Payments for Ecosystem Services: Catalog of Online Tools and Resources

As the concepts of ecosystem services and payments for ecosystem services (PES) have gained in popularity, numerous web-based resources have been created to 1) provide and exchange information about ecosystem services, and 2) facilitate transactions between buyers and sellers, or those who provide ecosystem services and those who wish to compensate those providers. In 2011, we searched the internet for web-based ecosystem services resources, reviewed what we found, and compiled them into a catalogue. In 2013, we updated the catalogue with newly available information and have made it available here for others working in the field of ecosystem services, including landowners.

Several fact sheets accompany this catalogue, including an overview of the types of resources discovered, and a fact sheet for each resource type (matchmakers, evaluators, libraries, and networks). The fact sheets include challenges and opportunities for future development of such resources, along with recommendations for each resource category.

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Site/ Tool	Parent	Web Address	Type	Category	Description/ Use
Artificial Intelligence for Ecosystem Services (ARIES)	University of Vermont	http://www.arie-sonline.org/	Multi-Ecosystem Service Assessment Tool	Evaluator	ARIES is a web-based technology offered to users worldwide to assist rapid ecosystem service assessment and valuation (ESAV). ARIES helps users discover, understand, and quantify environmental assets and the factors influencing their values, for specific geographic areas and based on user needs and priorities with the intent of improving decision making.
Bay Bank, The	Gund Institute for Ecological Economics	http://www.arie-sonline.org/	Ecosystem Service Marketplace (Northeastern US)	Matchmaker	Bay Bank is the Chesapeake's conservation marketplace, linking landowners with resources to improve and protect the region's natural resources and working lands. Bay Bank combines the best available tools to enable easy access to local, regional, and national ecosystem markets and conservation programs.
Business and Biodiversity Campaign	Conservation, Sustainable Solutions LLC Global Nature Fund	http://www.business-biodiversity.eu	Aggregator of Innovative Ecosystem Service Market Strategies	Library/ Network	The European Business and Biodiversity Campaign aims to disseminate information and demonstrate methodologies and tools that help businesses to assess and mitigate their impacts on biodiversity and ecosystem services. This includes showcasing innovative case stories and building strategic partnerships.
Business and Biodiversity Offsets Program (BBOP)	The Pinchot Institute for Forest Trends, Wildlife Conservation Society	http://bbop.forest-trends.org/index.php	Bio-Diversity Focused Ecosystem Service Assessment Tool	Evaluator/ Network	The Business and Biodiversity Offsets Programme (BBOP) is a collaboration of more than 75 leading organizations and individuals who are testing and developing best practice on biodiversity offsets and conservation banking worldwide. This includes a set of principles and methodologies informed by the on-the-ground experiences of our business partners to help developers demonstrate no net loss of biodiversity.
Conservation Connect	Center for Absentee Landowners	http://www.absenteelandowners.org/	Portal for Conservation Grant and Assistance Programs	Matchmaker	Conservation Connect works to inform and assist absentee landowners with understanding and implementing conservation programs on their land. The Conservation Connect website acts as a clearinghouse for tools and resources that will enable and empower absentee landowners to implement conservation.
Climate, Community, and Biodiversity Alliance	Conservation International	http://www.climate-standards.org/	Ecosystem Service Standards and Protocols	Evaluator/ Network	The CCBA brings together diverse stakeholders through a transparent and inclusive participatory process to develop standards that stimulate, identify and promote high quality multiple-benefit land-based carbon activities.
Collaborative Conservation Learning Network	Colorado State University - Warner College of Natural Resources	http://www.collaborativeconservation.org	Learning and Action Network	Network	The purpose of the Collaborative Conservation Learning Network (CCLN) is to facilitate the exchange of ideas, innovations, tools and study results, and to foster connections among academics, practitioners and others, to help worldwide collaborative conservation efforts become effective and sustainable.
Conservation Registry	The Nature Conservancy	http://www.conservationregistry.org	Project Inventory and Case Stories	Library	The Conservation Registry is a free online database that tracks and maps conservation, restoration and wildlife projects across the U.S. Defenders of Wildlife eveloped this landscape-scale conservation tool to facilitate informed decision-making, inspire collaboration, and provide context and effectiveness for conservation work.
Conservation Marketplace Midwest	Conservation Marketplace Midwest	http://www.conservationmarketsofmn.org/	Ecosystem Services Marketplace	Matchmaker	Conservation Marketplace of Minnesota (CMM) offers a direct, innovative market structure that connects and oversees voluntary ecosystem market transactions, resulting in measurable environmental benefits.
Corporate Ecosystem Valuation	World Business Center for Sustainable Development	http://www.wbcsd.org/Pages/EDocument/EDocument-Details.aspx?ID=104	Ecosystem Services Assessment and Valuation Guidance	Evaluator	This framework enables companies to consider the benefits and value of the ecosystem services they depend upon and impact, giving them new information to consider in business planning and financial analysis. The guide operationalizes at the company level the framework proposed by The Economics of Ecosystems and Biodiversity (TEEB) initiative of the G8 Environment Ministers (2007/2010).

