

REFERENCES

American Society of Mammalogists (ASM)

- n.d. *Guidelines for the Capture, Handling and Care of Mammals as approved by the American Society of Mammalogists*. Prepared by the Animal Care and Use Committee. Available at <http://www.mammalsociety.org/committees/commanimalcareuse/98acucguidelines.PDF>. Accessed June 7, 2007.

American Speech-Language-Hearing Association

- n.d. "Noise and Hearing Loss Prevention." Available online at: <http://www.asha.org/public/hearing/Noise/>.

American Veterinary Medical Association (AVMA)

- 2007 *Guidelines on Euthanasia*. h Formerly Report of the AVMA Panel on Euthanasia). Available at <http://www.avma.org/onlnews/javma/sep07/070915b.asp>. Accessed April 17, 2009.

Anderson, S.J. and C.P. Stone

- 1993 "Snaring to Control Feral Pigs *Sus scrofa* in a Remote Hawaiian Rain Forest." *Biological Conservation* 63:195–201.

Aplet, G., S. Anderson, and C. Stone

- 1991 "Association between Feral Pig Disturbance and the Composition of Some Alien Plant Assemblages in Hawai'i Volcanoes National Park." *Vegetation* 95:55–62.

Asia-Pacific Digital Library

- 2010 *Traditions of O'ahu: Stories of an Ancient Island*. Available online at: <http://apdl.kcc.hawaii.edu/~oahu/stories/koolauloa/kamapuaa1.htm>.

Atkinson, C.T. and D.A. LaPointe

- 2009 "Introduced Avian Diseases, Climate Change, and the Future of Hawaiian Honeycreepers." *Journal of Avian Medicine and Surgery* 23(1):53–63.

Avery, Christy

- 2009 *Volcano Ranch: An Environmental History of Kahuku Ranch*. On file at Hawai'i Volcanoes National Park Library. September 1, 2009.

Ayres, M.P. and M.J. Lombardero

- 2000 "Assessing the Consequences of Global Change for Forest Disturbance from Herbivores and Pathogens." *The Science of the Total Environment* 262:263-286.

Baldwin, P.H. and G.O. Fagerlund

- 1943 "The Effect of Cattle Grazing on Koa Reproduction in Hawai'i National Park." *Ecology* 24:118–122.

References

Baker, J.K.

- 1975 "The Feral Pig in Hawai'i Volcanoes National Park." *Transactions of the Western Section of The Wildlife Society* 11:74–80.

Baker, J.K. and D.W. Reeser

- 1972 *Goat Management Problems in Hawaii Volcanoes National Park. A History, Analysis, and Management Plan*. U.S. Department of the Interior, National Park Service. Office of the Chief Scientist. Washington, D.C.

Beckwith, M.

- 1981 *The Kumulipo: A Hawaiian Creation Chant*. Honolulu, Hawai'i: University of Hawai'i Press.

Belfield, T. and L.W. Pratt

- 2002 *Technical Report 130: Rare Plants of the Mauna Loa Special Ecological Area, Hawai'i Volcanoes National Park*. Pacific Cooperative Studies Unit. Department of Botany, University of Hawai'i at Mānoa (University of Hawai'i).

Benitez, D.M., T. Belfield, R. Loh, L. Pratt, and A.D. Christie

- 2008 *Inventory of Vascular Plants of the Kahuku Addition, Hawai'i Volcanoes National Park*. Technical Report 157. Pacific Cooperative Studies Unit.

Benning, T.L., D. LaPointe, C.T. Atkinson, and P.M. Vitousek

- 2002 "Interactions of Climate Change with Biological Invasions and Land Use in the Hawaiian Islands: Modeling the Fate of Endemic Birds Using a Geographic Information System." *Proceedings of the National Academy of Sciences* 99(22):14246–14249.

Bergin, B.

- 2004 *Loyal to the Land: The Legendary Parker Ranch, 750–1950*. Honolulu, Hawai'i: University of Hawai'i Press.

Big Island Invasive Species Committee (BIISC)

- 2010 Website. Available at <http://www.hawaiiinvasivespecies.org/iscs/biisc/> Accessed August 11, 2010.

Borne, R., Hawai'i Volcanoes National Park

- 2009 Personal Communication via telephone with Landon Vine, The Louis Berger Group, regarding Facilities Management and Maintenance Division, May 19, 2009.

Buck, M. G.

