environment. Unencumbered by legislative mandates, regulatory duties, or a legacy of bureaucratic evolution, the division has been free to 'start fresh' and pursue an integrated, science-based approach to ecological restoration. We focus our work on proactive restoration of healthy ecological processes without favor to specific species, habitats or geographic locations. As our mission and tagline suggest, we are 'invested in nature and community' and emphasize outcomes that benefit both people and the environment.

The DER was created in 2009 through the merger of two smaller programs dedicated to wetland restoration and river protection. DER supports a staff of 15 and has an annual budget of \$2.9 million, currently complemented by over \$18 million in secured, multi-year federal grants and other project funding. During its formation, DER staff adopted the Society for Ecological Restoration's definition of restoration to guide our work and provide a philosophical foundation. Accordingly, DER pursues initiatives and projects that restore and enhance ecological functions and values through physical actions, as well as through targeted education and technical assistance that helps our partners protect and preserve ecosystem health. DER shies away from projects that are over-engineered, are not process-based, or that require long-term operation and maintenance.

The Division is organized into three main program areas: physical restoration, stream flow restoration, and technical assistance and outreach. DER supports capital-based projects through a community-based partnership model. Physical restoration techniques include dam and fill removal, stream daylighting, floodplain reconnection, stormwater improvements, and culvert replacement. The Division also assists many non-physical restoration efforts such as streamflow and water quality monitoring, policy and regulatory development, and social marketing research to facilitate behavior change (e.g., to improve water conservation).



Removal of this dilapidated dam reconnects 40 upstream river miles on a beautiful trout stream in Pepperell, MA. Removal was completed in 2015.

Why should scarce state resources be used to create a state-wide restoration program?

- *Economics*: Investment in ecological restoration can be strongly justified to the public and decision-makers through the universally understood language of money, jobs, and services that protect public health, safety, and quality of life. To better understand the economic impact of restoration investments, DER contracted with economists to analyze job creation, as well as direct, indirect and induced economic benefits. The findings show that investments in restoration produce jobs and economic output that equal or exceed other industries, including

transportation, clean energy, and water infrastructure. Every million dollars invested in Massachusetts restoration projects sustains 12.5 jobs and generates \$1.75 million in total economic output. DER's work is driven by the core principle that public funds spent on restoration should maximize the return on investment in terms of social, economic, and ecological benefits.

- *Leveraging:* An important performance measure for any state agency is its ability to attract non-state dollars. DER maintains a high ratio of at least 1 to 5; every state dollar spent leverages at least five dollars of non-state investment. Since 2009, DER has helped local communities secure competitive non-state funding awards totaling over \$45 million. In 2014, the U.S. Fish and Wildlife Service awarded DER \$14.9 million in Superstorm Sandy disaster relief funding, enabling the construction of 14 ecological restoration projects. Just four of these projects are estimated to sustain 181 jobs and produce \$25.4 million in economic output for the Massachusetts economy.
- *Ecosystem Services:* Ecological restoration can generate many valuable benefits for people, such as reducing flood damage, improving water quality, decreasing greenhouse gas emissions, helping communities adapt to climate change, and supporting commercial and recreational fisheries, while also enhancing public safety and quality of life. To better document ecosystem benefits, DER looked at select projects and found, for example, that one coastal wetland restoration adjacent to a critical business district reduced economic impacts from future flood impacts by an estimated \$2.5 million over a 30-year period. Another tidal restoration project on Cape Cod helped two towns save an estimated \$3.9 million over 30 years; money that otherwise would have had to be spent on wastewater infrastructure to meet mandatory water quality standards.

In addition to demonstrating the benefits of restoration, a track record of community engagement and project implementation creates an ever-expanding circle of trust. DER and partners have completed over 90 ecological restoration projects and have 60 projects in development. Over 1,600 acres of coastal wetlands have been restored, and over 250 river miles have been reconnected. One by one, the completion of these projects over time has built an awareness and understanding across the state that investment in ecological restoration creates jobs, stimulates economic activity, and generates long-term economic value.

A statewide program can provide the technical capacity and resources needed to support restoration at a landscape scale. For example, DER recently spearheaded the largest Atlantic white cedar swamp restoration in the Gulf of Maine and is currently overseeing the restoration of over 325 acres of a retired cranberry farm that encompasses the entire headwaters of a coastal watershed. On Cape Cod, DER and a diverse array of partners are advancing one of the most ambitious coastal estuary restoration projects on the Eastern Seaboard, the Herring River Restoration, which encompasses 1,000 acres of wetlands and over 6 miles of waterways.

A state-based program can also help coordinate efforts and resources across many agencies and levels of government. For example, DER has worked closely with state and federal regulators to improve understanding of restoration goals and outcomes, and to streamline regulatory requirements. There are also significant opportunities to link ecological restoration practices with dam safety, transportation upgrades, climate change adaptation, and land acquisition. These

opportunities to cross-pollinate ideas and practices continue to build momentum across Massachusetts.

Maintaining a state agency subject to annual funding cycles, changes in administration, and layers of bureaucracy has its challenges. As state and local governments face tight budgets, DER staff is inundated with requests for technical and financial assistance, especially for infrastructure upgrades. The geography and population density of Massachusetts also present challenges, as large areas of historic infrastructure and landscape alteration make holistic restoration a challenge and sometimes cost-prohibitive. On a more macro-level, evolving climate change projections have prompted the Division to look more closely at investments in coastal salt marsh restoration and evaluate how best to restore wetlands that may be compromised as sea level rises.



Currently under construction, the Tidmarsh Farms Restoration project will restore approximately 3.5 miles of stream and 250 acres of wetlands in Plymouth, MA.

The good news is that despite the challenges, a “restoration culture” is emerging in Massachusetts, and with it a support system that fosters an ambitious ecosystem restoration agenda. This support system includes the growth and capacity building of strong grassroots organizations, private investment, scientific and academic research, education and outreach, flexible regulations, experienced engineering firms, and steadier sources of funding.

By investing in the natural infrastructure that supports its economy and quality of life, Massachusetts has built and nurtured these support networks over the past two decades. While much progress has been made, our work continues to more fully embed ecological restoration into the public and government gestalt.

For more information on DER, contact Tim Purinton, Director, Mass Division of Ecological Restoration, tim.purinton@state.ma.us. Hunt Durey is Deputy Director of the Mass Division of Ecological Restoration.

