

James Boyd Friday
College of Tropical Agriculture and Human Resources
Dept. of Natural Resources and Environmental Management
 FTE Distribution: 0% I; 15% R; 85% E

Education

<u>Degree</u>	<u>University</u>	<u>Major</u>
B.A.	Dartmouth College	Biology
Master of Forestry	Yale School of Forestry & Environmental Studies	Timber Management, Tropical Forestry
Ph.D.	University of Hawai‘i at Mānoa	Agronomy and Soil Science

Lifetime and Fellow Achievement Awards (peer nominated and endorsed national and International- important for those without accreditation that is peer nominated and endorsed, recognized)

Presidential Field Forester, California-Hawaii region, 2019, Society of American Foresters

Professional Appointments

<u>Title</u>	<u>Employer</u>	<u>Dates Employed</u>
Extension Specialist in Forestry	University of Hawai‘i	1998 to present
Research Assistant	University of Hawai‘i	1990 to 1997
Agroforestry Trainer	US Peace Corps	1989
Agroforestry Volunteer	US Peace Corps	1985 - 1988

Courses Taught

Course Number and Title (credits)

NREM 480 Tropical Forestry and Agroforestry (4)

Publications (reverse chronological order)

Book Chapters

Cannon, P., J. B. Friday, T. Harrington, L. Keith, M. Hughes, R. Hauff, F. Hughes, R. Perroy, K. Roy, R. Peck, S. Smith, S. Cordell, B. Luiz, J. Juzwik, C. Giardina, D. Benitez, Z. Cook, and S. Yelenik. 2022. Rapid ‘Ōhi‘a Death in Hawai‘i. Chapter 15 in: Forest Microbiology Vol. 2: Forest Tree Health. Elsevier, Amsterdam.
https://www.fs.usda.gov/rm/pubs_journals/2022/rmrs_2022_cannon_p001.pdf

Friday, J. B., 2020. Managing tree-crop competition. In: Elevitch, C. E., ed. Agroforestry Design for Regenerative Production with Emphasis on Pacific Islands. Permanent Agriculture Resources, Holualoa, HI.
<https://cdn.sare.org/wp-content/uploads/20200330203619/Managing-Tree-Crop-Competition-Friday.pdf>

Friday, J. B., 2018. *Metrosideros polymorpha*. Pp. 166-169 in: Thomson, L, J. Doran, and B. Clarke, eds. Trees for Life in Oceania: Conservation and Utilisation of Genetic Diversity. ACIAR Monograph No. 201. Australian Center for International Agricultural Research, Canberra.

Friday, J. B., 2018. *Acacia koa*. Pp. 39-41 in: Thomson, L, J. Doran, and B. Clarke, eds. Trees for Life in Oceania: Conservation and Utilisation of Genetic Diversity. ACIAR Monograph No. 201. Australian Center for International Agricultural Research, Canberra.

McArthur, H. J., J. B. Friday, and M. J. Jones. 2017. Changing patterns of shifting cultivation in Timor-Leste. Ch. 27 Pp. 502 – 516 in: Cairns, M., ed. Shifting Cultivation Policies: Balancing Environmental and Social Sustainability. CABI, London.

Elevitch, C. R., G. Behling, M. Constantinides, and J. B. Friday. 2014. Grower's Guide to Pacific Island Agroforestry Systems, Information Resources, and Public Assistance Programs. In: Elevitch, C.R. (ed.). Food-Producing Agroforestry Landscapes of the Pacific. Permanent Agriculture Resources (PAR), Hōlualoa, Hawai'i. <http://www.agroforestry.net>

Friday, J. B., and H. J. McArthur. 2010. A participatory approach to community resource management: Building upon local knowledge and concerns. Pp. 219-232 in: Sustainability Science for Watershed Landscapes, Roumasset, J., K. Burnett, and A. Balisacan, eds. SEARCA, University of the Philippines, Los Baños, Laguna, Philippines.

Friday, J. B., and R. Ogoshi. 2010. Farm and forestry production and marketing profile for tamanu (*Calophyllum inophyllum*). In: Elevitch, C. R. (ed). Specialty Crops for Pacific Island Agroforestry. Permanent Agriculture Resources, Hōlualoa, Hawai'i. http://agroforestry.net/scps/Tamanu_specialty_crop.pdf

Friday, J. B. 2010. Farm and forestry production and marketing profile for koa (*Acacia koa*). In: Elevitch, C. R. (ed). Specialty Crops for Pacific Island Agroforestry. Permanent Agriculture Resources, Hōlualoa, Hawai'i. http://agroforestry.net/scps/Koa_specialty_crop.pdf

Friday, J. B. and J. L. Brewbaker. 2008. Forestry and agroforestry work at CTAHR. Pp. 94-95 in: Hawai'i's College of Tropical Agriculture and Human Resources: Celebrating the First 100 Years. College of Tropical Agriculture and Human Resources, University of Hawai'i, Honolulu, HI.

Elevitch, C. R., K. Wilkinson, and J. B. Friday. 2006. *Acacia koa* (koa) and *Acacia koaia* (koai'a). Pp. 1-28 in: Elevitch, C. R., ed. Traditional Trees of Pacific Islands. Permanent Agriculture Resources, Hōlualoa, HI. URL: <http://www.traditionaltree.org>

Friday, J. B., and D. Okano. 2006. *Cordia subcordata* (kou). Pp. 303-316 in: Elevitch, C. R., ed. Traditional Trees of Pacific Islands. Permanent Agriculture Resources, Hōlualoa, HI. URL: <http://www.traditionaltree.org>

Friday, J. B., and D. Okano. 2006. *Thespesia populnea* (Portia tree). Pp. 757-774 in: Elevitch, C. R., ed. Traditional Trees of Pacific Islands. Permanent Agriculture Resources, Hōlualoa, HI. URL: <http://www.traditionaltree.org>

Friday, J. B., and D. Herbert. 2006. *Metrosideros polymorpha* ('ōhi'a). Pp. 465-490 in: Elevitch, C. R., ed. Traditional Trees of Pacific Islands. Permanent Agriculture Resources, Hōlualoa, HI. URL: <http://www.traditionaltree.org>

Friday, J. B., and D. Okano. 2006. *Calophyllum inophyllum* (kamani). Pp. 183-198 in: Elevitch, C. R., ed. Traditional Trees of Pacific Islands. Permanent Agriculture Resources, Hōlualoa, HI. URL: <http://www.traditionaltree.org>

Conference Proceedings

Ohara, R. D. and J. B. Friday, eds. 2017. *Acacia koa* in Hawai'i: Facing the Future. Proceedings of the Symposium held October 5, 2016. Tropical Hardwood Tree Improvement and Regeneration Center, Hilo, HI. https://www.ctahr.hawaii.edu/forestry/trees/koa_2016.html

Friday, J. B., E. Lowell, K. Wilson, J. Wiedenbeck, C. Chan, and N. Evans. 2017. Value of young growth koa and consumer preference for koa color and figure. Pp. 21-24 in: Rebekah Dickens Ohara and J. B. Friday, eds, *Acacia koa* in Hawai'i: Facing the Future. Proceedings of the symposium held October 5, 2016. Tropical Hardwood Tree Improvement and Regeneration Center, Hilo, HI. https://www.ctahr.hawaii.edu/forestry/trees/koa_2016.html

Idol, T. P. Scowcroft, J. B. Friday. 2017. Stand management of koa: Thinning and fertilization.

In: Rebekah Dickens Ohara and J. B. Friday, eds, *Acacia koa: Facing the Future*. Proceedings of the symposium held October 5, 2017. Tropical Hardwood Tree Improvement and Regeneration Center, Hilo, HI.

Earnshaw, K., J. B. Friday, and D. Jacobs. Adaptive significance of changes from true leave to phyllodes in koa. Pp. 50-53 in: Rebekah Dickens Ohara and J. B. Friday, eds, *Acacia koa: Facing the Future*. Proceedings of the symposium held October 5, 2017. Tropical Hardwood Tree Improvement and Regeneration Center, Hilo, HI.

Selmants, Pl, Sleeter, B., and J. B. Friday. 2017. State and transition simulation model (ST_SIM) current / potential landscape distribution of koa and associated carbon dynamics. Pp. 54-55 in: Rebekah Dickens Ohara and J. B. Friday, eds, *Acacia koa: Facing the Future*. Proceedings of the symposium held October 5, 2017. Tropical Hardwood Tree Improvement and Regeneration Center, Hilo, HI.

Lowell, E. C., K. Wilson, J. B. Friday, J. Wiedenbeck, and C. Chan. 2015. Market appeal of Hawaiian koa wood product characteristics: A consumer preference study. Pp. 743-751 in: Barnes, H. M. and V. L Herian, eds. Proceedings of the 59th International Convention of Society of Wood Science and Technology. Proceedings of the 2015 International Convention, Grand Teton National Park, Wyoming, USA.
http://www.swst.org/meetings/AM15/pdfs/proceedings_2015.pdf

Friday, J. B. 2003. Restoring native forests in Hawai'i. Proceedings of the 6th IUFRO Extension Working Party Symposium, Portland, OR.

