

Rebecca S. Epanchin-Niell

Resources for the Future
1616 P St., NW
Washington, D.C. 20036

Tel: (202) 328-5069
epanchin-niell@rff.org
www.rff.org/epanchin-niell

EDUCATION:

Stanford University	Earth Systems	B.S., 1997
University of Nevada, Reno	Biology	M.S., 2001
University of Nevada, Reno	Applied Economics & Statistics	M.S., 2003
University of California, Davis	Agricultural & Resource Economics	Ph.D., 2009

APPOINTMENTS:

2016 – Present	Fellow with Indefinite Appointment (Tenure), Resources for the Future, Washington DC
2010 – 2016	Fellow, Resources for the Future, Washington, DC
2009 – 2010	Postdoctoral Fellow, Agricultural & Resource Economics, U.C. Davis
2003 – 2004	Research Associate, Dept. of Resource Economics, University of Nevada, Reno
2000 – 2003	Independent Biological Consultant
1997 – 1998	Research Technician, Biological Resources Research Center, U of Nevada, Reno

EXPERTISE:

Research addresses issues at the intersection of ecology and economics, including invasive species policy and management, cost-efficient natural resource management, cross-jurisdictional resource issues, biodiversity conservation, ecosystem service provisioning, spatial targeting of natural resource policies and management, and US Endangered Species Act implementation.

JOURNAL ARTICLES:

Gerber, L., M. Runge, R. Maloney, G. Iacona, C. Drew, S. Avery-Gomm, J. Brazill-Boast, D. Crouse, R. Epanchin-Niell, S. Hall, L. Maguire, T. Male, D. Morgan, J. Newman, H. Possingham, L. Rumpff, K. Weiss, R. Wilson, M. Zablan. (2018). Endangered species recovery: A resource allocation problem. *Science* 362(6412): 284-286.

Chen, C., R. Epanchin-Niell, and R.G. Haight. (2018) “Optimal Inspection of Imports to Prevent Invasive Pest Introduction.” *Risk Analysis*. 38(3): 603-619.

Epanchin-Niell, R. (2017) “Economics of invasive species policy and management.” *Biological Invasions*. 19: 3333–3354.

Epanchin-Niell, R., Kuwayama, Y., Walls, M. (2017) “Spatial-Dynamic Complexities of the Climate Challenge for Rural Areas: Integrating Resource and Regional Economic Insights.” *American Journal of Agricultural Economics*. 99 (2): 447-463

Epanchin-Niell, R., C. Kousky, M. Walls, A. Thompson. (2017) “Threatened Protection: Sea Level Rise and Coastal Protected Lands of the Eastern United States.” *Ocean & Coastal Management*. 137:118-130.

Blackburn, L. R. Epanchin-Niell, A. Thompson, A. Liebhold, (2017) Predicting costs of alien species surveillance across varying transportation networks. *Journal of Applied Ecology*. 54(1):225-233.

Springborn, M., A.R. Lindsay, R.S. Epanchin-Niell. (2016) “Harnessing enforcement leverage at the border to minimize biological risk from international live species trade.” *Journal of Economic Behavior & Organization*. 132(B):98-112.