The authors presented this topic further in an SER Webinar entitled How to Create and Sustain a State-Based Ecological Restoration Division: The Massachusetts Model. [You can view the recording here.](#)

Ecological Restoration with Parks Canada: Guided by Principles, Shaped by People

Contributed by Emily Gonzales

Restoration is on the rise with international promises to restore at least 15% of degraded ecosystems (the 2010 Conference of the Parties to the Convention on Biological Diversity) and 150 million hectares (the 2011 Bonn Challenge) globally by 2020. While the world makes international commitments to ecological restoration, the field itself is re-examining the role of history in light of human influences and rapid environmental change (i.e., novel ecosystems, Hobbs et al. 2014 and Murcia et al. 2014). As these concepts are deliberated in the academic literature (e.g., Aronson et al. 2014, Hobbs et al. 2014), practitioners might be curious about

how to translate consideration of past and future into an operational principle to meet the targets set for 2020. Perhaps a different way of seeing the relationship between people and ecosystems will help illuminate a path forward.

Over the past decade, three principles—that ecological restoration should be effective, efficient, and engaging—were developed to guide ecological restoration internationally ([Parks Canada 2008](#), [Keenleyside et al. 2012](#), [Standards Reference Group SERA 2016](#)). To incorporate consideration of historical conditions and environmental change, Suding et al. (2015) suggested a fourth principle, that “restoration is informed by the past and future”. That is, historical knowledge can indicate how ecosystems functioned in the past and can provide references for identifying potential future trajectories and measuring the functional and compositional success of projects.

Ecosystems of the past are often characterized as the “pristine,” desired state, the state prior to human interference. Environmental fields such as conservation biology and restoration ecology have traditionally viewed humans as a negative impact on ecosystems. The concept of “wilderness”, for example, imagines a dichotomy between humans and nature. In contrast, Indigenous Peoples tend to include humans and their relationships with all of Creation in their conceptualizations of the environment (Whyte 2013). In the past, the role of Indigenous Peoples in maintaining the ecological integrity [of a place] was often ignored or overlooked ([Parks Canada 2015a](#)). Yet the “intact” or “pristine” ecosystems and “historical fire regimes” that have served as reference sites and targets for ecological restoration were themselves the product of human activities since time immemorial.

In fact, some ecosystem degradation is the result of removing Indigenous practices that were maintained sustainably for thousands of years ([Parks Canada 2015a](#)). For example, the decline of predators (carnivores and humans) has resulted in hyperabundant deer. Overbrowsing then leads to further losses of biodiversity. By providing Indigenous People the space to engage in traditional practices in a way that’s meaningful to them, we can take advantage of opportunities to improve ecological integrity while also providing social benefits such as improved food security (Kuhnlein and Receveur 1996), cultural sustainability, and the potential for economic growth.

A great example of this is the restoration of clam gardens on the Pacific Coast of Canada by the [Gulf Islands National Park Reserve](#) and Coast Salish First Nations (Figure 1). Clams have long been an important staple for coastal First Nations, and for thousands of years, clam gardens were created by expanding beach flats to maximize shellfish production. Clam gardens



Figure 1(a): Intertidal area on Russell Island in 2009, few features of the clam garden are visible (Photo: Nathan Cardinal).



Figure 1(b): Reconstructed wall of the Russell Island clam garden in 2015, built by the hands of many First Nation volunteers and directed by traditional knowledge holders. In 2015, 192 volunteers (75% Indigenous) contributed 1,764 volunteer hours restoring clam gardens (Photo: Iain Robert Reid).

produce four times as many butter clams and twice as many little neck clams as unmodified beaches (Groesbeck et al. 2014). Clam gardens are ecologically productive and culturally important places and are now also serving as classrooms, where knowledge is being transferred to younger generations about traditional intertidal management practices.

In New Brunswick, on Canada's Atlantic coast, Indigenous and local communities also had a strong connection to place and to the ocean in a region traditionally sustained by a fishing industry. Inner Bay of Fundy (IBoF) Atlantic salmon runs that were 40,000 strong in the mid-1980s, declined to fewer than 500 in 1998, putting the species at risk of local extinction. In 2003, Fort Folly First Nation and [Fundy National Park](#) began a partnership for wild [IBoF Atlantic salmon recovery](#). In an innovative collaboration with the aquaculture industry, young salmon are raised in conservation sea cages (Figure 2) and then released to streams throughout the Bay of Fundy region. Over a decade later, Fort Folly First Nation is a leader in salmon conservation, and technical skills and employment opportunities have increased as a result of the program ([Fort Folly Habitat Recovery 2015](#)). This illustrates one of the important principles for ecological restoration, that "restoration benefits and engages society" (Suding et al. 2015).



Figure 2: Conservation sea cage, an innovation in salmon recovery in New Brunswick, Canada (Photo: Corey Clarke).

Parks Canada is now working towards an [improved model](#) of collaborative ecological restoration that values and respects Indigenous Peoples' knowledge systems and provides new opportunities for cooperative management ([Parks Canada 2015b](#)). This model is based on Parks Canada's guiding principles for working with Indigenous partners:

1. Partnership: Working collaboratively in heritage place planning, management and operations.
2. Accessible: Encouraging access to traditional lands and traditional activities.
3. Respectful: Building mutual respect, trust and understanding.
4. Knowledge-Based: Honoring and incorporating traditional knowledge.
5. Supportive: Supporting Indigenous partners' community interests ([Parks Canada 2015b](#)).

Today, Parks Canada has established relationships with over 300 Indigenous groups. While the maturity, scale and scope of these relationships differs with every group, the importance of strengthening these relationships has been recognized since the 1980s through legislative changes and updates to Parks Canada plans, policies, and guidelines.

The "three E's"—effective, efficient, and engaging—have become foundational principles for ecological restoration practice, and now there is a need to augment this framework with an understanding of past human influences on the land and future conditions under scenarios of rapid environmental change. Adopting this more dynamic perspective on the relationship between people and ecosystems may benefit from "two-eyed seeing". Two-Eyed Seeing (Bartlett et al. 2012) refers to learning to see from one eye with the strengths of Indigenous knowledge and ways of knowing, and from the other eye with the strengths of Western knowledge and ways of knowing ... and learning to use both these eyes to see more clearly, for the benefit of all.