Cowern, W. and J. B. Friday. 2002. Selecting sites for commercial forestry operations. In: Friday, J. B., ed. *Growing Working Forests for Hawai'i's Future*, Proceedings of the Hawai'i Forestry Industry Ass'n. symposium, Kapa'a, HI, June 6th to 8th, 2001. College of Tropical Agriculture and Human Resources, University of Hawai'i, Honolulu, HI.

Friday, J. B. 2002. Stand management: thinning and pruning trees for best production. In: Friday, J. B., ed. *Growing Working Forests for Hawai'i's Future*, Proceedings of the Hawai'i Forestry Industry Ass'n. symposium, Kapa'a, HI, June 6th to 8th, 2001. College of Tropical Agriculture and Human Resources, University of Hawai'i, Honolulu, HI.

Stevens, B., and J. B. Friday. 2002. Protecting tree farms from fire. In: Friday, J. B., ed. *Growing Working Forests for Hawai'i's Future*, Proceedings of the Hawai'i Forestry Industry Ass'n. symposium, Kapa'a, HI, June 6th to 8th, 2001. College of Tropical Agriculture and Human Resources, University of Hawai'i, Honolulu, HI.

Refereed Journal Publications

Trauernicht, P. C., A. G. Frazier, I. Bubb, C. Camacho-Fejeran, J. Dendy, J. B. Friday, R. King, J. Manglona, F. Ruegorong, A. Singeo, C. P. Giardina, S. Cordell. 2023. Pacific island pyrogeography: how people, climate, and land cover influence fire regimes across Micronesia. *Journal of Biogeography* <https://doi.org/10.1111/jbi.14763>

Luiz, B. C., C. Giardina, L. Keith, D. Jacobs, R. Snieszko, M. Hughes, J. B. Friday, P. Cannon, R. Hauff, K. Francisco, M. Chau, N. Dudley, A. Yeh, G. Asner, R. Martin, R. Perroy, B. Tucker, A. Evangelista, V. Fernandez, C. Martins-Keli'ihō'omalū, K. Santos, R. Ohara. 2022. A framework for establishing a rapid 'Ōhi'a death resistance program. *New Forests*. <https://doi.org/10.1007/s11056-021-09896-5>

Sugiyama, A., J. B. Friday, C. P. Giardina, and D. F. Jacobs. 2021. Intraspecific variation along an elevation gradient alters seed scarification responses in the polymorphic tree species *Acacia koa*. *Frontiers in Plant Science* 12:716678. <https://doi.org/10.3389/fpls.2021.716678>

Friday, J. B., D. Haase, R. Estoy, J. Manglona, and R. Talken. 2021. Reforestation of degraded landscapes in

Micronesia. *Land* 10(9), 926; <https://doi.org/10.3390/land10090926>.

Haase, D. L., K. Bouzza, L. Emerton, J. B. Friday, D. Lieberg, A. Aldrete, and A. S. Davis. 2021. The high cost of the low-cost polybag system: A review of nursery seedling production systems. *Land* 10: 826. <https://doi.org/10.3390/land10080826>.

Rose, K. M. E., J. B. Friday, J. A. Oliet, and D. F. Jacobs. 2020. Canopy openness affects microclimate and performance of underplanted trees in restoration of high-elevation tropical pastureland. *Forest Ecology and Management* 292-293: <https://doi.org/10.1016/j.agrformet.2020.108105>.

Heller, W., M. Hughes, B. Luiz, E. Brill, J. B. Friday, A. Williams, and L. Keith. 2019. First report of *Ceratocystis huliohia* causing mortality of *Metrosideros polymorpha* trees on the island of Kaua'i, Hawai'i, USA. *Forest Pathology* 49:e12546. <https://doi.org/10.1111/efp.12546>

Rose, K. M. E., J. B. Friday, and D. Jacobs. 2019. Establishment and heteroblasty of *Acacia koa* in canopy gaps. *Forest Ecology and Management* 453. <https://doi.org/10.1016/j.foreco.2019.117592>

Fortini, L., L. Kaiser, J. B. Friday, L. Keith., R. F. Hughes, and J. Jacobi. 2019. The evolving threat of Rapid 'Ōhi'a Death (ROD) to Hawai'i's native ecosystems and rare plant species. *Forest Ecology and Management* 448: 376-385. DOI: <https://doi.org/10.1016/j.foreco.2019.06.025>

Hughes, M. A., W. P. Heller, J. B. Friday, W. Weaver, and L. M. Keith. 2018. First report of *Neofusicoccum parvum* causing stem necrosis of 'Ōhi'a trees (*Metrosideros polymorpha*) on O'ahu, Hawai'i, USA. *Plant Disease* 102(12): 2660. DOI: <https://doi.org/10.1094/PDIS-06-18-1002-PDN>

Lowell, E. I., K. Wilson, J. Wiedenbeck, C. Chan, J. B. Friday, and N. Evans. 2017. Consumer preference study of characteristics of Hawaiian koa wood bowls. *BioProducts Business Journal* 2(5): 42-51. <https://www.fs.usda.gov/treearch/pubs/54767>

Idol, T. W., R. Martinez Morales, J. B. Friday, and P. G. Scowcroft. 2017. Precommercial release thinning of potential *Acacia koa* crop trees increases stem and crown growth in dense, 8-year-old stands in Hawaii. *Forest Ecology and Management* 392: 105-114. <http://dx.doi.org/10.1016/j.foreco.2017.02.029>

Mortensen, L., R. F. Hughes, J. B. Friday, L. M. Keith, J. M. Barbosa, N. J. Friday, Z. Liu, and T. Sowards. 2016. Assessing spatial distribution, stand impacts and rate of *Ceratocystis fimbriata* induced 'ōhi'a (*Metrosideros polymorpha*) mortality in a tropical wet forest, Hawai'i, USA. *Forest Ecology and Management* 377: 83-92. DOI 10.1016/j.foreco.2016.06.026

Friday, J. B., S. Cordell, C. P. Giardina, F. Inman-Narahari, N. Koch, J. Leary, C. M. Litton, P. C. Trauernicht. 2015. Future directions for forest restoration in Hawai'i. *New Forests* 46:733-746. DOI 10.1007/s11056-015-9507-3

Keith, L. M., R. F. Hughes, L. S. Sugiyama, W. P. Heller, B. C. Bushe, and J. B. Friday. 2015. First Report of *Ceratocystis* wilt on 'Ōhi'a. *Plant Disease* 99(9):1276. <http://dx.doi.org/10.1094/PDIS-12-14-1293-PDN>

Friday, J. B. 2013. Long-term field research for forest and ecosystem restoration in Hawai'i. In: Camp, A. E., L. C. Irland, and C. J. W. Carroll, eds. *Long Term Silvicultural and Ecological Studies: Results for Science and Management: Vol. 2. GISF Research Paper 013*. Yale School of Forestry and Environmental Studies, New Haven, CT.

Martinez Morales, R., T. W. Idol, and J. B. Friday. 2011. Assessment of *Acacia koa* forest health across an elevation gradient in Hawai'i using fine resolution remote sensing and GIS. *Sensors* 11(6): 5677-5694. doi: 10.3390/s110605677

Kull, C. A., C. M. Shackleton, P. S. Cunningham, C. Ducatillon, J. D. Dufour Dror, K. Esler,

J. B. Friday, A. C. Gouveia, A. R. Griffin, E. M. Marchante, S. J. Midgley, A. Pauchard, H. Rangan, D. M. Richardson, T. Rinaudo, J. Tassin, L. S. Urgenson, G. P. von Maltitz, R. D. Zenni, and M. J. Zylstra. 2011. Adoption, use and perception of Australian acacias around the world. *Diversity and Distributions* 17(5): 822-836. DOI: 10.1111/j.1472-4642.2011.00783.x

Scowcroft, P. G., J. B. Friday, J. Haraguchi, T. W. Idol, and N. S. Dudley. 2010. Poor stem form as a potential limitation to private investment in koa plantation forestry in Hawai'i. *Small-Scale Forestry* 9: 243-262. doi: 10.1007/s11842-009-9107-1

Walker, T. S., J. B. Friday, M. C. Casimero, R. T. Dolentas, A. B. Mataia, R. Acda, and R. S. Yost. 2009. The economic impact of a nutrient management decision support system (NuMaSS) on small farm households cultivating maize on acidic, upland soils in the Philippines. *Agricultural Systems* 101: 162-172. doi: 10.1016/j.agsy.2009.05.004

Meason, D. F., T. W. Idol, J. B. Friday, and P. G. Scowcroft. 2009. Effects of fertilization on phosphorus pools in the volcanic soil of a managed tropical forest. *Forest Ecology and Management* 258(10): 2199-2206. doi: 10.1016/j.foreco.2009.04.001

Friday, J. B., P. G. Scowcroft, and A. Ares. 2008. Spread of invasive species after logging in a native Hawaiian forest. *Applied Vegetation Science* 11: 471-482. doi: 10.3170/2008-7-18538.