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- Liebhold, A.M., L. Berc, E.G. Brockerhoff, R.S. Epanchin-Niell, A. Hastings, D.A. Herms, J.M. Kean, D.G. McCullough, D.M. Suckling, P.C. Tobin, T. Yamanaka. (2016) "Eradication of invading insect populations: from concepts to applications." *Annual Review of Entomology*. 61: 335–352.
- Evans, D., J. Che-Castaldo, D. Crouse, F. Davis, T. Eason, R. Epanchin-Niell, C. Flather, K. Frohlich, D. Goble, Y. Li, T. Male, L. Master, M. Neel, B. Noon, C. Parmesan, M. Schwartz, J. Scott, B. Williams. (2016) "Recovery of endangered and threatened species in the United States." *Issues in Ecology*, Report Number 20. Ecological Society of America. 27 p.
- Wilson, R.S., D.J. Hardisty, R.S. Epanchin-Niell, M.C. Runge, K.L. Cottingham, D.L. Urban, L. A. Maguire, A. M. Hasting, P. J. Mumby, D.P.C. Peters. (2016) "A typology of time-scale mismatches and behavioral interventions to diagnose and solve conservation problems." *Conservation Biology*. 30(1):42-49.
- Epanchin-Niell, R.S. and A. Liebhold. (2015) "Benefits of invasion prevention: effect of time lags, spread rates, and damage persistence." *Ecological Economics*. 116:146-143
- Eschen, R., Britton, K., Brockerhoff, E., Burgess, T., Dalley, V., Epanchin-Niell, R.S., Gupta, K., Hardy, G., Huang, Y., Kenis, M., Kimani, E., Li, H.-M., Olsen, S., Ormrod, R., Otieno, W., Sadof, C., Tadeu, E. and Theyse, M. (2015) "International variation in phytosanitary legislation and regulations governing importation of plants for planting." *Environmental Science and Policy* 51: 228-237.
- Boyd, J., R. Epanchin-Niell, J. Siikamäki. (2015) "Conservation planning: A review of return on investment analysis." *Review of Environmental Economics and Policy*. 9(1): 23-42.
- Epanchin-Niell, R. and J. Wilen. (2015) "Independent and Cooperative Management of Invasive Species in Human-Mediated Landscapes." *American Journal of Agricultural Economics*. 97(1): 180-198.
- Berc, L., J. Kean, Epanchin-Niell, R.S., A. Liebhold, and R. Haight. (2015) "Designing efficient surveys: spatial arrangement of sample points for detection of invading species." *Biological Invasions*. 17:445–459.
- Epanchin-Niell, R., E. Brockerhoff, J. Kean, and J. Turner. (2014) "Designing cost-efficient surveillance for early-detection and control of multiple invading species." *Ecological Applications*. 24:1258-1274.
- Epanchin-Niell, R.S., R. Haight, L. Berc, J. Kean, and A. Liebhold. (2012) "Optimal surveillance and eradication of invasive species in heterogeneous landscapes." *Ecology Letters* 15: 803-812.
- Blackwood, J., L. Berc, T. Yamanaka, R. Epanchin-Niell, A. Hastings, and A. Liebhold. (2012). "Bioeconomic synergism between tactics for insect eradication in the presence of Allee effects." *Proceedings of the Royal Society B*. 279(1739): 2807-2815.
- Epanchin-Niell, R. S., and J. E. Wilen. (2012). "Optimal spatial control of biological invasions." *Journal of Environmental Economics and Management* 63(2): 260-270.
- Epanchin-Niell, R., M. Hufford, C. Aslan, J. Sexton, J. Port, T. Waring. (2010). "Controlling invasive species in complex social landscapes." *Frontiers in Ecology and the Environment*. 8(4):210-216.
- Epanchin-Niell, R. S., and A. Hastings. (2010). "Controlling established invaders: integrating economics and spread dynamics to determine optimal management." *Ecology Letters*. 13(4):528-541.
- Epanchin-Niell, R. S., J. Englin, D. Nalle. (2009). "Investing in rangeland restoration in the arid west, USA: countering the effects of an invasive weed on the long-term fire cycle." *Journal of Environmental Management*. 91(2):370-379.
- Aslan, C., R. Epanchin-Niell, M. Hufford, J. Port, J. Sexton, T. Waring. (2009). "Practical challenges in private stewardship of rangeland ecosystems: yellow starthistle control in Sierra Nevada foothills." *Rangeland Ecology and Management*. 62:28-37.

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Niell, R. S., P. F. Brussard, D. D. Murphy. (2007). "Butterfly community change in response to rural residential development." *Landscape and Urban Planning*. 81(3):235-245.

Englin, J., T. Holmes, R. Niell. (2006). "Alternative models of recreational off-highway vehicle site demand." *Environmental and Resource Economics*. 35(4):327-338.

BOOKS AND BOOK CHAPTERS:

Blackman, A., R. Epanchin-Niell, J. Siikamaki, and D. Velez-Lopez. 2014. "Biodiversity Conservation in Latin America and the Caribbean: Prioritizing Policies." Environment for Development Series. RFF Press.

Eiswerth, M., R. Epanchin-Niell, K. Rollins, and M. Taylor. 2016. "Economic Modeling and the Management of Exotic Annual Bromus Species: Accounting for Ecosystem Dynamics, Ecological Thresholds, and Spatial Interdependencies." In Germino, M.J., Chambers, J.C., Brown, C.S., eds., *Exotic Brome-Grasses in Arid and Semiarid Ecosystems of the Western US: Causes, Consequences, and Management Implications*, Springer International Publishing, p. 429-456.

DISCUSSION PAPERS, REPORTS, AND OTHER PUBLICATIONS:

Epanchin-Niell, R. and A. Liebhold. 2018. Informing cost-effective strategies for reducing pest risk from live plant imports. Pp. 43-47. Appearing in: *Proceedings International Symposium for Risk Based Sampling*, Baltimore, Maryland, June 26-30, 2017. North American Plant Protection Organization. https://www.nappo.org/files/8215/3486/9818/RBS_Symposium_Proceedings_-_08212018-e.pdf

Springborn, M., A. Lindsay, and R. Epanchin-Niell. 2018. Risk-based Inspection: Setting policy parameters to harness enforcement leverage. Pp. 48-53. Appearing in: *Proceedings International Symposium for Risk Based Sampling*, Baltimore, Maryland, June 26-30, 2017. North American Plant Protection Organization. https://www.nappo.org/files/8215/3486/9818/RBS_Symposium_Proceedings_-_08212018-e.pdf

Epanchin-Niell, R.S., Boyd, J.W., Macauley, M.K., Scarlett, Lynn, Shapiro, C.D., and Williams, B.K., 2018, "Integrating adaptive management and ecosystem services concepts to improve natural resource management— Challenges and opportunities" U.S. Geological Survey Circular 1439, 62 p., <https://doi.org/10.3133/cir1439>.