Emily Gonzales, PhD, is an Ecological Restoration Specialist with the Natural Resource Conservation Branch of Parks Canada/Government of Canada. Contact her via emily.gonzales@pc.gc.ca

Acknowledgements

Hul'q'umi'num and WSÁNEĆ; Fort Folly First Nation; Nathan Cardinal, Resource Conservation Manager, Gulf Islands National Park Reserve; Corey Clarke, Project Coordinator, Fundy National Park; Jillayne Peers, A/Engagement and Consultation Advisor, Indigenous Affairs and Cultural Heritage Directorate; Katherine Cumming, Manager, Environmental Services, Infrastructure Planning; Kent Prior, Manager, Active Management, Ecological Restoration; Nathalie Gagnon, A/Director, Indigenous Affairs and Cultural Heritage Directorate

Literature Cited

Aronson, J., Murcia, C., Kattan, G. H., Moreno-Mateos, D., Dixon, K., & Simberloff, D. (2014). The road to confusion is paved with novel ecosystem labels: a reply to Hobbs et al. *Trends in ecology & evolution*, 29(12), 646-647.

Bartlett, C., Marshall, M., & Marshall, A. (2012). Two-eyed seeing and other lessons learned within a co-learning journey of bringing together Indigenous and mainstream knowledges and ways of knowing. *Journal of Environmental Studies and Sciences*, 2(4), 331-340.

Fort Folly Habitat Recovery (2015). www.ffhr.ca Accessed April 13, 2016.

Green, S. J., Armstrong, J., Bogan, M., Darling, E., Kross, S., Rochman, C. M., Smyth, A. and Veríssimo, D. (2015). Conservation needs diverse values, approaches, and practitioners. *Conservation Letters*, 8(6), 385-387.

Groesbeck, A. S., Rowell, K., Lepofsky, D., & Salomon, A. K. (2014). Ancient clam gardens increased shellfish production: Adaptive strategies from the past can inform food security today. *PloS one*, 9(3), e91235.

Hobbs, R. J., Higgs, E. S., & Harris, J. A. (2014). Novel ecosystems: concept or inconvenient reality? A response to Murcia et al. *Trends in ecology & evolution*, 29(12), 645.

Hobbs, R. J., Higgs, E., Hall, C. M., Bridgewater, P., Chapin, F. S., Ellis, E. C., Ewel, J. J., Hallett, L. M., Harris, J., Hulvey, K. B. and Jackson, S. T. (2014). Managing the whole landscape: historical, hybrid, and novel ecosystems. *Frontiers in Ecology and the Environment*, 12(10), 557-564.

Keenleyside, K., Dudley, N., Cairns, S., Hall, C., & Stolton, S. (2012). Ecological restoration for protected areas: principles, guidelines and best practices (Vol. 18). IUCN. <https://portals.iucn.org/library/efiles/documents/PAG-018.pdf>

Kuhnlein, H. V., & Receveur, O. (1996). Dietary change and traditional food systems of indigenous peoples. *Annual review of nutrition*, 16(1), 417-442.

Murcia, C., Aronson, J., Kattan, G. H., Moreno-Mateos, D., Dixon, K., & Simberloff, D. (2014). A critique of the 'novel ecosystem' concept. *Trends in ecology & evolution*, 29(10), 548-553.

Parks Canada and the Canadian Parks Council (2008). Principles and guidelines for ecological restoration in Canada's protected natural areas. National Parks Directorate, Parks Canada Agency. http://www.pc.gc.ca/docs/pc/guide/resteco/guide_e.pdf

Parks Canada (2015a). *The Land is Our Teacher: Reflections and stories on working with Aboriginal Knowledge holders to manage Parks Canada's Heritage Places*. Indigenous Affairs Branch, Parks Canada Agency.

Parks Canada (2015b). *Promising Pathways: strengthening engagement and relationships with Aboriginal peoples in Parks Canada heritage places*. Indigenous Affairs Branch, Parks Canada Agency.

Standards Reference Group SERA (2016) *National Standards for the Practice of Ecological Restoration in Australia*. Society for Ecological Restoration Australasia. Available from URL: <http://www.seraustralasia.com>

Suding, K., Higgs, E., Palmer, M., Callicott, J. B., Anderson, C. B., Baker, M., Gutrich, J. J., Hondula, K. L., Lavevor, M. C., Larson, B. M. H., Randall, A., Ruhl, J. B., & Schwartz, K. Z. S. (2015). Committing to ecological restoration. *Science*, 348(6235), 638-640.

Whyte, K. P. (2013). On the role of traditional ecological knowledge as a collaborative concept: a philosophical study. *Ecological processes*, 2(1), 1-12.

Gondwana Link and the Mission to Restore Ecological Function Across Southwestern Australia – Are We There Yet?

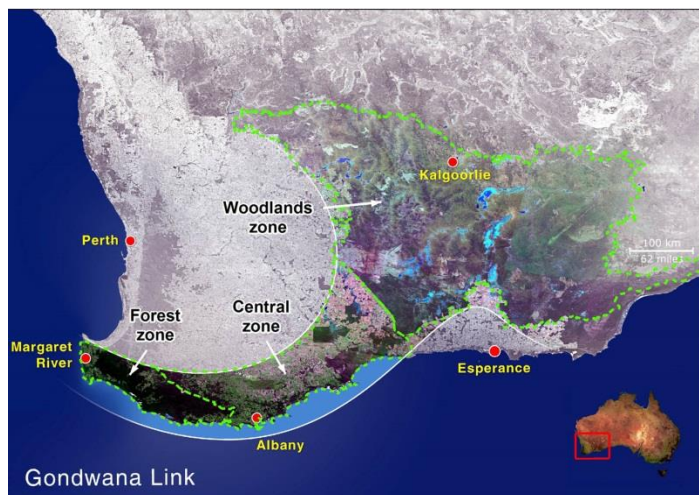
Contributed by Keith Bradby

Restoration programs, like ecosystems themselves, work at all scales across a huge range of approaches and mechanisms. And they evolve, generally through interplay between opportunity and pressure.

I'd expect a Society made up of restoration experts to have a few quibbles about those statements, indeed about any statements, but those opening lines are also a fairly apt summary of the [Gondwana Link](#) program.