Scowcroft, P. G., J. B. Friday, T. Idol, N. Dudley, J. Haraguchi, and D. Meason. 2007. Growth response of *Acacia koa* trees to thinning, grass control, and phosphorus fertilization in a secondary stand in Hawai'i. *Forest Ecology and Management* 239(1): 69-80.

Friday, J. B., H. J. McArthur, and L. A. Watson. 2006. Using participatory rural appraisal and participatory research and extension in a post-independence environment: A case from East Timor. *International Journal of Agricultural Sustainability* 4(2): 108-118.

Goldstein, J. H., G. C. Daily, J. B. Friday, P. A. Matson, R. L. Naylor, and P. Vitousek. 2006. Business strategies for conservation on private lands: Koa forestry as a case study. *Proceedings of the National Academy of Sciences* 103(26): 10140-10145. DOI: 10.1073/pnas.0600391103

Friday, J. B., and J. H. Fownes. 2002. Competition for light between hedgerows and maize in an alley cropping system. *Agroforestry Systems* 55 (2): 125-137. DOI: 10.1023/A:1020598110484

Friday, J. B., and J. H. Fownes. 2001. A simulation model for hedgerow light interception and growth. *Agricultural and Forest Meteorology* 108: 29-43.

Friday, J. B. and K. S. Friday. 1990. Production of foliar biomass in hedgerows in the Philippines. *Leucaena Research Reports* 11: 115-117.

Extension Publications

Young-Uhk, S., M. Krishnapillai, and J. B. Friday. 2018. Using a chipper / shredder to create cocopith potting mix from coconut husk. Yap Cooperative Research and Extension, College of Micronesia – FSM. <http://www.micronesialandgrant.org/wp-content/uploads/2018/10/COM-FSM-Yap-Cocopith-Fact-Sheet-Sept-19-2018.pdf>

Friday, J. B., L. Keith, and F. Hughes. 2015. Rapid 'Ōhi'a Death (Ceratocystis Wilt of 'Ōhi'a). PD-107, College of Tropical Agriculture and Human Resources, University of Hawai'i, Honolulu, HI. URL: <http://www.ctahr.hawaii.edu/oc/freepubs/pdf/PD-107.pdf>

Straight, R., J. Banegas, M. Constantinides, C. Elevitch, M. Falanruw, M. Figueroa, J. B. Friday, K. Friday, N. Hammond, E. Mas, K. MacFarland, G. Susumu, T. Ward. 2015. Working Trees for Islands. USDA National Agroforestry Center, Lincoln, NE.

https://nac.unl.edu/documents/workingtrees/brochures/Working_Trees_Islands.pdf

Leary, J., S. Kaye, J. B. Friday, and F. Hughes. 2014. Proper technique for injecting albizia (*Falcataria moluccana* L.) with Milestone® (active ingredient aminopyralid). College of Tropical Agriculture and Human Resources, University of Hawai‘i, Honolulu, HI. <http://www.ctahr.hawaii.edu/oc/freepubs/pdf/Albizia%20tri-fold.pdf>

Stevens, B., J. B. Friday, D. Cram, C. Trauernicht. 2014. Protecting tree plantations from fire. RM-18, College of Tropical Agriculture and Human Resources, University of Hawai‘i, Honolulu, HI. URL: <http://www.ctahr.hawaii.edu/oc/freepubs/pdf/RM-18.pdf>

Elevitch, C.R., T. Idol, J. B. Friday, C. Lepczyk, V. Easton Smith, and S.C. Nelson. 2009. Shade-Grown Coffee in Hawai‘i: Results of a twelve farm study in Kona. Permanent Agriculture Resources, Hōlualoa, Hawai‘i. <http://agroforestry.net/caf>

Nelson, S. and J. B. Friday. 2009. Hawaiian mistletoes (*Korthalsella* species). Plant Disease 62, College of Tropical Agriculture and Human Resources, University of Hawai‘i, Honolulu, HI. URL: <http://www.ctahr.hawaii.edu/oc/freepubs/pdf/PD-62.pdf>

Friday, J. B., and J. Smith. 2006. Agroforestry. Pp. 47 – 53 in: *Toward Sustainable Agriculture: A Guide for Hawai‘i’s Farmers*. J. Smith and S. A. El-Swaify, eds. College of Tropical Agriculture and Human Resources, University of Hawai‘i, Honolulu, HI. URL: http://www.ctahr.hawaii.edu/oc/freepubs/pdf/TSA_guide.pdf.

Friday, J. B., J. F. Yanagida, P. Illukiptiya, R. J. Mamiit, and Q. A. Edwards. 2006. Characteristics of Hawai‘i’s Retail Forest Industry 2001. Economic Issues 8, College of Tropical Agriculture and Human Resources, University of Hawai‘i, Honolulu, HI. URL: <http://www.ctahr.hawaii.edu/oc/freepubs/pdf/EI-8.pdf>

Friday, J. B. 2006. Forage banks and forage gardens. In: Campbell, K.L.I., C. Garforth, C. Heffernan, J. Morton, R. Paterson, C. Rymer, and M. Upton. *Smallstock in Development*, CD-ROM. DFID Livestock Production Programme, Natural Resources International Ltd, Aylesford, Kent, UK.

Yanagida, J. F., J. B. Friday, P. Illukpitiya, R. J. Mamiit, and Q. Edwards. 2004. Economic value of Hawai‘i’s forest industry in 2001. Economic Issues 7, College of Tropical Agriculture and Human Resources, University of Hawai‘i, Honolulu, HI. URL: <http://www.ctahr.hawaii.edu/oc/freepubs/pdf/EI-7.pdf>

Miyasaka, S. C., M. Habte, J. B. Friday, and E. V. Johnson. 2003. Manual on arbuscular mycorrhizal fungi production and inoculation techniques. SCM-5. College of Tropical Agriculture and Human Resources, University of Hawai‘i, Honolulu, HI. <https://www.ctahr.hawaii.edu/oc/freepubs/pdf/SCM-5.pdf>

Friday, J. B., and A. Steinberg-Lake. 2002. Hawai‘i Forests and Forestry Information Directory. College of Tropical Agriculture and Human Resources, University of Hawai‘i, Honolulu, HI.

Friday, J. B. 2000. *Acacia koa*. In: CAB International, *Global Forestry Compendium*, CAB International, Oxford, UK. Available on-line by subscription at URL <http://www.cabi.org/fc/>

Friday, J. B. 2000. Seed technology for forestry in Hawai‘i. College of Tropical Agriculture and Human Resources, University of Hawai‘i, Honolulu, HI. URL: <http://www.ctahr.hawaii.edu/oc/freepubs/pdf/RM-4.pdf>.

Friday, J. B., C. Cabal, and J. Yanagida. 2000. Financial analysis for tree farming in Hawai‘i. College of Tropical Agriculture and Human Resources, University of Hawai‘i, Honolulu, HI. URL for document: <http://www.ctahr.hawaii.edu/oc/freepubs/pdf/RM-9.pdf> and spreadsheet:

http://www.ctahr.hawaii.edu/oc/freepubs/spreads/RM-9_forest_econ_calc.xls.

Friday, J. B. 1989. Chapters on nurseries, reforestation, and bamboo propagation in Agroforestry Technology Information Kit. International Institute of Rural Reconstruction, Silang, Cavite, Philippines.

Friday, J. B. 1988. Species descriptions of *Acacia mangium*, *Calliandra calothyrsus*, *Pinus caribaea*, and *Tamarindus indica* in Agroforestry Species for the Philippines, T. Hensleigh and B. Holaway, eds. US Peace Corps, Manila, Philippines.

Peer-reviewed Technical Reports

Kamelamela, K. L., J. Chamberlain, A. D. Lehman, I. Sprecher, J. B. Friday, and T. Ticktin. 2023. Hawai'i Non-timber Forest Products: Cultural and Economic Foundations. USDA Forest Service General Technical Report PNW-GTR-1011. <https://www.fs.usda.gov/research/treesearch/66963>

Friday, J. B., M. Keir, H. McMillen, and T. Rubenstein. 2022. Reforestation in the Hawaiian Islands. *Tree Planters' Notes* 65(1): 34-55. <https://rngr.net/publications/tpn/65-1>

Cannon, P., J. B. Friday, F. Liyag, and D. Greenberg. 2021. Forest restoration on degraded soils in Yap, Federated States of Micronesia. *Tree Planters' Notes* 64(1): 39-46. <https://rngr.net/publications/tpn/64-1>

Krishnapillai, M. V, S. Young-Uhk, J. B. Friday, and D. L. Haase. 2020. Locally Produced Cocopeat Growing Medium for Container Plant Production. *Tree Planters' Notes* 63 (1): 29-48. <https://www.rngr.net/publications/tpn/63-1/locally-produced-cocopeat-growing-media-for-container-plant-production>

Hauff, R., L. Keith, R. F. Hughes, C. Giardina, J. B. Friday, R. Peck, R. Stormont, C. Martin, and J. Price. 2020. Rapid 'Ohi'a Death Strategic Response Plan. Hawai'i State Dept. of Land and Natural Resources, Honolulu, HI. <https://gms.ctahr.hawaii.edu/gs/handler/getmedia.ashx?moid=66598&dt=3&g=12>

Chamberlain, J., J. Davis, M. Duguid, D. Ellum, M. Farrell, J. B. Friday, D. Fuller, S. Kruger, H. Marcano-Vega, J. McCoy, D. Page, S. Prisley, J. Young, and J. Zasada. 2018. Ch. 2 -- Non-timber Forest Products and Production. Pp. 10-57 in: J. Chamberlain, M. R. Emery, and T. Patel-Weynand, eds. *Assessment of Non-Timber Forest Products in the United States Under Changing Conditions*. Gen. Tech. Rep. SRS-232: U.S. Department of Agriculture, Forest Service, Washington DC. 268 pp. <https://doi.org/10.2737/SRS-GTR-232>

Friday, J. B., K. Friday, and C. Elevitch. 2017. Appendix 1: Hawai'i and the American-affiliated Pacific. In: Schoeneberger, M., G. Bentrup, and T. Patel-Weynand, eds. *Agroforestry: Enhancing Resiliency in U.S. Agricultural Landscapes Under Changing Conditions*. GTR WO-96. U. S. Department of Agriculture, Forest Service, Washington, DC. <https://www.fs.usda.gov/treesearch/pubs/55795>.