Redford, Kent H., K. Campbell, A. Dayer, C. Dickman, R. Epanchin-Niell, T. Grosholz, D. Hallac, L. Richardson, M. Schwartz. 2017. *Invasive animals in U. S. national parks: By a science panel*. Natural Resource Report NPS/NRSS/BRD/NRR—2017/1564. National Park Service, Fort Collins, Colorado. <https://irma.nps.gov/DataStore/DownloadFile/594922>

Epanchin-Niell, R., K. Gedan, J. Miller, K. Tully. 2018. "Saltwater Intrusion and Coastal Climate Adaptation: Building Community Resilience" *Resources. Resources for the Future*. Washington, D.C. Spring 2018. Issue No. 197.

Epanchin-Niell, R., C. Kousky, M. Walls, A. Thompson. 2017. "Investing in Coastal Protected Lands under Threat from Sea-Level Rise" *Resources. Resources for the Future*. Washington, D.C. Spring 2017. Issue No. 194.

Boyd, J. and R. Epanchin-Niell. 2017. "Voluntary Conservation: A Return on Investment Framework for the Private Sector" *Resources. Resources for the Future*. Washington, D.C. Spring 2017. Issue No. 194.

Boyd, J. and R. Epanchin-Niell. 2017. "Private Sector Conservation Investments under the Endangered Species Act: *A Guide to Return on Investment Analysis*." Discussion Paper 17-11. Resources for the Future. Washington, D.C. March 2017.

Lindsay, A.R., Springborn, M., R.S. Epanchin-Niell. 2016. "Reducing Non-native species introductions with risk-based inspection of international trade." *Agricultural and Resource Economics ARE UPDATE*. Giannini Foundation of Agricultural Economics, University of California Vol. 20, No. 01. Pp. 9-11. http://s.giannini.ucop.edu/uploads/giannini_public/86/49/8649828f-5458-4aac-9cb5-1d22c0f3a054/v20n1.pdf

Springborn, M., A.R. Lindsay, R.S. Epanchin-Niell. 2016. "Harnessing enforcement leverage at the border to minimize biological risk from international live species trade." RFF Discussion Paper 16-34. Resources for the Future. Washington, D.C. August 2016.

Springborn, M., A.R. Lindsay, R.S. Epanchin-Niell. 2016. "Protecting against Invasive Species: A Risk-Based Approach to Live Plant Inspection." *Resources*. Resources for the Future. Washington, D.C. Fall 2016. Issue No. 193.

Epanchin-Niell, R.S., K. Rollins, M. H. Taylor. 2016. "The Sage Grouse Listing Decision: How Changing Expectations Could Affect Private Conservation." *Resources*. Resources for the Future. Washington, D.C. Spring/Summer 2016. No. 192.

Epanchin-Niell, R.S. 2016. "Comments on Draft Methodology for Prioritizing Status Reviews and Accompanying 12-Month Findings on Petitions for Listing under the Endangered Species Act." RFF Report. Resources for the Future, Washington, D.C. February 2016.

Epanchin-Niell, R.S. and A. Liebhold. 2015. "Infographic: The Benefits of Preventing Invasive Species: Timing Matters." *Resources*. Sep 23, 2015. <http://www.rff.org/research/publications/benefits-invasion-prevention-are-constrained-lags-and-timing-invasion-impacts#sthash.LqfbQmUQ.dpuf>

Boyd, J.W. and R. Epanchin-Niell. 2015. "Best available science and imperiled species conservation: Challenges, opportunities, and partnerships US Fish and Wildlife Service Region 4 workshop summary: A business, government, and NGO dialogue." RFF Discussion Paper 15-38. Resources for the Future. Washington, D.C. August 2015.