Gondwana Link started formally in mid-2002, after a decade or two of cogitation, and a few years of discussion, recruitment and agreement building. The pressure came from the ecological collapse happening around us – the postscript to a century of mass land-clearing for agriculture, an unprecedented loss of mammals and their functional roles, major changes in fire regimes and other factors.

All this despite the fact that Europeans had only settled in Western Australia (WA) within the last two hundred years, and only really spread out in the last hundred or so years. Therein sat the main opportunity. Over some parts of southwestern Australia, large areas of reasonably natural habitat remained, and by the 1990's it seemed that the larger-scale developments affecting southwestern Australia were easing – land-clearing controls were introduced, logging of old-growth forest largely ceased, and the region's extreme ecological richness was becoming increasingly recognized. There was also an increasing frustration that regardless of the more



The Gondwana Link program has three main zones of activity, and is implemented through a number of local Conservation Action Plans.

traditional methods of conservation – protected areas, species-specific recovery programs, voluntary programs with farmers, etc. – there was still a growing tide of species becoming endangered.

Only large-scale change, focused on restoration of underlying ecological functions, can reverse downhill trends in ecological health and resilience. More than just a response to pressures, the formation of Gondwana Link was a clear seizing of opportunity, in that the program encompasses most of the large remaining habitat areas in southwestern Australia, which are aligned along the climate gradient from wet forest to the much drier outback. Keeping this in mind, one of the primary aims of Gondwana Link is to restore ecological connectivity across a 1,000-kilometer stretch of southwestern Australia (the Link).

Initially Gondwana Link was a collaboration between just six groups, some local and some national, who agreed to work together on a broad vision for the region. An important ingredient in this initial agreement, perhaps particularly with some of the larger groups, was the early involvement of The Nature Conservancy, who were evaluating what roles they might play in Australia, and who saw supporting Gondwana Link as an opportunity to not only achieve important work on the ground, but also encourage more ambitious and privately funded conservation approaches in Australia. The Conservancy committed critical early funds, which also helped attract support.

The underlying strategy was quite simple – start in a place of obvious priority, build momentum through tangible achievement and then expand outward. Since fragmentation was a primary issue, initial funds were used to start securing and restoring key properties in a 72-kilometer gap between two major national parks, Stirling Range and Fitzgerald River. That part of the program grew rapidly and attracted widespread attention because large-scale restoration of agricultural lands had not previously been used as a major conservation strategy. As such, restoration presented considerable challenges, conceptually and technically, for the main groups leading the effort. Various re-vegetation techniques had been used in WA for many years, but ecologically focused restoration of farmland is different, and it took some years for cost-effective restoration approaches to emerge (i.e. see [Jonson 2010](#)). Similarly, having multiple groups working together brings challenges ranging from how to integrate operationally to how to market shared needs and achievements.

While this work was underway in a largely agricultural landscape, Gondwana Link secured funds through The Nature Conservancy for another group to explore the needs of a large, relatively intact area on the eastern end of the Link. By drawing together the known science of that area, with some adroit political footwork and advocacy, in 2008 bi-partisan political support was achieved for improved protection and management of the area now known as The Great Western Woodlands. At 16 million hectares, this area is now recognized as the largest remaining temperate woodland on earth. Much of the area is public land (quaintly called 'Unallocated Crown Land' in Australia), so we worked closely with the WA government and other key stakeholders for two years on a management strategy. In the end, however, the government agencies were unable and/or unwilling to rise to the challenges inherent in a large-scale and long-term cohesive program across multiple tenures. Much of the government funding secured for the woodlands through our lobbying was spent by the main government agency on their own priorities, and the government has not allocated any additional funding.

Since then, Gondwana Link has worked closely with a number of on-the-ground organizations, such as local councils, mining companies and Traditional Owners, to develop and implement detailed Conservation Action Plans (Plans) for parts of the Woodlands. These have consistently identified changed fire regimes and increasing populations of invasive species as key threats, and various strategies are now being implemented, primarily by local organizations. At the same time, Australia's Federal Court has recognized Native Title over large parts of the Woodlands, and we have been able to support the Ngadju and Nyungar people to establish ongoing management programs. The increased public profile of the Woodlands is also stimulating a substantial increase in research and monitoring. Some of this may take years to produce results for management, while some is feeding straight into the Plans as they are developed.

Since 2008, a number of locally based groups along the Link have joined in the broader effort, and Gondwana Link has supported them in developing and implementing Conservation Action Plans as a first step. While these plans are useful in integrating various viewpoints and information and attracting funding, the primary purpose is to focus action into strategies that make a direct impact on restoring ecological function across the landscape.

Much has been achieved in the past 14 years, with some 20 groups and many individuals now actively involved; areas like the Great Western Woodlands are now recognized and under improved management, and in the habitat gaps of the agricultural areas, close to 4,000 hectares of farmland have been restored. For all that, we have only built the foundation from which a connected and ecologically healthy 1000 kilometers of resilient systems can be achieved. Using a mix of the 'from the ground up' plans and broader knowledge on how southwestern Australia functions ecologically, we have now developed a 'Whole of Link' ecological framework and associated costings to define what is needed to substantially complete the work of achieving the Link in the coming decade. Scaling up has its own challenges; it is not a simple matter of fitting the ecological 'Russian dolls' of each area's plan together, and from a restoration perspective, there is a somewhat bewildering interplay between one site's restoration work and the work of restoring ecological functions across much larger areas.

While the task of prioritizing restoration work across a 1,000-kilometer program remains daunting, good progress is being made on establishing clear standards of operation. We produced our first site-based restoration standards in 2010, and have been a proud participant in the development of National Standards by SER Australia.

Also at a national level, there is now much greater appreciation of the need to restore at scale, and Gondwana Link has been joined by a small number of similarly ambitious programs across Australia. Through 2011 and 2012, we worked with Government, along with many others, to produce a National Wildlife Corridor Plan, which brought together for the first time a nationally cohesive approach to restoration of connectivity and associated ecological functions. Unfortunately this plan got caught in the polarized politics of Australia, and was discarded by the incoming government. Instead, Australia has drifted back towards a relatively ineffective rare species by rare species conservation approach.

The future of the Gondwana Link program, and perhaps Australian landscape-scale restoration in the foreseeable future, may depend upon private funding. To that end we are developing a range of investment packages to work alongside the existing philanthropic funding that has underpinned our efforts so far. Wish us luck!

