

Thomas S. Dye, Archaeologist

Current Positions

President T. S. Dye & Colleagues, Archaeologists, Inc., Honolulu

Affiliate Graduate Faculty, University of Hawai'i at Mānoa

Education

Ph.D. Anthropology, Yale University (1987)

M.Phil. Anthropology, Yale University (1983)

B.A. Anthropology, University of Hawai'i at Mānoa (1980)

Research Interests

¹⁴C dating Primary interests are identification of suitable dating materials, full specification of dated archaeological contexts, and Bayesian calibration. This work has (i) established the age of the early Bellows Dune site, O18; (ii) solved, with Tim Rieth and Steve Athens, the long-standing problem of how to determine when Polynesians discovered and settled the Hawaiian Islands; (iii) proposed a new, late chronology for expansion and intensification of the Leeward Kohala Field System; (iv) proposed a Bayesian method for dating human dispersal in Remote Oceania, the last part of the globe to be settled by humans; and (v) developed an algorithm with Caitlin Buck to transform stratigraphic information into a Bayesian chronological model

Fish remains Primary interests are fish remains identification, statistical analysis of collections, and interpretation of patterns across space and through time. This work has (i) developed a manual of fish remains identification with Ken Longenecker; (ii) established a size/diversity relationship for archaeological fish bone collections from leeward Hawai'i Island; (iii) developed a method to estimate fish size from the centrum diameter of vertebrae; and (iv) discovered, with Ken Longenecker, that bonefish were a major component of the traditional Hawaiian fishing catch at Waimānalo, O'ahu.

Statistics Primary interests are exploratory multivariate data analysis and its application to archaeological collections. This work has (i) developed graphical software for star plots distributed with the R Project for Statistical Computing; (ii) developed a graphical summary of large collections over the space of an excavation; (iii) explored the use of directed acyclic graphs to construct and analyze Harris matrices; and

(iv) developed a set of landmarks for statistical shape analysis of fishhooks. Currently working with Jenny Kahn at Bishop Museum to characterize the sizes and shapes of more than 800 Hawaiian stone adzes.

Reproducible research Active collaborator in the development of Org-mode software, which can be used to carry out and publish reproducible research. This work has led to the publication of two reproducible research projects.

Selected Publications

- Dye, Thomas S. (2015). "Dating human dispersal in remote Oceania: A Bayesian view from Hawai'i". In: *World Archaeology* 47.4, pp. 661-676.
- Dye, Thomas S. and Caitlin E. Buck (2015). "Archaeological sequence diagrams and Bayesian chronological models". In: *Journal of Archaeological Science* 63, pp. 84-93.
- Kahn, Jennifer G. and Thomas S. Dye (2015). "A note on Hawaiian stone axes". In: *Journal of Pacific Archaeology* 6.1, pp. 18-25.
- Putzi, Jeffrey L. et al. (2015). "Alternative models of volcanic glass quarrying and exchange in Hawai'i". In: *Journal of Archaeological Science: Reports* 2, pp. 341-352.
- Athens, J. Stephen, Timothy M. Rieth, and Thomas S. Dye (2014). "A Paleoenvironmental and Archaeological Model-Based Age Estimate for the Colonization of Hawai'i". In: *American Antiquity* 79.1, pp. 144-155.
- Dye, Thomas S. (2014a). "Structure and Growth of the Leeward Kohala Field System: An Analysis with Directed Graphs". In: *PLOS One*. URL: <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0102431>.
- (2014b). "Wealth in Old Hawai'i: Good Year Economics and the Rise of Pristine States". In: *Archaeology in Oceania* 49.2, pp. 59-85.
- Bayman, James M. and Thomas S. Dye (2013). *Hawai'i's Past in a World of Pacific Islands*. Washington, DC: SAA Press.
- Dye, Thomas S. and Carl E. Sholin (2013). "Changing Patterns of Firewood Use on the Waimānalo Plain". In: *Hawaiian Archaeology* 13, pp. 30-68.
- Dye, Thomas S. (2012). "Hawaiian temples and Bayesian chronology". In: *Antiquity* 86.334, pp. 1202-1206.
- Schulte, Eric, Dan Davison, Thomas Dye, and Carsten Dominik (2012). "A Multi-Language Computing Environment for Literate Programming and Reproducible Research". In: *Journal of Statistical Software* 46.3, pp. 1-24. URL: <http://www.jstatsoft.org/v46/i03>.
- Dye, Thomas S. (2011a). "A Model-based Age Estimate for Polynesian Colonization of Hawai'i". In: *Archaeology in Oceania* 46, pp. 130-138.
- (2011b). "Contemporary Practice of Archaeology in Hawai'i". In: *Hawaiian Archaeology* 12, pp. 125-142.
- (2011c). "Gift Exchange and Interpretations of Captain Cook in the Traditional Kingdoms of the Hawaiian Islands". In: *The Journal of Pacific History* 46.3, pp. 275-292.