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Ecosystem Based Management Tool Network	NatureServe	http://www.ebm-tools.org/	Aggregation of Ecosystem Management Tools	Library/ Network	The Ecosystem-Based Management (EBM) Tools Network is one of the premier sources of information about coastal and marine planning and management tools in the US and internationally. The Network works to connect coastal and marine practitioners with appropriate tools through a wide variety of outreach and training activities.
Ecosystem Commons	OSU Institute for Natural Resources	http://ecosys-temcommons.org	Ecosystem Services Regional Forum	Network	The Ecosystem Commons is an online portal to the ecosystem services world that allows practitioners to connect virtually, hosts discussions relevant to ecosystem services research and development, showcases projects, and tracks trends.
Ecosystem Credit Accounting	Willamette Part-nership	http://willamette-partnership.org/ecosystem-cred-it-accounting	Ecosystem Service Standards and Pro-tocols	Evaluator	The Ecosystem Credit Accounting System is a package of protocols, tools, and resources that allow buyers and sellers to trade in multiple types of ecosystem credits for voluntary and regulatory markets. and includes. The ECAS represents agreement among diverse stakeholders on numerous methodologies for calculat-ing ecosystem service credits.
Ecosystem Crediting Platform	Willamette Part-nership	http://willamette-partnership.ecosys-temcredits.org/	Online Platform to Manage Projects that Generate Ecosystem Service Credits	Evaluator	This tool translates environmental restoration and conservation actions into eco-system service credits using the Ecosystem Credit Accounting System. Users of this software can map their projects, create multiple project designs, and manage their projects through the required approval process.
Ecosystem Marketplace - Katoomba Group	Forest Trends	http://www.ecosys-temmarketplace.com/	Aggregation of Ecosystem Service Markets and News	Library	The Ecosystem Marketplace is a leading source of news, data, and analytics on markets and payments for ecosystem services (i.e., water quality, carbon seques-tration, and biodiversity). This website covers policy, finance, regulation, science, business, and other factors relevant to developing ecosystem service markets.
Ecosystem Services Database of Tools	The Nature Con-servancy	http://www.conser-vationgateway.org/Files/Pages/ecosys-tem-services-data-ba.aspx	Aggregation of Ecosystem Service Assessment Tools	Library	The Ecosystem Services Database of Tools is a Microsoft Access database that de-scribes dozens of tools that can be used to assess, map and / or value ecosystem services within an area of interest. For each tool, the database provides information such as which ecosystem services it includes, whether or not the tool is spatial, types of data needs, and links to find out more information.
Ecosystem Services Review (ESR)	World Resources Institute	http://www.wri.org/project/ecosys-tem-services-review	Ecosystem Services Assessment and Val-uation Guidance	Evaluator	The Corporate Ecosystem Services Review (ESR) is a structured methodology for corporate managers to proactively develop strategies for managing business risks and opportunities arising from their company's dependence and impact on ecosys-tems.
Ecosystem Services Working Group	BSR	http://www.bsr.org/en/our-work/working-groups/ecosystem-ser-vices-tools-markets	Learning and Action Network	Network	The BSR Ecosystem Services Working Group seeks to connect corporate lead-ers with ecosystem services experts, tool developers, and policy makers through structured and facilitated meetings. The working group is also responsible for synthesizing corporate experiences and recommending next steps related to pilot applications of ecosystem services concepts and tools within corporate settings.
Ecosystem Valuation.org	Unknown	http://www.ecosys-temvaluation.org/uses.htm	Ecosystem Service Valuation Guidance	Library/ Evaluator	This site discusses the purposes and context for ecosystem valuation and provides descriptions of specific valuation methods, including both dollar-based measures as well as non-monetary measures, and case study illustrations of each method. In addition to providing information, it also seeks to gather feedback from practi-tioners.