Epanchin-Niell, R.S. and A. Liebhold. 2015. "Benefits of invasion prevention are constrained by lags and timing of invasion impacts." RFF Discussion Paper 15-18. Resources for the Future. Washington, D.C. May 2015

Siikamäki, J. V., P. Vail, R. Epanchin-Niell, F. Santiago-Avila. 2015. "Mapping the value of ecosystem services in Latin America and the Caribbean." *Resources* 188, pp. 28-32. http://www.rff.org/RFF/Documents/RFF-Resources-188_Feature-Siikamaki.etal.pdf

Epanchin-Niell, R. 2014. "Developing policies to combat invasive species." *Resources* 187, pp. 22-27. http://www.rff.org/RFF/Documents/RFF-Resources-187_web.pdf

Brockerhoff, E., R. Epanchin-Niell, J. Kean, and J. Turner. 2014. "Weighing up the costs of surveillance trapping and the likely benefits from avoiding future pest damage." *Surveillance* 41:21-23.

Scarlett, L., R. Epanchin-Niell, and M. McKinney. 2013. "The Endangered Species Act at 40: New Tools for Conservation." *Resources* 184, pp. 20-27.

Boyd, J., R. S. Epanchin-Niell, J. Siikamäki. 2012. "Conservation return on investment: A review of results, methods, and new directions." RFF Discussion Paper 12-01. Resources for the Future. Washington, D.C. January.

Blackman, A., R. Epanchin-Niell, J. Siikamaki, and D. Velez-Lopez. 2012 "Biodiversity conservation in Latin America and the Caribbean: Prioritizing Policies." Final report to the InterAmerican Development Bank.

Epanchin-Niell, R. S., and J. E. Wilen. 2011. "Optimal control of spatial-dynamic processes: the case of bioinvasions." RFF Discussion Paper 11-07. Resources for the Future. Washington, D.C. March.

Niell, R. S., C. E. Aslan, M. B. Hufford, J. D. Port, J. P. Sexton, T. M. Waring. 2007. "Yellow starthistle symposium: The need for regional approaches to invasion management in Sierra Nevada foothill rangelands." *Noxious Times* 8(3):4-5.

Niell, R., T. Harris, E. Fadali, A. Mann. 2005. "Analysis of socio-economic data and trends for comprehensive economic development strategy (CEDS) for Humboldt county: Changing business counts from 1998 to 2001: Part II." University Center for Economic Development, University of Nevada, Reno. Technical Report (UCED 2004/05-21).

Hunter, J. C., J. C. Sterling, W. P. Widdowson, E. C. Beedy, R. Niell. 2004. "How well do functional assessments quantify habitat functions?" Proceedings of the 2004 American Water Resources Association conference on Riparian ecosystems and buffers: multi-scale structure, function and management. Olympic Valley, CA, (June 28-30, 2004) (TPS-04-2) (ISBN 1-882132-65-3).

PAPERS IN REVIEW/WORKING PAPERS:

Bigsby, K. R, Epanchin-Niell, M. Colunga-Garcia, D. Christie, D. Borchert, L. Kennaway. "The evolving port environs and early detection strategies for invasive alien species"

Epanchin-Niell, R. and J. Boyd. "Private Sector Conservation under the Endangered Species Act: A Return on Investment Perspective."

Tully, K., Gedan, K., Epanchin-Niell, R., et al. "The invisible flood: the chemistry, ecology, and social implications of coastal saltwater intrusion"

BLOG POSTS & WEB RESOURCES:

International Union of Forest Research Organizations WebResource on Economics of Invasive Species Policy. <http://iufro-invasions.org/Economics.html>

Epanchin-Niell, R. BLM Sage-Grouse Land Use Plan Changes: A Recalibration or A Short-Sighted Economic Grab? December 19, 2018. <http://www.rff.org/blog/2018/blm-sage-grouse-land-use-plan-changes-recalibration-or-short-sighted-economic-grab>

Epanchin-Niell, R. Managing Invasive Species with the Help of Public Participation. Aug 31, 2017. <http://www.rff.org/blog/2017/managing-invasive-species-help-public-participation>

Epanchin-Niell, R., C. Kousky, A. Thompson, M. Walls. Coastal Protected Lands and Sea-Level Rise. Jan 19, 2017. <http://www.rff.org/blog/2017/coastal-protected-lands-and-sea-level-rise>

Epanchin-Niell, R. Pursuing Increased Transparency and Efficiency in Endangered Species Act Listing Decisions. Apr 1, 2016. <http://www.rff.org/blog/2016/pursuing-increased-transparency-and-efficiency-endangered-species-act-listing-decisions>

Epanchin-Niell, R., K. Rollins, M. H. Taylor. Greater Sage Grouse Conservation: Pre-listing Programs as a Repeated Game. Mar 7, 2016. <http://www.rff.org/blog/2016/greater-sage-grouse-conservation-pre-listing-programs-repeated-game>

Epanchin-Niell, R. Examining the Benefits of Invasive Species Prevention: The Role of Invader Temporal Characteristics. May 20, 2015. <http://common-resources.org/2015/examining-the-benefits-of-invasive-species-prevention-the-role-of-invader-temporal-characteristics/>