Keith Bradby is the CEO of Gondwana Link. Contact him via email: bradby@gondwanalink.org.

Further reading and resources

Bradby K (2012) *Gondwana Link: Process or plan, movement or organisation*. In: *Innovation for 21st Century Conservation* (eds P. Figgis, J. Fitzsimons, and J. Irving), pp 100-107. Australian Committee for IUCN, Sydney, available online from http://www.iucn.org/about/union/secretariat/offices/oceania/oceania_resources_and_publications/?14830/Innovation-for-21st--Century-Conservation
<https://site.emrprojectsummaries.org/2016/03/06/nowanup-healing-country-healing-people/>

<https://site.emrprojectsummaries.org/2016/03/06/defining-reference-communities-for-ecological-restoration-of-monjebup-north-reserve-in-gondwana-link/>

<https://site.emrprojectsummaries.org/2016/03/07/peniup-ecological-restoration-project/>

Watson A, Judd S, Watson J, Lam A, Mackenzie D (2008) *The Extraordinary Nature of the Great Western Woodlands. The Wilderness Society of WA Inc, Perth*, available from <https://cdn.wilderness.org.au/archive/files/the-great-western-woodlands-report.pdf>

Society News

Dear SER Members,



2016 continues its whirlwind pace at the Society. Bethanie mentioned the global restructuring in the [February edition of SERNews](#), and the board approved the revised bylaws in their March meeting. To begin operationalizing some of the changes in the global restructure process, we met with leaders from our U.S. and Canadian chapters earlier this month to discuss ways of creating a more engaged and cohesive communication network among the North American Chapters and facilitating greater coordination of their efforts. Details are provided below!

In March, we relaunched *Restore*, our monthly roundup of news on ecological restoration. This month, we've started work on transitioning to a new database and updating our website. I don't want to say too much as I don't want to jinx anything, but when the new web infrastructure is in place (fingers crossed for July), you'll have improved access to a fantastic suite of restoration resources, as well as an easy way to connect and network with your fellow SER members.

A number of our chapters recently concluded some very successful conferences – you can read more below, and we'll also have more to report in June.

This is a terrific time to be a part of the Society, and we're thrilled to have you as a member. If you have questions, please don't hesitate to [drop me a note](#).

Best,

Marguerite
Membership & Communications Director

Global Restructuring

Over the past decade, the Society for Ecological Restoration has played an increasingly important role internationally in promoting high quality ecological restoration science and practice. To remain at the forefront of this rapidly evolving discipline, the Society needed an updated structure to enable us to fully and equally engage restoration practitioners and researchers throughout the world.

Recognizing this, and especially as a result of conversations at the 2013 World Conference, the Chapter Relations Working Group (now the Chapter Relations Committee) put together an ad hoc committee to discuss how the Society could create a more globally balanced organization and best meet member needs, while also continuing to advance the practice and promise of restoration. The global restructuring project had three goals:

1. to move SER forward as a stronger and more cohesive global network to accomplish its mission of promoting ecological restoration;
2. to continue to support SER's membership base in North America while expanding, supporting, and fully representing a growing international membership base; and
3. to enhance SER's capacity to provide member services and engage in international restoration issues over the long term.

Over the past two and half years, SER identified key outcomes for the process; conducted research into the way in which other similar organizations are structured; circulated a membership survey that garnered a response from approximately 25% of the membership; iteratively presented ideas to the Board of Directors and Chapter Relations Working Group, including at least three rounds of feedback and revision; and finally, in March 2016, the Board of Directors voted to approve a formal restructuring plan.

Below is a summary of the key changes to SER's structure.

Board Structure

- Board Composition: Balanced international geographic representation by consolidating to 6 continental membership regions, and reduced the size of the board from 22 to 15.
- Elections: Shifted elections to even years to improve transition and to enhance World Conference engagement.
- Executive Committee: Slight modifications to Executive Committee selection/appointment, conduct an assessment in 2019 to revisit whether to consider direct elections of Executive Committee.
- Committee Structure: Simplify structure by making all working groups into Committees.
- Advisory Committee: Approved the addition of an appointed advisory committee to provide fiscal, legal, organizational management, and fundraising support.

Chapter/Organizational Structure

- Chapters: Create a regular communication/collaboration network for North American chapters.
- Subchapters: Allow the creation of subchapters underneath existing chapters.
- Membership Benefits/Fees: Shift to a “chapter-inclusive” membership structure where basic membership fees include chapter membership and all members can join one chapter or section for no extra cost.
- Thematic Sections: No formal change
- Organizational/Business Memberships: Promote higher levels of support from organizations and businesses, but no functional change to these memberships.
- Student Associations: No change.
- Partners: Promote and encourage partnerships with like-minded organizations at the international, national and chapter levels.

North America Coordinating Meeting Update

On Friday, April 8, in spite of absolutely stunning weather in Portland, Oregon, leaders from nearly all of SER’s eleven North American chapters resisted temptation to explore the region and remained indoors to discuss how to create a better communication and collaboration network among the North American chapters. While the conference room was dreary, the conversation was nothing short of lively and engaging.

This was the first time in SER’s history that nearly all of our North American chapters gathered in person to talk about working together more effectively. Discussion revolved around what a North American coordinating body would look like and the kinds of projects it might work on, starting with developing and delivering a biennial North American conference. The Chapters agreed that they want to work together to deliver the conference every other year in a way that doesn’t over-burden any one chapter, especially smaller chapters. The first biennial conference will likely be in 2018, and the Chapters intend to determine the region and hosts/co-hosts within the next 3-4 months. The North American conferences will be held in the “off-years” when SER World Conferences are not occurring. In addition to discussing conferences, the participants considered other opportunities to work together, including coordinating nominations to the SER International Board, and possibly cooperating on restoration policy issues and other collective efforts to advance ecological restoration within North America.

In addition to discussing formal collaboration opportunities, representatives shared best practices for developing webinars and video presentations, producing conferences, and delivering fun, high-quality networking opportunities like the popular pub talks organized by the Central Rockies Chapter.

The meeting participants are currently developing next steps and plan on transitioning the conversation to a North American sub-group of the Chapter Relations Committee until the new coordinating body is formalized. Many thanks to Chapter Relations Committee Chair Carol

Maxwell, and NW Chapter President Rolf Gersonde for their assistance in coordinating the meeting, and to all of the Chapter Representatives for participating.