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Ecosystem Valuation Toolkit	Earth Economics	http://www.esvaluation.org/	Aggregation of Ecosystem Services Assessment Information and Tools	Library/ Evaluator	The Ecosystem Valuation Toolkit provides access to: the world's largest database of published valuation data and literature from natural and social sciences; a research community platform to upload and review valuation research; a self-service tool to conduct ecosystem service valuation and natural capital appraisal; and a directory that connects users with ecosystem valuation professionals.
Environmental Finance Center-Directory of Watershed Resources	Environmental Finance Center - Boise State University	http://efc.boisestate.edu/Tools/tabid/58/Default.aspx	Searchable Conservation Funding Database	Matchmaker	The Directory is an on-line, searchable database of financial resources for environmental projects. It includes federal agency, state and private foundation resources that can be discovered using multiple search methodologies. The Directory is meant to help users save time in finding potential funding.
Environmental Trading Network	Environmental Trading Network, Keiser and Associates, LLC	http://www.envtn.org/Home.html	Information and Advocacy	Network	The Environmental Trading Network (ETN) is dedicated to sharing information related to the development and implementation of successful water quality trading programs and other market-based strategies for achieving healthy, sustainable ecosystems. It is a primary national clearinghouse for key policy and regulatory issues, and transferable water quality trading program design elements.
Environmental Valuation Reference Inventory, The (EVRI)	Environment Canada	https://www.evri.ca/Global/HomeAnonymous.aspx	Ecosystem Service Valuation Studies	Library	The EVRI is a searchable storehouse of empirical studies on the economic value of environmental benefits and human health effects. It has been developed as a tool to help policy analysts use the benefits transfer approach. Using the EVRI to do a benefits transfer is an alternative to doing new valuation research.
Integrated Biodiversity Assessment Tool (IBAT)	BirdLife International, Conservation International, International Union for Conservation of Nature, UNEP World Conservation Monitoring Centre	https://www.ibatforbusiness.org	Bio-Diversity Focused Ecosystem Service Assessment Tool	Evaluator	IBAT for business is an innovative tool designed to facilitate access to accurate and up-to-date biodiversity information to support critical business decisions. Through an interactive mapping tool, decision-makers are able to easily access and use up-to-date biodiversity information to identify biodiversity risks and opportunities within a project boundary.
Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST)	Stanford University, The Nature Conservancy, the World Wildlife Fund, University of Minnesota	http://www.naturalcapitalproject.org/InVEST.html	Multi-Ecosystem Service Assessment Tool	Evaluator	InVEST models and maps the delivery, distribution, and economic value of ecosystem services and biodiversity. InVEST enables decision-makers to assess the tradeoffs associated with alternative choices and to identify areas where investment in natural capital can enhance human development and conservation in terrestrial, freshwater, and marine ecosystems.
i-Tree - USFS	USDA Forest Service	http://www.itree-tools.org/	Ecosystem Service Assessment and Valuation Tool (Urban Forestry)	Evaluator	i-Tree is a software suite from the USDA Forest Service that provides urban forestry analysis and benefits assessment tools. The i-Tree Tools help communities of all sizes to strengthen their urban forest management and advocacy efforts by quantifying the structure of community trees and the environmental services that trees provide.
Katoomba Group	Forest Trends	http://www.katoombagroup.org/	Ecosystem Services International Forum	Network	The Katoomba Group is an international network of individuals working to promote, and improve capacity related to, markets and payments for ecosystem services (PES). The Group serves as a forum for the exchange of ideas and strategic information about ecosystem service transactions and markets, as well as site for collaboration between practitioners on PES projects and programs.