Epanchin-Niell, R. Designing Cost-Efficient Surveillance to Control Invasive Species. October 9, 2014. <http://common-resources.org/2014/designing-cost-efficient-surveillance-to-control-invasive-species/>

Epanchin-Niell, R. Managing Invasive Species: Examining Individual and Cooperative Approaches. September 12, 2014. <http://common-resources.org/2014/managing-invasive-species-examining-individual-and-cooperative-approaches/>

MEDIA COVERAGE:

Endangered Species Act:

- New York Times (quote): <https://www.nytimes.com/2018/07/22/climate/endangered-species-act-trump-administration.html> July 23, 2018
- NPR 1A show (panelist): <https://the1a.org/shows/2018-07-24/checking-on-the-endangered-species-act> July 24, 2018
- Miami Herald (quote): <https://www.miamiherald.com/opinion/op-ed/article215628245.html>
- [CNNMoney \(background\)](https://money.cnn.com/2018/08/11/news/economy/endangered-species-act-reform/index.html): <https://money.cnn.com/2018/08/11/news/economy/endangered-species-act-reform/index.html>

Coastal Saltwater Intrusion Research:

- Voice of America: Voice of America: <https://www.voanews.com/a/climate-change-maryland-farms/4633200.html>
- Voice of America: <https://www.voanews.com/a/4691152.html>

PROFESSIONAL SERVICE AND ACTIVITIES:

Advisory roles:

- Member, New York Invasive Species Research Institute's Advisory Board, 2017-present.
- Member, Science Working Group for the Great Basin Landscape Conservation Cooperative, 2017-present.
- Member, U.S. National Park Service Invasive Animal Species Independent Science Panel, 2017.
- Scientific Review Committee, National Socio-Environmental Synthesis Center, 2012-2015.
- Member of IUFRO (International Union of Forest Research Organizations) Task Force on Biological Invasions in Forests, 2015 – Present
- Member of the Council on Food, Agriculture, and Resource Economics (C-FARE) Blue Ribbon Panel of Experts for Natural Resources and Environmental Issues 2013-Present
- Member of the National Invasive Species Council's Invasive Species Advisory Committee Task Force, 2012-2013.
- Member of USDA APHIS advisory group on risk modeling for gypsy moth surveillance. 2012-2013.
- Advisory committee, NSF proposal: "MSB-FRA Modeling Invasion Dynamics Across Scales (MIDAS)," PIs: S. Fei, H. Zhang, Q. Guo, K. Potter, A. Liebhold. 2016-Present.

Working group/workshop co-organizer

Advancing Behavioral Modeling in Socio-Environmental Models to Inform Policy, (w/ R. Wilson, July 2018 – Present)

Imperiled Species Conservation: Challenges, Opportunities, and Partnerships at the Regional Level Southeast Region --- A Business, Government, and NGO Dialogue, (w/ J. Boyd, March 2-3, 2015)

Best Available Science and Imperiled Species Conservation: Challenges, Opportunities, and Partnerships --- A Business, Government, and NGO Dialogue, (w/ J. Boyd, July 9-10, 2014)

Globalization of the Live Plant Trade: Informing efficient strategies for reducing non-native pest invasion risk, National Socio-Environmental Synthesis Center (w/ A. Liebhold, 2013--2018)

Integrating adaptive management and ecosystem services concepts to improve on-the-ground natural resource management, USGS and Resources for the Future (June 14-15, 2012; April 25-26, 2013)

Invited working group/roundtable/workshop/panelist participant

Exploring the Future of the Endangered Species Act, Resources for the Future, September 25, 2018.
<http://www.rff.org/events/event/2018-09/exploring-future-endangered-species-act>

Developing decision tools to facilitate recovery planning under the Endangered Species Act, National Socio-Environmental Synthesis Center (2015-present).

Identifying Economic and Policy Frontiers at the Intersection of Resource, Regional and Rural Economics, Oregon State University, Portland, Oregon, October 14, 2015.

Economic Valuation of Conservation Based Ecosystem Services. Co-sponsored by USDA and the Council on Food, Agricultural and Resource Economics to provide guidance to NRCS and USDA on inventorying and valuing ecosystem services related to conservation efforts. Washington, DC. July 21, 2015

Timescales and the interplay between human response and management and ecological and ecosystem dynamics, National Socio-Environmental Synthesis Center (2013-present)

Species recovery under the US Endangered Species Act, Ecological Society of America (2013-2014)

Mathematical Biosciences Institute: Sustainable Management of Living Natural Resources, Columbus, OH (Nov 8-12, 2013)

Panelist, C-FARE Summer Intern Breakfast (2012, 2013, 2015, 2016, 2017).

The US Endangered Species Act at 40, University of Idaho (October 23-26, 2013).