- Dye, Thomas S. (2011d). "The Tempo of Change in the Leeward Kohala Field System, Hawai'i Island". In: *Rapa Nui Journal* 25.2, pp. 21-30.
- ed. (2010a). *Research Designs for Hawaiian Archaeology*. Special Publications 3. Honolulu: Society for Hawaiian Archaeology.
 - (2010b). "Social Transformation in Old Hawai'i: A Bottom-up Approach". In: *American Antiquity* 75.4, pp. 727-741.
 - (2010c). "Traditional Hawaiian Surface Architecture: Absolute and Relative Dating". In: *Research Designs for Hawaiian Archaeology*. Ed. by Thomas S. Dye. Special Publications 3. Honolulu: Society for Hawaiian Archaeology. Chap. 2, pp. 93-155.
- Dye, Thomas S. and Jeffrey Pantaleo (2010). "Age of the O18 Site, Hawai'i". In: *Archaeology in Oceania* 45, pp. 113-119.
- Dye, Thomas S. (2004). "How to Fix the Inventory Survey Rule". In: *Hawaiian Archaeology* 9, pp. 123-132.
- Dye, Thomas S. and Ken Longenecker (2004). *Manual of Hawaiian Fish Remains Identification*. Special Publication 1. Honolulu: Society for Hawaiian Archaeology and Bishop Museum Press.
- Dye, Thomas S. (2000). "Effects of ^{14}C sample selection in archaeology: An example from Hawai'i". In: *Radiocarbon* 42.2, pp. 203-217.
- Dye, Thomas S. and H. David Tuggle (1998). "Land snail extinctions at Kalaeloa, O'ahu". In: *Pacific Science* 52.2, pp. 111-140.
- Dye, Thomas S. (1996). "Assemblage definition, analytic methods, and sources of variability in the interpretation of Marquesan subsistence change". In: *Asian Perspectives* 35, pp. 73-88.
- Dye, Thomas S. and William R. Dickinson (1996). "Sources of sand tempers in prehistoric Tongan pottery". In: *Geoarchaeology* 11, pp. 141-164.
- Dye, Thomas S. (1995). "Comparing ^{14}C histograms: An approach based on approximate randomization techniques". In: *Radiocarbon* 37.3, pp. 851-859.
- (1994a). "Apparent ages of marine shells: Implications for archaeological dating in Hawai'i". In: *Radiocarbon* 36, pp. 51-57.
 - (1994b). "Comment on Gordon, "Screen Size and Differential Faunal Recovery: A Hawaiian Example"". In: *Journal of Field Archaeology* 21, pp. 391-392.
 - (1994c). "Population trends in Hawai'i before 1778". In: *Hawaiian Journal of History* 28, pp. 1-20.
 - (1992). "The South Point radiocarbon dates 30 years later". In: *New Zealand Journal of Archaeology* 14, pp. 89-97.
- Dye, Thomas S. and Eric K. Komori (1992a). "A Pre-censal Population History of Hawai'i". In: *New Zealand Journal of Archaeology* 14, pp. 113-128.
- (1992b). "Computer programs for creating cumulative probability curves and annual frequency distribution diagrams with radiocarbon dates". In: *New Zealand Journal of Archaeology* 14, pp. 35-43.