- 2003 *Year of the Hawaiian Forest*. State of Hawai'i Department of Land and Natural Resources (DLNR). Available at <http://www.state.hi.us/dlnr/dofaw/Year2003/DRAFTplan.htm>.

Burrows, C. M., C. L. Isaacs, K. Maly Thomas, and L.W. Pratt

- 2007 “Pua‘a (pigs) in Hawai‘i, from Traditional to Modern.” Available at [http://nature.org/wherewework/northamerica/states/Hawaii/files/ungulate science paper.pdf](http://nature.org/wherewework/northamerica/states/Hawaii/files/ungulate%20science%20paper.pdf).

Busby, P.E., P. Vitousek, and R. Dirzo

- 2010 “Prevalence of Tree Regeneration by Sprouting and Seeding along a Rainfall Gradient in Hawai‘i.” *Biotropica* 42:80–86.

Cachola-Abad, C. Kehau

- 2000 “The Evolution of Hawaiian Socio-Political Complexity: An Analysis of Hawaiian Oral Traditions.” Dissertation submitted to the University of Hawai‘i at Manoa, Hawai‘i.

California Department of Transportation (CALTRANS)

- 1998 *Technical Noise Supplement: A Technical Supplement to the Traffic Noise Analysis Protocol*. October 1998. Available at <http://www.dot.ca.gov/hq/env/noise/pub/Technical%20Noise%20Supplement.pdf>. Accessed July 21, 2009.

Campbell, K.J., G.S. Baxter, P.J. Murray, B.E. Coblenz, and C.J. Dolan

- 2006 “Development of a Prolonged Estrus Effect for Use in Judas Goats.” *Applied Animal Behaviour Science* 102 (2007):12–23.

Centers for Disease Control and Prevention (CDC)

- 2005 “Disease Listing, Leptospirosis, Update.” *CDC Bacterial, Mycotic Diseases*. National Center for Immunization and Respiratory Diseases: Division of Bacterial Diseases. October 12, 2005. Available at http://www.cdc.gov/ncidod/dbmd/diseaseinfo/leptospirosis_g.htm. Accessed August 13, 2009.

Cole, R.J., M.K. Koontz, R.K. Loh, and C.M. Litton

- 2012 Vegetation Recovery 16 Years after Feral Pig Removal from a Wet Hawaiian Forest. *Biotropica*, 44: 463–471.

Columbia Encyclopedia

- 2003 *Columbia Encyclopedia*. 6th edition. Available at <http://www.answers.com/topic/Hawai'i-island>. Accessed online June 2, 2009.

Cooray, R. G. and D. Mueller-Dombois

- 1981 “Feral Pig Activity.” *Island Ecosystem*. pp. 259-268. Biological organization in selected Hawaiian communities. D. Mueller-Dombois, K.W. Bridges, and H.L. Carson (eds). Hutshinson Ross Publishing Co., Stroudsburg, PA.

Council on Environmental Quality (CEQ)

- 1997 *Considering Cumulative Effects under the National Environmental Policy Act*. January 1997.

References

County of Hawai‘i

- 2005 *County of Hawai‘i General Plan*. Available online at:
<http://www.co.hawaii.hi.us/la/gp/2005/GeneralPlan2005.pdf>.

Cuddihy, L.W.

- 1984 *Effects of Cattle Grazing on the Mountain Parkland Ecosystem, Mauna Loa, Hawai‘i*. Honolulu (HI): Cooperative National Park Resources Studies Unit, University of Hawai‘i at Manoa, Department of Botany. PCSU Technical Report, 51.

Cuddihy, L.W., and C. P. Stone

- 1990 *Alteration of Native Hawaiian Vegetation, Effects on Humans, Their Activities and Introductions*. University of Hawai‘i Cooperative National Park Resources Studies Unit, Honolulu, Hawai‘i. pp 63–67.

Davis, C. J.

- 1970 Black twig stem borer threatens native trees. *Newsletter Hawaii. Bot. Soc.* 9: 38-39.

D’Antonio, C.M., J.T. Tunison, and R. Loh

- 2000 “Variation in Impact of Exotic Grass Fueled Fires on Species Composition Across an Elevation Gradient in Hawai‘i.” *Austral Ecology* 25: 507–522.

Diong, C. H.