Pathways into Policy for Tree Health, e-conference, LWEC Tree Health and Plant Biosecurity initiative (March 2013)

Applying population ecology to strategies for eradicating invasive forest insects, National Center for Ecological Analysis and Synthesis (2009-2011)

Reviewer contributions:

- Topic Leader for presentation submissions in the area of Natural Resource Economics for the Agricultural and Applied Economics Association Annual Meeting, 2014
- Presentation submission reviews: Agricultural and Applied Economics Association Annual Meetings, 2011, 2012; AERE Summer Conference 2016.

- Journal manuscript reviews: Journal of Environmental Economics and Management; Theoretical Ecology; Ecological Applications; Journal of Environmental Management; Applied Economic Perspectives & Policy; Journal of Operational Research Society; Bioscience; Biological Invasions; Ecology Letters; Resource and Energy Economics; Proceedings of the Royal Society B; Journal of Applied Ecology; American Journal of Agricultural Economics; Risk Analysis, Journal of the Association of Environmental and Resource Economists; Conservation Letters; Environmental & Resource Economics; Biological Invasions; Biological Conservation; Current Forestry Reports

Symposium co-organizer:

- Species Conservation under the Endangered Species Act: Science, Partnerships, and Effectiveness, RFF First Wednesday Seminar (December 4, 2013) (also moderated)
- Invasive Species: Impacts, Challenges, and Strategies for Management, RFF First Wednesday Seminar (March 7, 2012) (also moderated)
- 10th Annual Bay Area Conservation Biology Symposium (Apr 2008)
- Yellow Starthistle Symposium, U.C. Davis (Sep 2006)
- U.C. Davis Environmental & Resource Economics Seminar (2005-2006)

AWARDS AND FELLOWSHIPS:

NSF Integrative Graduate Education and Research Trainee, Biological Invasions, UC Davis, 2004 - 2007.

Outstanding Graduate Scholar Fellowship, University of California, Davis, 2004-2005.

Outstanding Graduate Student, Department of Applied Economics and Statistics, University of Nevada, Reno, 2003

RESEARCH GRANTS:

Epanchin-Niell, R. Role of US Public in Pest Detection USDA Animal and Plant Health Inspection Service. Oct. 2018- Sept. 2019.

Boyd, J. Epanchin-Niell, R. Kroetz, K. Kuwayama, Y. "Advancing Economic and Ecological Systems Models and Data: An Expanded partnership with RFF" National Socio-Environmental Synthesis Center, National Science Foundation. 6/14/18-8/31/20

Tully, K., K. Gedan, J. Miller, R. Epanchin-Niell. Building coastal resiliency: adapting cropping systems to saltwater intrusion. Harry Hughes Center. 3/1/18-2/28/20.

Tully, K., K. Gedan, J. Miller, R. Epanchin-Niell. Adapting Agroecosystems To Saltwater Intrusion And Mitigating Nutrient Losses From Coastal Farmlands. USDA NIFA AFRI. 3/1/18-2/28/22.

Brockerhoff, E. (P.I.) Optimising biosecurity investment and effort across all invasion phases. Biological Heritage New Zealand. 9/1/17-8/31/20.

Epanchin-Niell, R. "Reducing Pest and Pathogen Invasion from Live Plant Imports: Linking Social and Ecological context to Design Effective Policy." U.S. Forest Service. 6/8/17-4/1/20.

Aslan, C. (P.I.), Co-PIs: Epanchin-Niell, Brunson, Sikes, Veloz. "CNH-L: Scale-dependent Feedbacks among Protected Areas and Surrounding Socioecological Systems" National Science Foundation. August 2016 - August 2019

Epanchin-Niell, R., K. Rollins, M. Taylor. "Enhancing Policies for Western Rangeland Conservation: Complex systems modeling to inform conservation return on investment." RFF's New Frontiers Fund. October 15, 2015 – October 14, 2017.

Springborn, M. (P.I.), R. Epanchin-Niell. "Risk-Based Sampling of Imports: Policy Design for Minimizing Entry of Pests and Pathogens." U.S.D.A. Forest Service and Animal and Plant Health Inspection Service 2014-2016.

Boyd, J., R. Epanchin-Niell. "ESA Science & Stakeholder Group Workshop." Electric Power Research Institute and National Council for Air and Stream Improvement. 2014-2016.

Epanchin-Niell, R. "Bioeconomic Methods for Cost-Effective Surveillance across Heterogeneous Regions," U.S.D.A. Forest Service and Animal and Plant Health Inspection Service, 2/1/2014 – 9/14/2017.

Siikämäki, J., R. Epanchin-Niell, A. Blackman, R. Cooke. "Establishment of Priority Ecosystems for the Biodiversity and Ecosystem Services Initiative", Inter-American Development Bank, 8/1/2013 – 6/30/2015.