MacFarland, K., C. Elevitch, J. B. Friday, K. Friday, F. K. Lake, and D. Zamora. 2017. Ch. 5: Human Dimensions of Agroforestry Systems. In: In: Schoeneberger, M., G. Bentrup, and T. Patel-Weynand, eds. *Agroforestry: Enhancing Resiliency in U.S. Agricultural Landscapes Under Changing Conditions*. GTR WO-96. U. S. Department of Agriculture, Forest Service, Washington, DC. <https://www.fs.usda.gov/treesearch/pubs/55795>.

Conte, M.C., C. Giardina, N. Hannahs, J.B. Friday, and J.S. Greenwell. 2009: The Emission-Reduction Potential of Native Forest Restoration in Hawai'i. Daily, G.C., J.H. Goldstein, and J. Kaulukukui (eds.). Report to the Greenhouse Gas Emissions Reduction Task Force. Submitted 14 August 2009. Honolulu, HI. 46 p.

McArthur, H. J., and J. B. Friday. 2009. Application of agricultural knowledge, science, and technology (AKST) to forestry production. Chapter 2.2.4 in: *International Assessment of Agricultural Science,*

Technology and Development (IAASTD), World Bank and Island Press. URL: www.agassessment.org

Conkle, M. T., N. Dudley, and J. B. Friday. 2002. Country Report: Hawai'i. Report presented at the Pacific Sub-Regional Workshop on Forest and Tree Genetic Resources, Apia, Samoa, 1999. CSIRO Forestry and Forest Products, Canberra, Australia.

Trade and Popular press articles

Haase, D. L., J. B. Friday, and K. S. Friday. 2020. Pacific Island Tree Nursery Workshop held in Guam. International Forestry Working Group Newsletter. Society of American Foresters / International Society of Tropical Foresters. <http://www.orrforest.net/saf/FebMar2020.pdf>

Friday, J. B. 2019. Working to save a symbol of Hawai'i. Noelo, University of Hawai'i, Honolulu. Pp. 16-17.

Trauernicht, P., E. Pickett, P. Beimler, C. P. Giardina, S. Cordell, J. B. Friday, E. Moller, and C. M. Litton. 2018. Fire Management Needs in the Pacific Islands: A Collaborative Approach. *Fire Management Today* 76(1): 30-35.

Yanger, C. M., and J. B. Friday. 2018. Rapid 'Ōhi'a Death Update. *Landscape Hawai'i* March/April issue. Honolulu, HI.

Friday, J. B. 2017. Rapid 'Ōhi'a Death Update. *Landscape Hawai'i* May/June issue. Honolulu, HI.

Friday, J. B. 2015. Rapid 'Ōhi'a Death. *Landscape Hawai'i* September/October issue. Honolulu, HI.

Friday, J. B., L. Keith, and F. Hughes. 2015. Ceratocystis Wilt of 'Ōhi'a. *Landscape Hawai'i* May/June issue. Honolulu, HI.

Friday, J. B. 2013. Pests and diseases of Acacia koa. *Landscape Hawai'i* September/October issue. Honolulu, HI.

Cram, D., S. Cordell, J.B. Friday, C. Giardina, C. Litton, E. Moeller, and E. Pickett. 2013. Fire and drought in paradise: Say it isn't so, Smokey. *Rural Connections* 7(1): 19-22. http://wrdc.usu.edu/files/publications/publication/pub__7956191.pdf

Friday, J. B., J. Leary, T. Idol, and K. Vickers. 2008. New CTAHR projects help restore koa forests. *Nā Leo o ka 'Āina* 3(2): 5. Hawai'i Division of Forestry and Wildlife, Honolulu, HI.

Friday, J. B. and J. Yanagida. 2007. Directions for Hawaii's forest industry for the next century. *Hawai'i Forest Journal*, Hawai'i Forest Institute, Hilo, HI. http://www.hawaiiforestinstitute.org/documents/journal_sept2007.pdf

Idol, T., P. G. Scowcroft, N. Dudley, P. Simmons, K. Dancil, and J. B. Friday. 2007. The value of managing Acacia koa forests. *Hawai'i Forest Journal*, Hawai'i Forest Institute, Hilo, HI. http://www.hawaiiforestinstitute.org/documents/journal_sept2007.pdf

Friday, J. B., A. Kaufman, M. Thorne, C. Daehler, and J. Smith. 2006. O'ahu invasive plants workshop Oct. 27th. *Hawai'i Landscape* 10(5): 23.

Vickers, K., J. B. Friday, and T. Idol. 2006. Helping the koa regain ground. *Agriculture Hawai'i* 7(2): 10.

Friday, J. B. 2005. Bamboo propagation in East Timor. *Bamboo* 26(6): 9-10.

Friday, J. B. Winter 2003, Winter 2001, Winter 2000, Summer 1999. Hawai'i Forestry News. College of Tropical Agriculture and Human Resources, University of Hawai'i, Honolulu, HI.

Friday, J. B. 2000. Forest management in Hawai'i. Hamakua Times 3-9: 1, 16.

Friday, J. B. 2000. Plantation trees and soil nutrition. Woods (8)1: 1, 4. Hawai'i Forest Industry Ass'n., Hilo, HI.

Friday, J. B. 1999. Small-holder tree farming succeeding in the Philippines. Woods 7(4):1-3, Hawai'i Forest Industry Ass'n., Hilo, HI.

Friday, J. B. 1999. Success may depend on good seed for forestry projects in Hawai'i. Woods 7(3):2, Hawai'i Forest Industry Ass'n., Hilo, HI.

Friday, J. B. 1999. Finding information on forestry depends on search. Woods 7(1):5, Hawai'i Forest Industry Ass'n., Hilo, HI.

Friday, J. B. 1998. Agroforestry, plant competition, and a free lunch. Forest, Farm, and Community Tree Research Reports 3: ii-iii.

Creative Works (i.e., Extension Videos, Websites, Blogs, Creative Designs and Exhibitions, etc.)

Websites

Hawai'i Forestry Extension, <https://cms.ctahr.hawaii.edu/forestry>. Since 2000. Forestry extension program website featuring photos and information about forestry trees, publications, workshops, cost-share programs, and other information valuable to forest landowners and managers.

Rapid 'Ōhi'a Death, www.RapidOhiaDeath.org. Website created in 2016 to provide information on new disease of Hawaiian forests.

Hawai'i Forestry Photo Gallery, www.flickr.com/jbfriday. Since 2009. Open access gallery of original images of native and non-native Hawaiian plants, Acacia koa, plants of other Pacific Islands, nurseries for forestry and conservation in the Pacific, forest health, agroforestry, and other topics. Over 3,500 photos posted, labeled, and geo-located.

Hawai'i Renewable Natural Resources Extension on YouTube: www.YouTube.com/HawaiiRREA. Since 2008. Short videos produced by the Hawai'i Renewable Natural Resources Extension Program on topics including weed control, forest stand management, and forest nursery production.

Hawai'i Forestry Extension on Facebook, www.facebook.com/HawaiiForestryExtension/. Since 2013. Fifty to 100 posts per year on forestry and conservation events in Hawai'i and the Pacific.

Hawai'i Forestry Extension on Instagram, www.instagram.com/james_b_friday. Since 2017. Photos of forestry trees, native plants, pests and diseases.

Videos

Friday, J. B. 2022. Virtual tour of Hawaii's forests: Pu 'u Wa'awa'a. <https://www.youtube.com/watch?v=2JKleJfHr8&t=19s>

Friday, J. B. 2021. Planting tree seedlings in Hawai'i. https://www.youtube.com/watch?v=cun_GZuYP_M&t=628s

Krishnapillai, M., S. Younk-Uhk, and J. B. Friday. 2018. Producing locally made potting mixes from

coconut husks in the Pacific. <https://www.youtube.com/watch?v=Bfce85AguuA>.