- 1981 *A Portable Metal Box Trap for Live-capture of Feral Pigs*. Honolulu (Hawai‘i): Cooperative National Park Resources Studies Unit, University of Hawai‘i at Mānoa, Department of Botany. PCSU Technical Report 37.
- 1982 Population biology and management of the feral pig (*Sus scrofa* L.) in Kipahulu Valley, Maui. PhD dissertation, University of Hawai‘i, Honolulu.

Doty, M.S. and D. Mueller-Dombois

- 1966 “Atlas for Bioecology Studies in Hawai‘i Volcanoes National Park.” Hawaiian Botanical Science Paper No. 2. University of Hawai‘i.

Drake, D.R., and L.W. Pratt

- 2001 “Seedling Mortality in Hawaiian Rain Forest: The Role of Small-scale Physical Disturbance.” *Biotropica* 33:319–323.

Durst, M.

- n.d. “The Ili Aina of Keauhou: A historic resources study of the lower portion of the Ili Aina located within the District of Ka‘ū, Island of Hawai‘i.” Unpublished ms. National Park Service. Hawai‘i Volcanoes National Park, Hawai‘i.

Elanco Animal Health

- 2002 *Compudose 200*. Prepared by Elanco Animal Health. Version 1.2. April 2002.

- Ellis, W.
2004 *Journal of William Ellis*. Rutland, Vermont, and Tokyo, Japan: Charles E. Tuttle Company.
- Environmental Protection Agency (EPA)
1998 *Climate Change and Hawai‘i*. EPA 236-F-98-007e.
- Federal Highway Administration (FHWA)
1995 *Highway Traffic Noise Analysis and Abatement Policy and Guidance*. U.S. Department of Transportation Federal Highway Administration (FHWA), Office of Environment and Planning, Noise and Air Quality Branch, Washington, D.C. June 1995. 4 pp. Available online at <http://www.fhwa.dot.gov/environment/noise/polguide/polguid.pdf>.
- Foote, David, USGS Pacific Island Ecosystem Research Center
2009a Personal communication via email with Rhonda Loh, Hawai‘i Volcanoes National Park, regarding rare species at the park. August 7, 2009.
2009b Personal communication via email with Rhonda Loh, Hawai‘i Volcanoes National Park, regarding rare species at the park. October 2, 2009.
- Fornander, A.
1996 *An Account of the Polynesian Race: Its Origin and Migrations, and The Ancient History of the Hawaiian People to the Times of Kamehameha I*. Volume II. Trubner & company, republished by Mutual Publishing.
- Fraser, H.R., V. Parker-Geisman, G.R. Parish
2007 *Hawaiian Hoary Bat Inventory in National Parks on the Islands of Hawai‘i, Maui and Moloka‘i*. Technical Report 140. Pacific Cooperative Studies Unit, University of Hawai‘i at Mānoa.
- Freifelder, R., P.M. Vitousek, C.M. D’Antonio
1998 Microclimate Effects of Fire-Induced Forest/Grassland Conversion in a Seasonally Dry Hawaiian Woodlands.” *Biotropica* 30:286-297.
- Gale, J., Hawai‘i Volcanoes National Park
2009a Personal Communication via telephone with Landon Vine, The Louis Berger Group, regarding Interpretation Division, May 28, 2009.
2009b Personal Communication via telephone with Landon Vine, The Louis Berger Group, regarding Ungulates in interpretation division programs, June 26, 2009.
- Giambelluca, T.W., H.F. Diaz, and M.S.A. Luke
2008 “Secular Temperature Changes in Hawai‘i.” *Geophysical Research Letters* 35, L12702, doi: 10.1029/2008GL034377.
- Giambelluca, T.W. and M.S.A. Luke
n.d. Climate Change in Hawai‘i’s Mountains. *Cirmount*, pp. 13-18.

References

Graves, M. and D. Addison

- 1995 "The Polynesian Settlement of the Hawaiian Archipelago: Integrating Models and Methods in Archaeological Interpretation." *World Archaeology* 26(3).

Giffin, J. G.

- 1978 Ecology of the feral pig on the island of Hawaii. Pittman-Robertson Project W-15-3, Study II. Hawai'i Department of Land and Natural Resources, Division of Fish and Game. Honolulu, Hawai'i.

- 1982 Ecology of the mouflon sheep on Mauna Kea. State of Hawai'i, Department of Land and Natural Resources, Division of Forestry and Wildlife, Honolulu, Hawai'i.

Gruner D.S. and D. Foote

- 2000 *Management Strategies for Western Yellowjackets in Hawai'i*. Report to the Hawaii Secretariat for Conservation Biology, February 2000.