Epanchin-Niell, R., Liebhold, A. "The Live Plant Forest Pest Invasion Pathway: Economic Impacts and Benefits of US Live Plant Imports", U.S. Forest Service, 8/21/12 – 7/30/15.

Epanchin-Niell, R., A. Liebhold "Globalization of the Live Plant Trade: Informing Efficient Strategies for Reducing Non-Native Pest Invasion Risk" (working group) National Socio-Environmental Synthesis Center (SESYNC), 2013-present.

Blackman, A., J. Siikämäki, R. Epanchin-Niell. "Preparation of Biodiversity Platform: Regional Assessment, Emerging Opportunities and Proposed Lines of Action". InterAmerican Development Bank.

Krupnick, A., Epanchin-Niell, R., Siikamäki, J. "Ecosystem Services Provided by Gulf of Mexico Habitats: Tools, Valuation, and Application", Texas A&M/Harte Institute, 2/1/12-1/30/2014.

Boyd, J., Epanchin-Niell, R. "Science and Economic Valuation of Ecosystem Services in the Framework of Adaptive Management", U.S. Geological Survey, 9/15/11 – 9/14/14.

Epanchin-Niell, R. "Cost Benefit Analysis of Bark Beetle and Wood Borer Surveillance", New Zealand Forest Research Institute, Scion, 12/1/10 – 3/21/12.

Wilén, J. (PI) with R. Niell. "Micro-behavior and the Spatial-Dynamics of Invasions", USDA ERS Program of Research on the Economics of Invasive Species Management, 2007-2009.

Niell, R. "Micro-behavior and the Spatial-Dynamics of Invasions", Jastro-Shields Graduate Research Scholarship, University of California, Davis, 2007.

TEACHING:

Mentor: Integrative Graduate Education and Research Traineeship, N.S.F. (2008-2009)

Guest Lecturer

University of California, Davis, Conservation Biology Seminar Series (Undergraduate) (Feb 2008);

University of Nevada, Reno, Range and Forest Ecology (Undergraduate / Graduate) (May 2004);

University of Nevada, Reno, Mathematical Modeling in Ecology (Graduate) (Feb 2004)

Lecturer/ Sole Instructor (Jan–Jun 2004)

Department of Resource Economics, University of Nevada, Reno, "Economics of Public Lands Resources" (3 units, undergraduate)

PROFESSIONAL PRESENTATIONS (SINCE MID-2009) (INVITED)**

'Coastal land use change: rural social-ecological response to saltwater intrusion and sea level rise'
Southern Economics Association Annual Meeting, Washington DC, Nov 19, 2018.

'Early detection of invasive species,' The Wildlife Society Meeting, Cleveland OH, Oct. 11, 2018.**