Restore is Back! (and better than ever)

We know many of our members were disappointed when we suspended publication of *Restore*, SER's roundup of current news from the world of ecological restoration, in 2014. At that time, we began incorporating news articles into *SERNews*, but now with greater staffing and a focus on providing more benefits for our members, we have decided to bring *Restore* back. Thus, we are thrilled to report that *Restore* has been... restored!

Each month, *Restore* will contain news articles from around the world that we think you'll find interesting and hopefully relevant to your work. We will also highlight newly published articles from *Restoration Ecology*, SER's peer-reviewed journal, as well as opinion pieces, blog posts and more.

In case you missed it, you can find the April issue of *Restore* [here](#). *Restore* is available for both members and non-members, so please share with your friends and colleagues. If you're not receiving *Restore*, [click here to sign up](#).

SER Chapter News

Midwest-Great Lakes Chapter 8th Annual Meeting

Contributed by Jen Lyndall and Rocky Smiley

The SER Midwest-Great Lakes Chapter (SER MWGL) held their 8th Annual Meeting at Indiana University in Bloomington, Indiana from April 1-3, 2016. Over 200 attendees gathered to discuss a number of topics related to this year's meeting theme, "Overcoming Challenges to Ecological Restoration in the 21st Century." The meeting hosts included Eco Logic, Indiana University, and the City of Bloomington Parks and Recreation.

The keynote speaker was Douglas Ladd, the Missouri Director of Conservation for The Nature Conservancy. Doug's humbling and inspiring speech, "Does Ecological Restoration Need a Rethink?" is available via the [SER MWGL website](#), and we encourage you to give it a listen. The opening plenary, also [available online](#), featured speakers from The Nature Conservancy (John Shuey, Ellen Jacquart), Michigan State University (Lars Brudvig), and The Restoration Ecology Lab (Steve Glass) to provide a diversity of perspectives on the challenges for ecological restoration and potential strategies for overcoming these challenges to ensure the success of future restoration efforts in the Midwestern United States. Additionally, our meeting hosts organized a plenary session on "Campus-Community Partnerships for Restoration, Research, and Education" that included presentations and tours of three restoration and research sites.



The meeting also included three symposia (soil microbes in ecological restoration; restoration in rights-of-way; and restoration and management in ravines and steep forestland), two workshops (sedge identification and data quality), a sponsorship reception, a business meeting, and 63 contributed oral and poster presentations. Presentation topics include invasive species control, use of fire, evaluating restoration techniques, overviews of restoration designs, and much more! On Sunday, attendees had the opportunity to attend one of two field trips: 1) Large Scale Shallow Wetland and Native Grass Prairie Restoration or 2) Increasing Ecological Resilience in Southern Indiana Forests.

Mid-Atlantic Chapter 11th Annual Meeting

Contributed by Terry Doss

The eleventh Annual Meeting of the SER Mid-Atlantic Chapter was held at the Stockton Seaview Inn in Galloway, New Jersey from Sunday March 13 through Tuesday March 15, 2016. The theme of the meeting, “Highlands to High Tides – Restoring our Watersheds”, focused on the wide range of range of habitats found in our region.

The conference opened on Sunday when the Chapter held its annual SER member meeting, covering news from the past year as well as focusing on new events for the coming year. Chapter President Joe Berg of Biohabitats, led the meeting, which also included gratitude awards to both Bob Swain of The Dawson Corporation and Patti Burns, now Executive Director of Moose Mountain Regional Greenways. Both have provided years of service to the Chapter. We look forward to many more years with Bob, but missed Patti who recently moved away from the region to become Executive Director of Moose Mountain Regional Greenways in New Hampshire. We are sure she will become active up in the New England region in years to come.



The weather on Monday was wet and cold, but all was warm and bright inside the historical Seaview Stockton Inn, with views of Reeds Bay. The morning’s plenary highlighted the meeting’s theme, with the first talk focused on watershed restoration from Melinda Daniels of the Stroud Water Research Center, followed by a focus on coastal restoration from Stewart Farrell of the Stockton University Coastal Research Center. The day was punctuated by talks from 18 contributors who each gave a 7-minute presentation. The format was quick, informative and energizing. Most presenters also had posters at the back of the room so deeper discussions could ensue at the Poster Pub Celebration held at the end of the day. Before the poster pub began, the afternoon plenary sessions concluded the day’s presentations with talks about habitat restoration design from Jeff Keller of Habitat by Design, and coastal restoration by Paul Castelli of the U.S. Fish and Wildlife Service (USFWS) and Tim Dillingham of the American Littoral Society.

Pepco Holdings sponsored 18 student scholarships, and over 7 colleges were represented at the conference including Temple U, SUNY-ESF, Monmouth U, U of Delaware, Virginia Commonwealth U, Rutgers U, U of Penn, and one high school student who teamed up with a student from SUNY-ESF. The Mid-Atlantic Chapter is proud of our ever-growing ranks of student members and expresses thanks to Wes Hudson for starting the effort and Keith Nevison for continuing to grow student involvement.

Tuesday was devoted to the workshop/field trip, "A Day at the Beach". Although the weather was still cold and wet, 50 attendees spent the day together on a luxury bus traveling along the NJ bay and ocean coastline reviewing past restoration efforts. Terry Doss of Biohabitats and Carl Alderson of NOAA led the tour and facilitated lively discussions throughout the day.

All in all, attendees stated that a lot of good information was provided over the short period, but more importantly, there were a lot of opportunities to catch up with old colleagues and meet new ones.

New Student Association – University of Waterloo

Contributed by L. Jonas Hamberg, Dianne Watkins and Cheryl Chan

University of Waterloo (UW) should have started an SER Student Association a long time ago! UW is home to: 1) a large Faculty of Environment; 2) programs in Environmental Science and Environmental Studies (including an undergraduate level Diploma in Ecological Restoration and Rehabilitation); 3) a multi-faculty collaborative Water Institute; and 4) the Editor-in-Chief of *Restoration Ecology*, Stephen Murphy. There has been a hum of SER-related activity here for years. With the SER Ontario Annual General Meeting hosted at UW in the fall of 2015, efforts were renewed to get the Student Association started.