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Landscope	NatureServe, The National Geographic Society	http://www.land-scope.org/	Conservation Planning Website	Library/ Matchmaker	LandScope America brings together maps, data and information about our environment from many sources and presents them to the public in dynamic and accessible formats. Landscope provides a platform for sharing case stories, connecting landowners and intermediaries, and disseminating information used to prioritize, plan, finance and implement conservation projects.
LandServer	Pinchot Institute for Conservation	http://www.land-server.org/	Portal for Ecosystem Service Opportunities and Conservation Grant and Assistance Programs	Evaluator/ Matchmaker	LandServer is a web-based tool that provides farmers and woodland owners with a quick and easy natural resource assessment, an evaluation of their property's potential to receive payments for implementing conservation actions, and information on how to get started. LandServer produces reports by analyzing a robust database of geographic, ecological, physical, and other data sets.
Land Trust Alliance	Unknown	https://www.landtrustalliance.org/	Easement resources for land trusts and landowners	Library/ Matchmaker	The Land Trust Alliance provides a multitude of resources pertaining to conservation easements for land trusts and landowners, including a "find funding" section, a "learning center" library of resources, fact sheets, and a registry of land trusts.
MarketPlace for Nature	Defenders of Wildlife	http://marketplace.conservationregistry.org/	Highlights PES and ESM Programs	Library/ Matchmaker	Marketplace for Nature is an online resource that highlights conservation projects designed to conserve ecosystem services by quantifying and reporting their values or marketing these benefits to regulated or voluntary buyers. The portal provides additional information about ecosystem services markets and projects. Buyers and sellers can use the portal to find one another and conduct transactions off line.
Markit Environmental Registry and Auction Solutions	Markit Environmental	http://www.markit.com/en/products/environmental/environmental.page?	Ecosystem Service Marketplace and Registry	Matchmaker	Markit operates the world's largest and most diverse environmental registry for carbon, water and biodiversity credits. The site allows users to list, search for and record environmental assets in one secure location. Markit also provides an independent auction platform for environmental assets.
Multi-scale Integrated Models of Ecosystem Services (MIMES)	Affordable Futures, LLC	http://www.afordablefutures.com/services/rav	Multi-Ecosystem Service Assessment Tool and Valuation Tool	Evaluator	MIMES is a a multi-scale, integrated set of models that enables understanding of the contributions of ecosystem services by quantifying the effects of varying environmental conditions derived from land use change. MIMES evaluates land use changes and subsequent effects on ecosystem services and human welfare at a global, regional and local level.
Mission Markets	Mission Markets	http://missionmarkets.com/	Ecosystem Services Investments and Marketplace	Matchmaker	This site provides socially and environmentally responsible companies, organizations, and projects with access to mission aligned capital in the form of ecosystem services. Private Capital Marketplace allows organizations to post debt offerings and capital requests from accredited investors. Mission Markets Earth, meanwhile, is a centralized ecosystem markets exchange.
My Land Plan	American Forest Foundation	www.mylandplan.org	Portal for Conservation Grant and Assistance Programs	Library/ Matchmaker	The exclusive Land Plan tool enables woodland owners to map the boundary of their land, set goals and plan actions to care for their land, and receive information specially tailored for what you want to do on your land. The site provides information about landowner assistance programs as well as intermediaries who can help them achieve their conservation objectives.
National Conservation Easement Database	U.S. Endowment for Forestry and Communities	http://nced.conservationregistry.org/browse/map	Searchable Conservation Easement Database	Library	The National Conservation Easement Database (NCED) is the first national database of conservation easement information, compiling records from NGOs and agencies throughout the US. This effort organizations plan more strategically, identify opportunities for collaboration, advance public accountability, and raise the profile of what's happening on-the-ground.