Friday, J. B., J. Wagner, A. Yeh, and N. Koch. 2013. Containers for tree seedlings: forest and conservation nurseries. <https://www.youtube.com/watch?v=jJUqAKoXDVE>.

Friday, J. B. and J. Wagner. 2013. Native forest tree seed: Collecting, processing, and storage. <https://www.youtube.com/watch?v=SzmR5Snc3CM>.

Friday, J. B. and N. Koch. 2012. Improving form of young koa trees. <https://www.youtube.com/watch?v=1j0y9hTUMks>.

Friday, J. B., and S. Coffee. 2012. Planting koa. <https://www.youtube.com/watch?v=OyCR54SBQSU>. 727 views [Sept. 2017]

Friday, J. B., J. Leary, and T. Idol. 2009. Thinning, fertilization, and herbicide trials to improve koa production. <https://www.youtube.com/watch?v=fyEPFuHzcbI>.

Leary, J., J. B. Friday, and T. Idol. 2009. Establishing silvopastures with Acacia koa. <https://www.youtube.com/watch?v=KU3NQ0kiZP4>.

Friday, J. B. 2009. Koa forest in Koke'e: Recovery and threats. <https://www.youtube.com/watch?v=ufzVaICzZIs>.

Leadership Roles (Committees, Boards, Advisory, etc.)

USDA Renewable Resources Extension Act program leader, CTAHR, UH Mānoa, 2008 to present.

USDA NRCS Forestry Technical Advisory Committee, 2019.

Hawai'i Division of Forestry and Wildlife Forest Stewardship Program and Forest Legacy Program advisory committee, 1998 to 2016, 2017-present. Chair, 2010, 2022.

Pacific Fire Exchange, Steering committee member, 2012 to present.

Big Island Invasive Species Committee, Steering committee member, 2014 to present.

USDA NRCS East Hawai'i Local Working Group, 2016 to present.

Affiliate faculty, University of Hawai'i at Hilo Tropical Conservation Biology and Environmental Science Program, 2010 to present.

Hawai'i Community College Forest TEAM program advisory committee, 2002 to present.

Friends of Hakalau Forest National Wildlife Refuge, Hilo, HI. President 2018 to present. Secretary, treasurer, 2011 to 2016.

Search committee member, Associate Dean for Extension, CTAHR, UH Mānoa, 2022.

Search committee member, Agriculture Research Technician V, Volcano Experiment Station, 2017.

Search committee member, Agriculture Research Technician IV, Mealani Experiment Station, 2017.

Search committee member, Agriculture Research Technician V, Mealani Experiment Station, 2017.

Collaborator, CTAHR Volunteer Development Program, 2016-2019.

Organizing committee member, CTAHR Extension Visioning and Planning Conference, 2016.

Big Island Invasive Species Committee advisory board, 2014 to present.

CTAHR Senate, 2013-2015, 2021-present, UH Mānoa. Chair of Extension committee, 2022.

Search committee member, Associate Dean for Extension, CTAHR, UH Mānoa, 2014.

Search committee member, Associate Dean for Extension, CTAHR, UH Mānoa, 2013.

Search committee member, Soil Ecologist, Dept. of Natural Resources and Environmental Management, CTAHR, UH Mānoa, 2013.

Hawai‘i Chapter, Society of American Foresters, secretary, 2005 to 2011. Chair elect 2012. Bio-security track co-chair and field trip coordinator, National Convention 2011.

Search committee member, Ecological Economist, Dept. of Natural Resources and Environmental Management, CTAHR, UH Mānoa, 2011.

Department Personnel Committee member, Dept. of Natural Resources and Environmental Management, CTAHR, UH Mānoa, 2009 through 2012.

Search committee member, Specialist in Invasive Plant Species Management, Dept. of Natural Resources and Environmental Management, CTAHR, UH Mānoa, 2008.

Board Member, Hawai‘i Forest Institute, 2007 to 2016. Vice president, 2012.

Board Member, Tropical Reforestation and Ecosystems Education (TREE), 2007 to 2009.

Search committee chair, Professor of Renewable Natural Resources, Dept. of Natural Resources and Environmental Management, CTAHR, UH Mānoa, 2006.

Search committee member, Professor of Forestry, College of Agriculture, Forestry, and Natural Resources, UH Hilo, 2005.

Editorial panel for Hawai‘i Forest Journal (Hawai‘i Forest Institute, Hilo, Hawai‘i), 2006 to 2014.

Reviews for 16 scientific journals and nine agency grant programs.

Graduate Students

<u>Category</u>	<u>Current Number of Students</u>	<u>Number Graduated (Career)</u>
<i>Chair</i> of Master’s Committees	1	3
<i>Chair</i> of PhD Committees	0	2
Member of Master’s Committees	3	12
Member of PhD Committees	3	6

Grant Support

Technical Assistance for Forestry, Agroforestry, and Native Plant Nurseries and Reforestation in the American Affiliated Pacific Islands. J. B. Friday, Principal Investigator. USDA Forest Service. September 2023. \$33,900.

Outreach and Extension for Management of Rapid ‘Ōhi‘a Death on Hawai‘i Island. J. B. Friday, Principal Investigator. Hawai‘i Department of Land and Natural Resources Invasive Species Council. Jan. 2023 – Apr. 2024. \$23,075.

Outreach and Extension for Management of Rapid ‘Ōhi‘a Death on Hawai‘i Island. J. B. Friday, Principal

Investigator. Hawai'i Department of Land and Natural Resources Invasive Species Council. Jan. 2022 – Apr. 2023. \$29,250.

Reforestation of gorse lands at Humu'ula. J. B. Friday, Principal Investigator, D. Jacobs, R. Herson, K. Rose, and E. Thyroff. Hawai'i Department of Hawaiian Home Lands. July 2021 – June 2022. \$19,819.80.

Outreach and Extension for Management of Rapid 'Ōhi'a Death on Hawai'i Island. J. B. Friday, Principal Investigator. Hawai'i Department of Land and Natural Resources Invasive Species Council. Dec. 2020 – Mar. 2021. \$44,113.

Stakeholder and Community Support for Rapid 'Ōhi'a Death Prevention. J. B. Friday, Principal Investigator. Hawai'i Department of Land and Natural Resources. June 2020. \$32,624.

Technical Assistance for Forestry and Conservation Nurseries in the American Affiliated Pacific Islands. J. B. Friday, Principal Investigator. USDA Forest Service. April 2020. \$24,000.

Management and Treatment of Rapid 'Ōhi'a Death. J. B. Friday, Principal Investigator. Hawai'i Department of Land and Natural Resources. Dec. 2019. \$108,087.13.
Faculty Travel Grant, Oct. 2019, University of Hawai'i, \$1,200.

Screening *Metrosideros polymorpha* ('ōhi'a) for Resistance to *Ceratocystis lukuohia*. J. B. Friday, Principal investigator, L. Keith, C. Giardina. USDA Forest Service. June 2019. \$62,668.04.

Management and Treatment of Rapid 'Ōhi'a Death. J. B. Friday, Principal Investigator. Hawai'i Department of Land and Natural Resources. April 2019. \$138,291.49.

Support for the Rapid 'Ōhi'a Death Educational Specialist. J. B. Friday, Principal Investigator. Hawai'i Department of Land and Natural Resources. April 2019. \$50,028.00.

Phytosanitary Treatments of 'Ōhi'a Plant Material. J. B. Friday, Principal Investigator. USDA Forest Service. June 2018. \$35,793.00.

Management and Treatment of Rapid 'Ōhi'a Death. J. B. Friday, Principal Investigator. Hawai'i Department of Land and Natural Resources. May 2018. \$275,741.72.

Rapid 'Ōhi'a Death – Testing and Research Support. J. B. Friday, Principal Investigator. Hawai'i Department of Land and Natural Resources. January 2018. \$65,762.

Molecular Detection, Pathology Characterization and Development of Management Strategies for Rapid 'Ōhi'a Death. J. B. Friday, Principal Investigator, L. Keith. USDA Agriculture Research Service. September 2017. \$103,500.

Technical Assistance for Forestry and Conservation Nurseries in the American Affiliated Pacific Islands. J. B. Friday, Principle Investigator. USDA Forest Service. June 2017. \$29,925.

Forests without trees: Filling critic gaps to help control the emerging threat of Rapid 'Ōhi'a Death. Gordon Tribble, Principal Investigator, L. Keith, F. Hughes, J. B. Friday, D. Duffy, S. Kaye, K. Ersbak. 2017. USGS Service First Program, \$521,720.

'Āina Mauna Seed Orchards / Progeny Test. J. B. Friday, Principal Investigator, Douglass Jacobs. June 2016 – June 2018. Department of Hawaiian Home Lands. \$12,685.

Outreach and Research to prevent the spread of Rapid 'Ōhi'a Death. J. B. Friday, Principal Investigator. July 2016 – September 2017. Hawai'i Tourism Authority. \$79,000.