UW-SER is currently composed of about 25 undergraduate and graduate students. Our association held its first meeting in January 2016 and to date has already participated in Atlantic salmon stocking with [Ontario Streams](#) and riparian shrub plantings with the [Royal Botanical Gardens](#) in Hamilton. Waterloo is located in southern Ontario about an hour outside Toronto. The city is part of the Grand River watershed —near the Niagara Escarpment, Lake Erie, and Lake Ontario. This area is in an ecological zone dubbed 'Carolinian Canada', the northernmost part of the Carolinian life-zone, housing 25% of Canada's biodiversity on just 0.25% of the country's area, along with 25% of Canada's population. Much of the surrounding area is agricultural, with fast growing residential developments and suburbs putting further pressure on these lands and watersheds.

While restoration efforts have already been undertaken in areas such as quarries, forests, grasslands, wetlands, rivers and shorelines, still more is needed. UW-SER aims to help students connect with and contribute to both new and ongoing restoration efforts throughout this region and beyond.

The UW-SER membership acknowledges that we operate within the traditional territories of the Anishinaabe and Haudenosaunee peoples, and that Ontario's pre-development ecosystems are in large part the product of millennia of indigenous traditional management practices. With this in mind, UW-SER would like to remind us all (per the SER mission) that we need to restore an ecologically healthy relationship between nature and culture.

The Executive of UW-SER at the moment of writing: L. Jonas Hamberg (Co-President (Graduate)), Josh Pickering (Co-President (Undergraduate)), Cheryl Reyes (Vice-President (Undergraduate)), Gwyn Govers (Vice-President (Graduate)), Cheryl Chan (Secretary), Kevin Allemang (Treasurer) and Dianne Watkins (Shadow-committee)

Intern Bios

We are delighted to introduce you to a couple of wonderful interns who have been working with SER the last couple of months.



Mariah McIntosh is a biology major at the University of Montana, with minors in Climate Change Studies and Wilderness Studies. Her interests in plant ecology, climate change, and ecological restoration drew her to the internship at SER. She is researching case studies that exemplify good restoration practices and mitigation of, or adaptation to, climate change, which will be incorporated into SER's new and improved website later this summer.

Tom Sentner is pursuing a master's degree in Environmental Studies at the University of Montana. He is working with SER board member Daniel Spencer to develop sponsorship policies for the Society. Tom has worked on ecological restoration projects in Florida, Illinois, and Washington State and enjoys looking for salamanders (because who doesn't?!).



Lindsay Wancour is an Environmental Studies graduate student at the University of Montana. She moved from Michigan to Montana to join Montana Conservation Corps (MCC). While in MCC she fell in love with environmental work. While at the University of Montana, she hopes to further her abilities in engaging community members in conservation and restoration efforts.

New SER Members

The following businesses and organizations became new SER members in February and March. Welcome!

Sarva Bio Remed LLC, Princeton, New Jersey, USA

[Penrith Lakes Development Corporation](#), Sydney, Australia

[Keep Indianapolis Beautiful](#), Indianapolis, Indiana, USA

[EA Engineering, Science, and Technology, Inc. PBC](#). Warwick, Rhode Island, USA

[The New York Botanical Garden](#), Bronx, New York, USA

[Riverside-Corona Resource Conservation District](#), Riverside, California, USA

SER Chapter Conferences & Events

SER Europe Conference 2016

Best Practice in Restoration

August 22-26, 2016 – Freising, Germany

The 10th European Conference on Ecological Restoration promises a friendly and exciting atmosphere to stimulate dialogue between restoration scientists, practitioners and policy makers, and to collaborate on the challenge of **Best Practice in Restoration**. [Registration is now open](#).

SER Southeast Chapter Annual Symposium and Membership Meeting

Headwaters to Hightide: Expanding Opportunities for Restoration

October 19-21, 2016 Quincy, Florida

SER-SE invites you to submit an abstract for presentations as part of the technical sessions at their conference [“Headwaters to Hightide: Expanding Opportunities for Restoration”](#) October 18-21, 2016 in Quincy, Florida. They are especially interested in topics of Aquatic and Terrestrial Restoration, Invasive Exotics, Monitoring, Climate Change Implications, Adaptive Management, Ecosystem Services, Reference Sites, Practitioner Considerations, Education and Outreach, Endangered Species and New Ideas. You can find additional details about the submission guidelines on [SE-SER's website](#). Deadline to submit a proposal for workshop or special session is May 16, 2016.

SER2017 World Conference on Ecological Restoration

Linking Science and Practice for a Better World

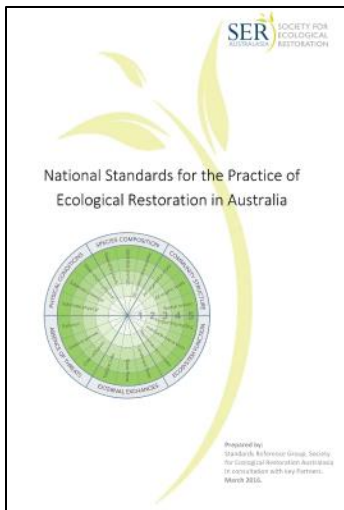
September 2017 – Iguassu Falls, Brazil

The 7th SER World Conference on Ecological Restoration will take place in Iguassu Falls, Brazil from August 27-September 1, 2017. Be sure to mark your calendar for what promises to be a spectacular venue and spirited group of conference goers! Details are forthcoming.

New Publications

National Standards for the Practice of Ecological Restoration in Australia

*Prepared by SER Australasia Standards Reference Group and 12 Partner NGOs**



The National Standards for the Practice of Ecological Restoration in Australia were officially launched at the National Seed Science Forum, MT Annan Botanic Gardens, Sydney, Australia on March 15, 2016. From the SER Australasia website:

“The Standards have been designed to encourage all restoration and rehabilitation projects in Australia to reach their highest potential. The Society for Ecological Restoration Australasia (SERA) and 12 partner organizations developed the national Standards over a three-year period carefully considering the needs of all stakeholders. The drafting process involved four formal drafts, collectively worked on by the partners in consultation with hundreds of key stakeholders including agencies, researchers and industry organizations and individual practitioners.”

Kingsley Dixon, Tein McDonald and Justin Jonson will presented on the development of these Standards in a webinar Wednesday, April 27, 2016. Click [here](#) to view the recording.