- ‘Cost-effective targeting of live plant import exclusion for preventing forest pest establishment’ Society for Benefit-Cost Analysis Annual Meeting. Washington DC, March 16, 2018; Southern Economics Association Annual Meeting, Nov 18, 2018.
- ‘Informing cost-efficient strategies to reduce pest risk from live plant imports’ Invited Keynote at the North American Plant Protection Organization’s (NAPPO) International Symposium on Risk-Based Sampling, Baltimore, MD, June 28, 2017**
- ‘Informing cost-efficient strategies to reduce pest risk from live plant imports’ Presentation to the New York Invasive Species Advisory Council, May 15, 2017.**
- ‘Harnessing enforcement leverage at the border to minimize biological risk from international live species trade.’ Academic Seminar. Yale School of Forestry, New Haven, CT. April 5, 2017.**
- ‘Informing invasive species policy and management through economic analysis’ Academic Seminar. Animal Conservation Seminar Series, Dept. of Wildlife and Fisheries, Texas A&M University, College Station, TX. Jan. 27, 2017. **
- ‘Informing efficient strategies to reduce pest risk from live plant imports’ 28th USDA Interagency Research Forum on Invasive Species, Annapolis, MD, Jan. 10-13, 2017.**
- ‘Fine-scale spatial targeting of surveillance to minimize costs of invasive species introduction across large landscapes’ INFORMS, Nashville, TN, Nov 13-16, 2016. **
- ‘Optimal Design of a Nation-wide Surveillance System for Early Detection of an Invasive Bark Beetle’ INFORMS, Nashville, TN, Nov 13-16, 2016. **
- ‘Economics of Invasive Species Management’ IUFRO Workshop: “Biological Invasions in Forests”. 18-21 July, 2016, Shepherdstown, WV. **
- ‘Economics of invasive annual grass management on western U.S. rangelands.’ Ecological Society of America Annual Meeting, Ft. Lauderdale FL. August 7-12, 2016. **
- ‘Bioeconomic modeling for allocating surveillance resources’ The North American Forest Insect Work Conference. Washington DC. June 3, 2016.**
- ‘Calibrating invasive species risk maps to predict establishment probability (for informing management)’ The International Society for Ecological Modelling Global Conference, May 11, 2016.**
- ‘Preventing Biological Invasions through Strategic Inspection Design.’ Academic Seminar. Triangle Resource and Environmental Economics Seminar Series, Raleigh, NC. November 12, 2015.**
- ‘Import inspections: Harnessing enforcement leverage to prevent invasive species introductions’ 2015 INFORMS Annual Conference, Philadelphia, Nov 1-4, 2015.**
- ‘Optimal inspection of imports to prevent invasive pest introduction.’ 100th Ecological Society of America Annual Meeting, Baltimore, MD, Aug 11, 2015.
- ‘Ecosystems: They Move Too Fast, They Move Too Slow, Conservation Suffers.’ ICCB : 27th International Congress for Conservation Biology, Montpellier – France, August 2-6 2015.
- ‘Designing Cost-Effective Inspection Programs and Phytosanitary Policy for Reducing Pest Risk from Live Plant Imports.’ IUFRO (International Union of Forest Research Organizations) World Congress, Salt Lake City, UT, Oct. 11, 2014.**
- ‘Enhancing Conservation Incentives for Private Landowners.’ Ecological Society of America Annual Meeting, Sacramento, CA, Aug 12, 2014.**
- ‘Temporal patterns of invasion damages and implications for mitigation.’ 25th USDA Interagency Research Forum on Invasive Species, Annapolis, MD, Jan 8, 2014.**
- ‘The role of cooperation and private landowner incentives in species recovery.’ Recovery under the U.S. Endangered Species Act, Issues in Ecology Workshop, Aug 30, 2013.**
- ‘Cooperation, partnerships, and landowner incentives.’ Roundtable on ‘The U.S. Endangered Species Act at 60’ in Coeur d’Alene Idaho, Oct 25, 2013.**

- ‘Integrating Ecology and Economics to Manage Bioinvasions: where, when, who, and how much?’ MBI Workshop: Sustainable Management of Living Natural Resources, Columbus, OH, Nov 10, 2013.**
- ‘Optimal Spatial Control of Biological Invasions.’ INFORMS Annual Meeting, Minneapolis, MN, Oct 8, 2013.**
- ‘Designing cost-efficient surveillance strategies for early detection of invasive species.’ Society for Benefit Cost Analysis, Washington, DC, Feb 2013; Association of Environmental and Resource Economics Summer Meeting, Banff, Canada, Jun, 8, 2013; American Applied Economics Association Annual Meeting, Washington, DC, Aug 6, 2013.
- ‘Integrating adaptive management and ecosystem services frameworks to improve natural resource management: an exploration of benefits and approach.’ ACES and Ecosystem Markets, Ft. Lauderdale, FL, Dec 2012**; International Congress for Conservation Biology, Baltimore, MD, Jul 25, 2013.
- ‘Designing surveillance for unknown invaders: searching when you don’t know what you are searching for.’ The Society for Conservation Biology, Oakland, CA, July 18, 2012.
- ‘Optimizing insect eradications through bioeconomic approaches (Optimal detection and eradication of insect pests),’ Annual Meeting of the Entomological Society, San Diego, CA Dec 2010**; USDA Interagency Research Forum on Invasive Species, Annapolis, MD, Jan 2011**; International Congress for Conservation Biology, Auckland New Zealand, Dec 2011; Southern Economics Association, Washington DC, Jan 2012; Invasive Species: Impacts, Challenges, and Strategies for Management, RFF First Wednesday Seminar, March 7, 2012.
- ‘Cooperation, spatial-dynamic externalities, and management of invasive species,’ Agricultural and Applied Economics Meetings, Denver, CO, Jul 2010; Belpasso International Summer School in Environmental and Resource Economics, Belpasso, Italy, Sep 2010.
- ‘Optimal control of spatial-dynamic processes: the case of biological invasions,’ Agricultural and Applied Economics Meetings, Denver, CO, Jul 2010; World Congress of Environmental and Resource Economists, Montreal, Canada, Jul 2010; Department of Resource Economics, University of Nevada, Reno, Feb 2010**; Policy and Economics Research Roundtable, Stanford University, Jan 2010**; Resources for the Future, Washington D.C., Jan 2010**; Occasional California Workshop on Environmental and Resource Economics, Santa Barbara CA, Oct 2009.
- ‘Invasive species as spatial-dynamic processes: characteristics of optimal policies,’ Economic Research Service, Program of Research on the Economics of Invasive Species Management (PREISM) Annual Meeting, Washington D.C., Oct 2009.