- Dye, Thomas S. (1991). "A reputation unmade: J. F. G. Stokes's career in Hawaiian archaeology". In: *Heiau of the Island of Hawai'i*. Bishop Museum Bulletin in Anthropology 2. Edited and introduced by Tom Dye. Honolulu: Bishop Museum, pp. 3-20.
- Stokes, John F. G. (1991). *Heiau of the Island of Hawai'i: A Historic Survey of Native Hawaiian Temple Sites*. Bishop Museum Bulletin in Anthropology 2. Edited and introduced by Tom Dye. Honolulu: Bishop Museum.
- Dye, Thomas S. (1990a). "Marine turtle bones from an archaeological site in Polynesia yield reliable age determinations". In: *Radiocarbon* 32, pp. 143-147.
- (1990b). "The causes and consequences of a decline in the prehistoric Marquesan fishing industry". In: *Pacific production systems: Approaches to economic prehistory*. Ed. by Douglas E. Yen and J. M. J. Mummery. Occasional Papers in Prehistory 18. Canberra, AU: Department of Prehistory, Research School of Pacific Studies, The Australian National University, pp. 70-84.
- Dye, Thomas S. and Paul L. Cleghorn (1990). "Prehistoric use of the interior of Southern Guam". In: *Micronesica*, pp. 261-274.
- Dye, Thomas S. and David W. Steadman (1990). "Polynesian ancestors and their animal world". In: *American Scientist* 78, pp. 207-215.
- Yen, D. E. and J. M. J. Mummery, eds. (1990). *Pacific Production Systems: Approaches to Economic Prehistory*. Occasional Papers in Prehistory 18. Canberra, AU: Department of Prehistory, Research School of Pacific Studies, The Australian National University.
- Dye, Thomas S. (1989). "Tales of two cultures: Traditional historical and archaeological interpretations of Hawaiian prehistory". In: *Bishop Museum Occasional Papers* 29, pp. 3-22.
- Pregill, Gregory K. and Thomas S. Dye (1989). "Prehistoric extinction of giant iguanas in Tonga". In: *Copeia* 1989, pp. 505-508.
- Dye, Thomas S., ed. (1987a). *Marshall Islands Archaeology*. Pacific Anthropological Records 38. Honolulu: Anthropology Department, B. P. Bishop Museum.
- (1987b). "Social and Cultural Change in the Prehistory of the Ancestral Polynesian Homeland". PhD thesis. Yale University.
- Cleghorn, Paul L., Thomas S. Dye, Marshall I. Weisler, and John Sinton (1985). "A preliminary petrographic study of Hawaiian stone adze quarries". In: *Journal of the Polynesian Society* 94, pp. 235-251.
- Dye, Thomas S. (1983). "Fish and fishing on Niuatoputapu". In: *Oceania* 53, pp. 242-271.
- (1980). "The linguistic position of Niufo'ou". In: *Journal of the Polynesian Society* 89, pp. 349-357.
- Kirch, Patrick V. and Thomas S. Dye (1979). "Ethno-archaeology and the development of Polynesian fishing strategies". In: *Journal of the Polynesian Society* 88, pp. 53-76.

Archaeology Positions

2015 Instructor, Hawaiian and Pacific Islands Archaeology, University of Hawai'i at Mānoa

2008	Instructor, Assemblage Analyses in Archaeology, University of Hawaii at Mānoa
2004	Guest Lecturer, Bayesian Statistics for Archaeologists, University of Arizona, Tucson
1997-2001	Associate Archaeologist, Projects Manager, International Archaeological Research Institute, Inc., Honolulu
1997	Instructor, Historic Preservation Seminar, University of Hawai'i at Mānoa
1991-1997	O'ahu Island Archaeologist, Department of Land and Natural Resources, State of Hawaii
1987-1991	Associate Professor of Anthropology, Hawai'i Pacific University, Honolulu
1987	Research Associate, B. P. Bishop Museum, Honolulu
1984-1985	Associate Anthropologist, B. P. Bishop Museum, Honolulu
1977-1978	Staff Contract Archaeologist, B. P. Bishop Museum, Honolulu

Professional Memberships

Archaeology	Society for American Archaeology Society for Hawaiian Archaeology, Past President
History	Hawaiian Historical Society, Past President
Science	Sigma Xi
Software	Free Software Foundation

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