Hau'oli Mau Loa Rapid 'Ōhi'a Death Molecular Biologist, J. B. Friday, Principal Investigator. January 2016 to December 2018. Hau'oli Mau Loa Foundation. \$50,000.

Hau'oli Mau Loa Rapid 'Ōhi'a Death Laboratory Technician, J. B. Friday, Principal Investigator. January 2016 to December 2018. Hau'oli Mau Loa Foundation. \$50,000.

GMBF - Rapid 'Ōhi'a Death. J. B. Friday, Principal Investigator. Gordon and Betty Moore Foundation. November 2015 to December 2018. \$50,000.

The ecology and management of Rapid 'Ōhi'a Death across forests of Hawai'i: development of tractable, science-based solutions. Flint Hughes, Principle Investigator, J. B. Friday, Lisa Keith. Sept. 2015 – March 2017. Hawai'i Invasive Species Committee, \$99,000.

Professional and Staff Development and Training in Forestry Skills. J. B. Friday, Principal Investigator. Oct. 2005 to September 2020. USDA Renewable Resources Extension Act program. Three awards totaling \$390,000.

Extension and Research for Forestry in Hawai'i and the American-affiliated Pacific. J. B. Friday, Principal Investigator. USDA Hatch Integrated project, October 2015 to September 2018, \$120,000.

Genetically improved Acacia koa seeds for Hawaiian forestry and conservation. C. Litton, Principle Investigator, F. Inman-Narahari, J. B. Friday, C. Giardina, D. Jacobs. 2014 to 2016. USDA Forest Service State and Private Competitive Grant Program, \$150,000.

Faculty Travel Grant for participation in the International Union of Forestry Research Organizations / Society of American Foresters joint Congress and National Conference, October 2014. J. B. Friday, University of Hawai'i, \$1,300.

Young-Growth Koa Wood Quality Assessment and Demonstration, J. B. Friday, Principal Investigator. Cooperative Agreement, USDA Forest Service, Modification two, Dec. 31, 2014 to Dec. 31, 2015. \$15,000.

Performance, survival and plasticity of koa (*Acacia koa* Gray) and māmane (*Sophora chrysophylla*) at a high elevation site on the Big Island of Hawai'i, J. B. Friday (Principal Investigator), Kyle Earnshaw, F. Douglas Jacobs. Hawai'i Department of Hawaiian Home Lands. Three awards totaling \$33,594. June 2013 to Dec. 2019.

Determining patterns and causes of sudden death of 'Ōhi'a (*Metrosideros polymorpha*) stands and limitations to their recovery in wet lowland forests of Hawaii Island. Flint Hughes (Principal Investigator), J. B. Friday, Pamela Scheffler, Lisa Keith, Leif Mortenson, Aileen Yeh, Julie Leialoha, and Travis Sowards. USDA Forest Service, March 2014 – May 2016. \$75,000.

Technical Assistance for Forestry, Agroforestry, and Native Plant Nurseries in the American-affiliated Pacific Islands, J. B. Friday, Principal Investigator, USDA Forest Service, Sept. 2011 to Sept. 2019. Four grants totaling \$82,652.

Developing a Tropical Hardwood Tree Improvement and Regeneration Center and Positioning CTAHR as a Global Leader in Research, Education, and Extension in Tropical Forestry. J. B. Friday, Principle Investigator, Creighton Litton. USDA Hatch Integrated Project, October 2012 to September 2014, \$55,000.

Improving the sustainability of *Acacia koa* through increased resistance to koa wilt disease. S. Miyasaka, Principal Investigator, J. Uchida, J. B. Friday. USDA McIntire-Stennis Research Program, Oct. 2012 to Sept. 2017, \$120,000.

Extension and Research for Forestry in Hawai'i and the American-affiliated Pacific. J. B. Friday, Principal Investigator. USDA Hatch Integrated project, October 2011 to September 2013, \$26,750.

Selection and Propagation of Koa and Leucaena for Production of High-Value Hardwoods. James Brewbaker, Principal Investigator, J. B. Friday, Travis Idol, Joseph DeFrank, and Brian Turano. USDA McIntire-Stennis program, October 2011 to September 2014, \$80,000.

Management Practices for Restoring Acacia koa. J. B. Friday, Principal Investigator. Cooperative Agreement, USDA Forest Service, Sept. 2011 to Dec. 2012, \$20,000.

Extension and research for forestry in Hawai'i and the American-affiliated Pacific, J. B. Friday, Principal Investigator, USDA Hatch Integrated Program, October 2010 to September 2012, \$10,000.

Young-Growth Koa Wood Quality Assessment and Demonstration, J. B. Friday, Principal Investigator. Cooperative Agreement, USDA Forest Service, Aug. 2011 to Dec. 2013, \$7,729.

Faculty Travel Grant, J. B. Friday, September 2010, University of Hawai'i, \$1,500.

Management Practices for Restoring Acacia koa. J. B. Friday, Principal Investigator. Cooperative Agreement, USDA Forest Service, Sept. 2010 to Dec. 2011, \$36,835.

Ecosystem Structure and Function in Degraded, Restored, and Intact Hawaiian Forests: Understanding and Predicting Forest Carbon Cycling with Global Climate Change. Creighton Litton, Principal Investigator, J. B. Friday, October 2010 to September 2012, \$67,487.

Planting Tree Islands on Private Ranchland. L. Pejchar, Principal Investigator, J. Goldstein, J. B. Friday, and G. Daily. 2009 – 2010. USDA Conservation Innovation Grant. \$74,997.

Assessment of Acacia koa forest cover and productivity across environmental gradients in Hawai'i using fine resolution remote sensing, T. Idol, Principal Investigator, J. B. Friday, R. Martinez-Morales. Sept. 2008 to Mar. 2009. Hawai'i Division of Forestry and Wildlife Forest Health program. \$20,000.

Specialty Crops for Pacific Islands. C. Elevitch, Principal Investigator, J. B. Friday, J. Lawrence, R. Leaky, and D. Ragone. 2007 to 2009. USDA Sustainable Agriculture Research and Education grant. \$80,000.

New innovations in native forest restoration for high-elevation rangelands infested with the noxious weed kikuyu grass (*Pennisetum clandestinum*), T. Idol, Principal Investigator, J. Leary, P. G. Scowcroft, J. B. Friday, J. DeFrank, M. Robinson, D. Matsuura, D. Wass. Aug. 2007 to Jul. 2009. USDA NRCS Conservation Innovation Grant, \$46,040.

Evaluation of Hawai'i coffee agroforestry systems, C. Elevitch, Principal Investigator, T. W. Idol, J. B. Friday, V. Easton-Smith, M. Wright, M. Bondera, K. Sheppard, and D. Leaman. Sept. 2007 to Aug. 2009. USDA NRCS Conservation Innovation Grant, \$120,000.

Thinning Acacia to optimize conditions for under planted native species. D. Limtiaco, Principal Investigator, J. Tuquero, J. B. Friday, K. Friday, C. Giardina. Sept. 2007 to Aug. 2010. USDA NRCS Conservation Innovation Grant, \$68,230.

Developing productivity models and silvicultural guidelines for growing and managing the native Hawaiian hardwood Acacia koa. J. B. Friday, Principal Investigator, T. Idol, P. Scowcroft. Sept. 2006 to Aug. 2009. USDA Tropical and Subtropical Agriculture Research Program (T-STAR), \$156,457.

Molecular identification, genetic variation, and host susceptibility of a new invasive rust pathogen attacking 'ōhi'a (*Metrosideros polymorpha*) in Hawai'i. S. Zhong, Principal Investigator, J. B. Friday, J. Uchida. USDA Hatch program, \$25,000. Feb. 2006 – Sept. 2010.

Pacific Island Agroforestry Workshops and Field Visits, C. Elevitch, Principal Investigator, J. B. Friday, T. Ingersoll, D. Ragone, M. Robotham. Jul. 2005 to Jun. 2006. USDA SARE program, \$59,777.

Developing Effective Silvicultural Guidelines for Koa Forest Management. T. Idol, Principal Investigator, J. B. Friday, P. Scowcroft. Nov. 2005 to Sept. 2008. USDA McIntire-Stennis research program, \$60,000.

Identify Koa Pathogens in Forests and Plantations, Locate Disease Free Areas, and Develop Disease Control Options for Plantation Establishment. J. Uchida, principal Investigator, J. B. Friday, S. Nelson. Nov. 2005 to Sept. 2008. USDA McIntire-Stennis research program, \$30,000.

Koa Productivity and Nutrient Use Efficiency in Response to Fertilization. T. Idol, Principal Investigator, J. B. Friday. Oct. 2003 to Sept. 2008. USDA McIntire-Stennis research program, \$82,904.

Forestry Education for Hawai'i Landowners. Hawai'i Forest Industry Ass'n. 2003 to 2005. USDA Forest Service Forest Land Enhancement Program, \$10,000.

Timor-Leste Agricultural Rehabilitation, Economic Growth, and Natural Resource Management Project. G. Uehara, Principal Investigator, R. Bowen, C. Chan-Halbrendt, K. Fleming, J. B. Friday, H. McArthur, R. Ogoshi, G. Tsuji. Sept. 2003 to Dec. 2005. US Agency for International Development, \$2.4 million.