**Australian Association of Bush Regenerators (AABR), Australian Institute of Landscape Architects (AILA), Australian Network for Plant Conservation (ANPC), Australian Seed Bank Partnership (ASBP), Bush Heritage Australia (BHA), Gondwana Link, Greening Australia (GA), Indigenous Flora and Fauna Association (IFFA), The Nature Conservancy (TNC) (Advisor), Trees For Life (TFL), Trust for Nature (TFN Vic) and WetlandCare Australia (WCA).*

Estimating the Economic Impacts of Ecosystem Restoration – Methods and Case Studies

By Catherine Cullinane Thomas, Christopher Huber, Kristin Skrabis, and Joshua Sidon for the USGS

“Federal investments in ecosystem restoration projects protect Federal trusts, ensure public health and safety, and preserve and enhance essential ecosystem services. These investments also generate business activity and create jobs. It is important for restoration practitioners to be able to quantify the economic impacts of individual restoration projects in order to communicate the contribution of these activities to local and national stakeholders. This report provides a detailed description of the methods used to estimate economic impacts of case study projects and also provides suggestions, lessons learned, and trade-offs between potential analysis methods.”

Restoration of Impaired Ecosystems: An Ounce of Prevention or a Pound of Cure?

Guest Editors: Aida Farag and Ruth Hull

An Integrated Environmental Assessment and Management Special Series, resulting from a technical workshop organized by SER and SETAC, reports on the best scientific practices to achieve ecological restoration while addressing contaminant concerns. The articles cover topics such as coordinating ecological restoration and risk assessment, a framework for establishing restoration goals, translating theory into practice, monitoring recovery and risk, and integrating restoration with assessment and management.

Restoration Ecology, Editor's Picks

The March 2016 issue of [*Restoration Ecology*](#) (Vol. 24, Issue 2) is available online. Featured below are some Editor's Picks courtesy of Editor-in-Chief and Managing Editor of *Restoration Ecology*, Stephen Murphy and Valter Amaral.

[Using performance standards to guide vernal pool restoration and adaptive management](#)

Karen J. Schlatter, Akasha M. Faist, and Sharon K. Collinge

Schlatter et al. tackle a key issue in restoration ecology: how do we really measure restoration success – or more broadly, performance? One of the oft-neglected angles of this issue is that endpoint measurements are implicitly sought but ecological systems don't really have endpoints, hence measures related to effect size are probably more relevant. In their case study on California vernal pool restoration projects, Schlatter et al. have emphasized continuous monitoring and a focus on function over form (structure). They also discourage some criteria that are more endpoint rather than effect size related. This paper is important because it moves the conversation towards how we measure performance and uses an excellent case study to illustrate ways in which this can be accomplished.

[Can commercial soil microbial treatments remediate plant–soil feedbacks to improve restoration seedling performance?](#)

Lora B. Perkins and Gary Hatfield

Seedling performance is a key aspect in restoration of grasslands, and this greenhouse study tested four soil microbial treatments (fungal inoculum, bacterial inoculum, fungicide, and fungicide/bactericide) for remediation potential of soil microbial communities and native seedling germination in soil occupied by invasive plants. Perkins and Hatfield's results indicate that the efficacy of the microbial treatments depends on which invasive species previously occupied the site, as well as which native species are seeded. Interestingly, this study also found that microbial treatments can decrease the performance of invasives even without a positive effect on the natives.

[Enriching small trees with artificial nest boxes cannot mimic the value of large trees for hollow-nesting birds](#)



Darren S. Le Roux, Karen Ikin, David B. Lindenmayer, Gideon Bistricher, Adrian D. Manning, and Philip Gibbons

Somewhat inspired by the 'Field of Dreams' hypothesis, the addition of nest boxes in modified landscapes is often assumed to be a positive restoration strategy. However, little empirical data exists to support the actual attraction of hollow-nesting fauna to nest boxes. This study tested nest box use in different landscape contexts (reserves, pasture, urban parklands, and urban built-up areas) and different tree sizes. Nest boxes attracted significantly more hollow-nesting birds in large trees, especially in modified landscapes, but not in medium or small diameter trees. This restoration strategy may need further assessment in space and time to ascertain its effectiveness when large native trees are not present.

Public perceptions of a white-tailed sea eagle (*Haliaeetus albicilla* L.) restoration program

Michael Mayhew, Ian Convery, Roy Armstrong and Billy Sinclair

Following the *Reintroduction Guidelines* of the IUCN, this study reports on a public attitudinal survey on a future reintroduction of white-tailed sea eagle. The methods may well serve as example to other raptor reintroductions requiring baseline social information ahead of a more structured and focused reintroduction consultation and implementation. Overall, the survey demonstrates public support for reintroduction of white-tailed sea eagle in Cumbria, England, mostly on the back of eco-tourism. Interestingly 42% of respondents had never heard of this species before, which very much highlights the importance of informative campaigns targeting the general public.

Want to subscribe to *Restoration Ecology*? Email membership@ser.org to add a subscription to your current SER membership, or renew your membership with a subscription online: www.ser.org/membership

In Case You Missed It

We shared the following articles from *Restoration Ecology* via Twitter and Facebook earlier this month.

Quandaries of a Decade-Long Restoration Experiment Trying to Reduce Invasive Species: Beat Them, Join Them, Give Up or Start Over?

The historical and continued degradation of Hawaiian and Pacific Island environment has opened the door to species invasions that have transformed entire ecosystems and altered historic disturbance regimes. Once transformed, these habitats are often at a point of no return.... [read more](#)

Australian Farmland Restoration Scheme a Cost-Effective Win-Win for Biodiversity and Farmers

A unique voluntary agri-environment scheme in southeastern Australia is not only benefiting farmers, but is also yielding greater restoration outcomes at half the cost of the prevailing restoration approach.... [read more](#)

[Is That Ecosystem Really Degraded, Or is it Just Different?](#)

One of the world's leading restoration ecologists has questioned the way we use the term 'degraded'. According to CEED Chief Investigator Professor Richard Hobbs this is far more than simple semantics. How we assess whether a system is degraded has major implications for whether restoration is required... [read more](#)

Connect with us!



Know someone interested in ecological restoration? Please share this issue of SERNews with them! For information on how to become an SER member, drop us a note at membership@ser.org or visit our website: www.ser.org/membership