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National Ecosystem Services Partnership	Duke Nicholas Institute for Environmental Policy	http://nicholasinstitute.duke.edu/initiatives/national-ecosystem-services-partnership#.UWBhYaK7KeY	Learning and Action Network	Network/ Library	The National Ecosystem Services Partnership (NESP) engages both public and private individuals and organizations to enhance collaboration within the ecosystem services community and to strengthen coordination of policy and market implementation and research at the national level. The site also provides access to key ecosystem services related information.
National Mitigation Banking Association	National Mitigation Banking Association	http://mitigation-banking.org/	Information and Advocacy	Network/ Library	The National Mitigation Banking Association promotes and encourages the concept of wetland mitigation banking on both a federal and state regulatory level. The general purpose of the Association is to work toward the overall acceptance, use and operation of mitigation banks as a means of compensating for adverse impacts to our nation's environment.
Natural Value Initiative (NVI)	Fauna and Flora International	http://www.natural-valueinitiative.org	Ecosystem Services Assessment and Valuation Guidance	Evaluator	The Natural Value Initiative evaluates how well the food, beverage and tobacco sectors are managing biodiversity and ecosystem services risks and opportunities and engage companies in these sectors to reduce their risk exposure through the responsible management and harvesting of natural resources.
Nutrient Net	Pennsylvania Department of Environmental Protection	http://pa.nutrient-net.org/	Ecosystem Service Marketplace (Nutrient & Water Quality Trading)	Evaluator/ Matchmaker	Pennsylvania's Nutrient Trading Program is a voluntary program that can be used by point and non-point sources that exceed their environmental obligation to calculate and generate credits that may be traded to those seeking nutrient reduction credits.
Nutrient Trading Tool	USDA NRCS, USDA ARS, Texas Institute for Applied Environmental Resource, Tarleton State University	http://nn.tarleton.edu/ntthelp032012/whnjs.htm	Ecosystem Service Assessment Tool (Nutrient & Water Quality)	Evaluator	NTT is a web-based application that compares agricultural management systems to calculate a change in nutrient loss potential (nitrogen, phosphorous, sediment loss potential) and crop yield. This information enables users to understand and participate in water quality or nutrient trading markets.
Private Landowner Network	Resources First Foundation	http://www.privatelandownernetwork.org	Portal for Conservation Grant and Assistance Programs	Library/ Matchmaker	The Private Landowner Network is a searchable database of resources for landowners to connect with regional land conservation activities, including financial and technical assistance programs (e.g., government payment programs) in their regions as well as contact information for intermediary organizations.
Regional Internet Bank Information Tracking System (RIBITS)	US Army Corps of Engineers	http://geo.usace.army.mil/ribits/index.html	Case Studies (Wetland Banking)	Evaluator/ Matchmaker	RIBITS is internet database to monitor mitigation and conservation banking and in-lieu fee programs across the country. RIBITS allows users to access information on the types and numbers of program sites, documents, credit availability, service areas, as well policies and procedures. RIBITS also allows the District to track and monitor the status of mitigation banks.
Rural Voices for Conservation Coalition	Sustainable Northwest	http://www.sustainablenorthwest.org/what-we-do/programs/rural-voices-for-conservation-coalition	Learning and Action Network	Network	The Rural Voices for Conservation Coalition brings participants together to develop policy solutions to meet the ecologic and economic challenges facing the rural West. Ecosystem services has been a popular topic of discussion in RVCC working groups focused on public and private working lands. Under the banner of the Ecosystem Services Learning Action Network, RVCC participants are learning about ecosystem services pilot projects around the West and the potential for rural communities and landscapes to benefit from payments for ecosystem services.

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Speciesbanking. com	Ecosystem Marketplace	http://www.species-banking.com/	Ecosystem Service Marketplace (Habitat & Biodiversity Trading)	Library/ Matchmaker	Speciesbanking.com is a global information clearinghouse for biodiversity offsetting, compensation and offset banking. In addition to policy information and case stories, it provides program-level information on existing banks, credit availability, trader contact information, species inventory and industry trends, etc.
StreamBank	The Freshwater Trust	http://www.the-freshwatertrust. org/conservation/ water-quali- ty-trading/stream- bank-web-platform	Restoration Streamlining Tool	Evaluator	The StreamBank® web platform is a unique and innovative web-based platform that enables landowners and restoration professionals to efficiently fund, permit and implement a restoration project. StreamBank-implemented projects can result in certified ecosystems services credits that provide real, measureable ecological uplift.
Valuing Nature Network	Living With Environmental Change (LWEC)	http://www.valu-ing-nature.net/	Learning and Action Network	Network	The Valuing Nature Network's supports interdisciplinary partnerships to scope, develop and promote research capacity in the valuation of biodiversity, ecosystem services and natural resources and facilitate the integration of such approaches in policy and practice in the public and private sectors.
Watershed Connect	Forest Trends and Ecosystem Marketplace	http://www.water-shedconnect.com/	Aggregation of Watershed Services Information	Library	Watershed Connect is an online platform that serves as a centralized space to learn about the latest news and analyses surrounding natural water infrastructure investments, join relevant social media discussions, share your project or organization's work, access key resources and tools, and research ongoing efforts on payments for watershed services (PWS) and water quality trading.

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