Faculty Travel Grant, September 2003, University of Hawai'i, \$1,500.

Field Demonstration of Simultaneous Establishment of a Pili Grass Ground Cover and Native Hawaiian and High-Value Hardwoods Using No-Till Planting Methods and In-Field Mulch Production to Manage Weeds and Non-Point Source Pollution. J. DeFrank, Principal Investigator, J. B. Friday. Mar. 2003 to Apr. 2006. USDA Renewable Resources Extension Act program, \$5,600.

A Decision Aid for Nutrient Management for Forest Trees in Hawai'i. J. B. Friday, Principal investigator, R. Yost, T. Idol. Oct. 2002 to Sept. 2005. USDA McIntire-Stennis research program, \$59,495.

Genetic Improvement of Koa (*Acacia koa*). J. Brewbaker, Principal investigator, J. B. Friday, N. Dudley. Oct. 1, 2002 to Sept. 30, 2005. USDA McIntire-Stennis research program, \$26,800.

Economic Potential of Hawai'i's Forest Industry: Examination of Current Inventory, Costs of Production, Technical Efficiency, and Markets. J. Yanagida, Principal investigator, J. B. Friday, and R. Bowen. Oct. 1, 2001 to Sept. 30, 2004. USDA McIntire-Stennis research program, \$135,000.

Characterization of host suitability of forest tree species to plant-parasitic nematodes. B. S. Sipes, D. P. Schmitt, and J. B. Friday. USDA McIntire-Stennis research program, \$15,000.

Tropical ash invasiveness in Hawai'i: rate, environmental control, and impact on native biodiversity. J. B. Friday, Principal investigator, A. Ares, P. Scowcroft. Oct. 1 1999 to Sept. 30, 2003. USDA McIntire-Stennis research program, \$40,288

Creation of a Forests and Forestry Information Directory for Hawai'i. J. B. Friday, Principal investigator. Aug. 2000 to Dec. 2001. Hawai'i Forestry and Communities Initiative, Hawai'i Division of Forestry and Wildlife and USDA Forest Service, \$10,500.

Faculty Travel Grant, Oct. 1999, University of Hawai'i, \$1,500.

Presentations at Conferences

PROGRAMS

Rapid 'Ōhi'a Death: A Slow Fire in Hawaii's Native Forest. 2013 to present. Given 100s of talks, webinars, and workshops to community groups and stakeholders including local, state and international audiences of 6 to 400 people.

Forestry and conservation nurseries in the American-Affiliated Pacific, 2012 to present. Twelve three-day workshops for professionals given in cooperation with USDA Forest Service Reforestation, Nurseries, and Genetic Resources program on-site in American Samoa (2012), Guam (2013, 2016, 2019, 2023), Rota (CNMI) (2016), Palau (2013), and Yap (2014 and 2015), Chuuk (2016), Pohnpei (2014), and Kosrae (2015), Federated States of Micronesia.

'Ōhi'a Seed Conservation Workshops, 2017-2022. In coordination with Lyon Arboretum and Laukahi Hawai'i Plant Conservation Network, gave 20 workshops on citizen collection of seed of 'ōhi'a (*Metrosideros polymorpha*) for donation to seed banks in Hawai'i to be used for restoration and research. Three more workshops planned for late 2019.

Hawai'i Forest Stewards, August 2012, 2013, September 2014, 2015, September 2018, July 2019. Six three-day workshops training Hawai'i Island landowners in good forest management and techniques to reach out to friends and neighbors, Volcano, HI.

INVITED PRESENTATIONS

Rapid 'Ōhi'a Death Update, October 2019, October 2018. Hawaii Island Landscape Assoc. Landscape Management Conference, Kona, Hawai'i.

New Pests and Pathogens of Pacific Forests, May 2019. Western Chapter International Soc. For Arboriculture, Waikiki, Hawai'i.

Pests and Diseases for Forest Inventory and Analysis, January 2014, March 2019. Invited workshop on pests and diseases given to USDA Forest Service Forest Inventory and Analysis staff. Hilo, HI.

Pacific Island Agroforestry and Climate Change. October 2018. Society of American Foresters National Conference, Portland, Oregon

Use of Weed Risk Assessment in Hawai'i and the Pacific. September 2014. International Ecology and Management of Invasive Plants (EMAPi) symposium, Kona, HI.

Agroforestry Practices on Islands of the Pacific, May 2014. Invited presentation at the USDA workshop for National Climate Change Assessment: Agroforestry and Climate Change, Nebraska City, Nebraska.

INDIVIDUAL PRESENTATIONS

Reforestation of degraded lands in Micronesia. November 2019. Talk given at the Society of American Foresters National Conference, Louisville, Kentucky.

Management of native Hawaiian forests affected by *Ceratocystis* wilt. November 2019. Talk given at the Society of American Foresters National Conference, Louisville, Kentucky.

Science and Management of *Ceratocystis* Wilt on *Metrosideros* in Hawai'i. October 2018. Talk given at the Society of American Foresters National Conference, Portland, Oregon.

The Tropical Hardwood Tree Improvement and Regeneration Center. December 2017. Talk given at the Hawai'i Botanical Forum, Honolulu, HI.

Diseases of 'Ōhi'a in Hawai'i. December 2017. Talk given at the Hawai'i Botanical Forum, Honolulu, HI.

Value of young-growth koa and consumer preferences for koa color and figure, 2016. Talk given at the Acacia koa in Hawai'i: Facing the Future symposium, Hilo, HI.

Future directions for forest restoration in Hawai'i. October 2014. Talk given at the Second Restoring Forests conference, Lafayette, Indiana.

Sudden, Stand-level Mortality of 'Ōhi'a (*Metrosideros polymorpha*) on Hawai'i Island. October 2014. Talk given at the Society of American Foresters National Convention, Salt Lake City, Utah.

Assessing wood quality and developing markets for landowners growing high-value native hardwoods in Hawai'i. October 2014. Talk given at the International Union of Forestry Research Organizations, Salt Lake City, Utah.

Alien and invasive plant issues on Hawai'i Island. September 2014. Organized field trip for the international Ecology and Management of Invasive Plants (EMAPi) symposium, Kona, HI.

Forest Stewards Technical Service Provider training, November 2013, Kaneohe, HI and Volcano, HI. One-day workshop in each location, including eight lectures on forestry for consultants who are developing forest management plans for clients.

Sustainable koa forestry depends on superior wood quality in young trees. July 2013. Talk given at the Hawai'i Conservation Conference, Honolulu, HI.

Forestry in Hawai'i. January 2013. Talk to the Hawai'i Agriculture Leadership Foundation. Hilo, HI.

Growing Koa in Hawai'i Nei, November 2012. Two day symposium and field trip on koa for forest landowners. Hawai'i Forest Institute. Volcano, HI.

Bringing back koa, November 2012. Lecture to community on koa forest restoration, Hilo, HI.

Koa forest recovery over 33 years on Mauna Loa, August 2012. Talk given at the Hawai'i Conservation Conference, Honolulu, HI.

Carbon sequestration in young koa forests, November 2011. Talk given at the National Convention of the Society of American Foresters, Honolulu, HI.

A tropical hardwood tree improvement and regeneration center for Hawai'i and the Pacific, August 2011. Hawai'i Conservation Conference, Honolulu.

Assessment of forest health along an elevation gradient on Kaua'i using remote sensing, July 2011. Talk given at the Hawai'i Ecosystems Meeting, Hilo, HI.

Restoration of native upland Acacia koa forests in Hawai'i, October 2010. Talk given to the Society of American Foresters National Convention, Albuquerque, NM.

Individual Private Landowner Conservation and Networking for Native Forest Restoration, July 2010. Talk to the Hawai'i Conservation Conference, Honolulu.

Aliens on a Tropical Island: Invasive Plant Management in Hawai'i, June 2010. Talk given at the Vermont Coverts training.

Restoration of native Acacia koa forests in Hawai'i, March, May 2010. Talks given at the University of Massachusetts Dept. of Natural Resource Conservation and the Vermont Coverts Association.

Forests and Watersheds, Oct. 2009. Talk given to the Hilo Bay Watershed Advisory Group.

Koa field days, Aug. 2009 (Hawai'i), Feb. 2009 (Hawai'i), Mar. 2006 (Kaua'i), May 2006 (Hawai'i). Led field days for growers and professional foresters to experimental sites highlighting current research into koa silviculture.

Carbon Sequestration Possibilities in Koa Forest Restoration, July 2009. Hawai'i Conservation Conference.

Pests and diseases of dryland forests, Feb. 2009. Workshop given as part of Nahele Dryland Forest Symposium.

Restoration Outplanting: How the Extension Service can help you, Līhu'e, Oct. 2008; Maui, Apr. 2008; Hilo, Dec. 2007; Kona, Oct. 2007; Hilo, Jul. 2006. Gave talks to landowners as part of landowner information workshops sponsored by the Hawai'i Division of Forestry and Wildlife.

A Participatory Approach to Community Resource Management: Building upon Local Knowledge and Concerns, October 2007. Invited talk for the International Conference on Sustainability Science for Watershed Landscapes, University of Hawai'i, SEARCA, and the East-West Center.

Plantation koa: Another inconvenient truth?, September 2007. Talk given to Hawai'i Forest Industry Association board on issues with koa plantations.

Practical Agriculture for Hāmākua: Agroforestry, Aug. 2007. Gave evening workshop on agroforestry to landowners and farmers as part of an agriculture continuing education program.

Forestry Short Course V: Restoration of Degraded Landscapes, Hilo, Aug. 2007. Helped organize workshop on restoring native forests on degraded lands for foresters from Hawai'i and the western Pacific in conjunction with USDA Forest Service Institute of Pacific Islands Forestry. Gave presentations and led two days' of field trips and field exercises.

Banana Poka Roundup, Koke'e, Kaua'i, May 2007. Presented poster on research and current knowledge of koa forestry at Kaua'i's largest environmental gathering.

Rapid Rural Appraisal of Ilagan, Isabela, Philippines, Jan. 2007, Aug. 2001, Jul. 1999, and Mar. 1998. Designed and carried out four multi-lingual surveys of local farming technology in cooperation with researchers from PhilRice, University of the Philippines, IRRI, Michigan State, and North Carolina State as part of University of Hawai'i research program funded by the USDA Soil Management Collaborative Research Support Project. Wrote reports and analyses which were used to target research efforts to important problems faced by local farmers.

Jumping the fenceline: Escaped agricultural plants in Hawai'i, May (Hawai'i), Jun. (Maui), Aug. (Kaua'i) and Oct. 2006 (O'ahu). Organized workshops and field visits on ways to detect and prevent invasive species for Cooperative Extension agents and specialists and other natural resource and agriculture professionals. URL:
http://www.ctahr.hawaii.edu/rnre/invasive_agricultural_plants.asp

Lei Koa meeting, Honolulu, Jul. 2006. Presented state of the art knowledge on koa growing to architects and builders working with koa.

Stand management in secondary koa forests, Jul. 2006. Presented current koa research work at the Hawai'i Ecosystems Meeting.

Pacific Island agroforestry workshops and field visits, May 2006 (Hawai'i), Jun. 2006 (Guam and Palau). Presented workshops and led field tours for Cooperative Extension agents, NRCs field staff, NGOs, and private farmers in Hawai'i and the Pacific islands of Guam and Palau. Gave lectures

on tree-crop competition and tree species selection geared to each island. Led field trips to sites where participants could observe windbreaks and forage trees (Hawai'i) and traditional agroforestry systems (Palau). Emphasized ways to integrate sustainable tree-based agriculture into the modern economy. URL:
<http://www.agroforestry.net/events/afwksp2006/virtualwksps.html>

Forestry and the Environment, Agriculture and Environment Awareness Day, Hilo, May 2006. Gave short talks on uses and benefits of forests to elementary school children as part of University event.

Forestry in Hawai'i, Hilo, Jul. 2005. Gave invited presentation and led field day for international group attending the Western Forest Mensurationists' Conference.

Agroforestry technologies for East Timor. East Timor, Dec. 2004, Jul. 2005. Developed extension materials in local language, worked with local community to plant demonstration plots, and gave demonstrations to host country professionals and farmers on fodder tree production and bamboo propagation during two two-week trips to East Timor. URL:
<http://www.ctahr.hawaii.edu/forestry/Data/timor.html>

Introduction to tree farming in Hawai'i, Hilo, Mar. 2005. Presented examples and opportunities in non-industrial private tree farming to local clientele as part of the Sustainable Agriculture New Farmer Training Program.

Forest and Woodlot Management in Hawai'i, Kona, Jan. 2005. Organized two-day forestry conference with field trips for over 100 landowners and professionals in Hawai'i with the Hawai'i Forest Industry Ass'n. Conference focused on sustainable management of non-industrial private forest lands, particularly of native Hawaiian forests. Supported costs with grant from the USDA Forest Service Landowner Enhancement Program.

Thinning and stand management, Tree species for tree farms on Molokai, Quality planting stock, Molokai, Jul. and Aug. 2004. Gave presentations as part of tree farming workshop series for Hawaiian Homelands participants.

Nitrogen-fixing trees in Pacific Island agroecosystems, Hilo, Jun. 2004. Worked with ecologists from the USDA Forest Service Institute of Pacific Island Forestry to develop and teach a three-day workshop on the how to use nitrogen-fixing trees in the Pacific and avoid the problems caused by invasive species. Participants included foresters from the American-affiliated states in the Pacific and from Hawai'i.

Forest tree nursery technology for agroforestry and reforestation, Dili and Baucau, East Timor, Jun. 2004. Conducted one three-day workshop and two one-day workshops in nursery technology for professionals and community members in East Timor. Produced own training literature in local languages and brought materials for hands-on lessons. URL:
<http://www.ctahr.hawaii.edu/forestry/Data/timor.html>

Participatory rural appraisal, East Timor, Jan. 2004. Conducted a week-long participatory rural appraisal along with other UH faculty and taught 29 local professionals and students how to appraise local agricultural and socio-economic systems to target agriculture and forestry development projects. URL: <http://www.ctahr.hawaii.edu/forestry/Data/timor.html>

Forestry in Hawai'i, Kona, HI, Feb. 2004. Spoke to National Association of Conservation districts and foresters and USDA officials from around the Pacific.

Restoring native forests in Hawai'i, Portland, OR, Oct. 2003. Paper presented at the 6th IUFRO Extension Working Party Symposium.

Agroforestry possibilities for Timor-Leste, Dili, East Timor, Jul. 2003. Conducted week-long survey of

agroforestry systems in Timor and presented results in a workshop to the Timor-Leste Ministry of Agriculture, Forestry, and Fisheries.

Forest Restoration in Hawai'i, Honolulu, HI, Jul. 2003. Organized special session with four presentations at Hawai'i Conservation Conference. Presented own research on koa restoration to more than 400 scientists and natural resource professionals.

Forestry Short Course for Pacific Island Foresters, Hilo, HI, Jun. 2003. Taught a two-day workshop on plantation establishment to foresters from Hawai'i, Micronesia, and Samoa. Produced own training materials and organized field trips and exercises. Workshop was part of a longer professional development course in forestry organized by the USDA Forest Service Institute of Pacific Island Forestry.

Koa field days, Volcano, HI, Jun., Sept. 2002. Led field days to koa reforestation area and highlighted own research on koa.

Tree Harvesters' Professional Education Course, Hilo, HI, May 2002. Gave presentations and led field trip explaining Hawaiian forest ecology and silviculture to Hawai'i Forest Industry Assn.'s loggers' workshop.

Introduction to Tree Farming in Hawai'i, 2002, 2001, 2000; various dates and locations. Evening presentations given to local producers.

Invasiveness of Tropical Ash in a Native Hawaiian Forest, Hilo, HI, Jul. 2001. Research presentation given to the Society for Conservation Biology at national meeting.

Growing Working Forests for Hawai'i's Future, Kapa'a, HI, Jun. 2001. Helped organize and present three-day workshop for non-industrial private landowners in cooperation with Hawai'i Forest Industry Ass'n.. Gave presentations on forest economics, thinning and pruning, forestry research, and presented summary of conference.

Grazing under Koa: A Silvo-Pastoral Agroforestry System, Hilo, HI, Jan. 2001. Presentation given at the Hawai'i Agriculture 2001: Sustainable and Profitable Agribusiness Today sustainable agriculture conference.

Silvicultural Systems for Hawai'i, Laupāhoehoe, HI, Oct. 2000. Presentation given to the Hilo-Hāmākua Commercial Forestry Working Group.

Soil and Site Productivity for Forestry in Hawai'i. Hilo, HI, Jun. 2000. Organized two-day workshop for forestry professionals; included field trips.

Economics of Tree Farming in Hawai'i, Līhu'e, HI, Apr. 2000, May 2000. Presentations of financial analysis of tree farming for local landowners and producers.

Competition for light between *Flemingia macrophylla* and *Zea mays* in an agroforestry system, Portland, OR, Sept. 1999. Research presentation at Society of American Foresters national convention.

Forest Tree Improvement and Seed Technology, Hilo, HI, Jul. 1999. Organized and co-taught two-day workshop.

Weed Control for Dryland Forestry in Hawai'i, Kona, HI, Dec. 1998. Organized two-day workshop for professional land managers.

Assistance Programs for Forestry in Hawai'i, Kona, HI, Oct. 1998. Presentation given to Hawai'i Leeward Planning Conference.

Timber and Forest Products for Hawai'i, Laupāhoehoe, HI, Aug. 1998. Presentation given to Hilo-Hāmākua Commercial Forestry Working Group.

Agroforestry for Pacific Islands, Chuuk, Micronesia, 1992. Co-taught week-long workshop in cooperation with USDA Forest Service Institute of Pacific Islands Forestry and UH Agricultural Development in the American Pacific project.