Handy, E.S. and E.G. Handy

- 1972 Native planters in old Hawaii: their life, lore, and environment. Bishop Museum Press, Honolulu, Hawai'i.

Harry, B.

- n.d. Personal communication re: elimination of feral sheep in 'Āinahou Ranch.

Hawaii Audubon Society

- 2005 *Hawai'i's Birds*. 6th edition. Hawai'i Audubon Society.

Hawai'i Conservation Alliance

- 2007 *Controlling Wild Sheep and Deer on Conservation Lands in Hawai'i*. Position Paper 2007-01.

Hawaiian Ecosystems at Risk Project (HEAR)

- 2010 *Invasive Species Information for Hawai'i and the Pacific*. Available at <http://www.hear.org>. Accessed November 8, 2010.

Heggie, T.W.

- 2005 "Reported Fatal and Non-Fatal Incidents Involving Tourists in Hawaii Volcanoes National Park." *Travel Medicine & Infectious Disease* 3(3):123-13.

Henke, L.A.

- 1929 *A Survey of Livestock in Hawai'i*. University of Hawai'i Research Publication 5. Honolulu, Hawai'i.

Hess, S.C., J.J. Jeffrey, D.L. Ball, and L. Babich

- 2006 "Efficacy of Feral Pig Removals at Hakalau Forest National Wildlife Refuge, Hawai'i." *Transactions of the Western Section of The Wildlife Society* 42:53-67.

Higashino, P.K., L.W. Cuddihy, S.J. Anderson, and C.P. Stone

- 1988 *Checklist of Vascular Plants of Hawai'i Volcanoes National Park*. Technical Report 64. Cooperative National Park Resources Studies Unit, University of Hawai'i at Mānoa, Department of Botany, Honolulu.

Hone, J. and C.P. Stone

- 1989 "A Comparison and Evaluation of Feral Pig Management in Two National Parks." *Wildlife Society Bulletin* 17:419–425.

Hu, D, C. Glidden, J.S. Lippert, L. Schnell, J.S. MacIvor, and J. Meisler

- 2001 "Habitat Use and Limiting Factors in a Population of Hawaiian Dark-Rumped Petrels on Mauna Loa, Hawai'i." *Studies in Avian Biology* No. 22:234-242. J.M. Scott, S. Conant, and C. Van Riper, III (eds.).

Hughes, R.F. and P.M. Vitousek

- 1993 "Barriers to Shrub Reestablishment Following Fire in the Seasonal Submontane Zone of Hawai'i." *Oecologia* 93:557-563.

Hughes, F., P.M. Vitousek, and T. Tunison

- 1991 "Alien Grass Invasion and Fire in the Seasonal Submontane Zone of Hawai'i." *Ecology* 72:743-746.

Hunt, T. and R. Holsen

- 1991 "An Early Radiocarbon Chronology for the Hawaiian Islands: A Preliminary Analysis." *Asian Perspectives* 30(1):147–161. Honolulu, Hawai'i: University of Hawai'i Press.

Interagency Aviation Management Council (IAMC)

- 2006 *Interagency Helicopter Operations Guide*. NFES 1885. March 2006. Available at <http://nifc.gov/ihog>. Accessed July 30, 2007.

Intergovernmental Panel on Climate Change (IPCC)

- 2007 *Climate Change 2007: Synthesis Report*. Contribution of Working Groups I, II, and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Core Writing Team, ed. R.K. Pachauri and A. Reisinger. Geneva, Switzerland: IPCC.

Jacobi, J.D.

- 1981 "Vegetation Changes in a Subalpine Grassland in Hawai'i Following Disturbance by Feral Pigs." Technical Report 41. Cooperative National Park Resources Studies Unit, University of Hawai'i at Manoa, Honolulu.

Juvik, S.P. and J.O. Juvik

- 1998 *Atlas of Hawai'i*. 3rd edition. University of Hawai'i Press, Honolulu.

Kamakau, S.

- 1991 "Tales and Traditions of the People of Old: Na Mo'olelo o ka Po'e Kahiko." Translated by M.K. Pukui and edited by D.B. Barrere. Honolulu, Hawai'i: Bishop Museum Press.

References

Kamehameha Schools

n.d. *Biography of Bernice Pauahi Bishop*. Available at <http://www.ksbe.edu/pauahi/bio.php>.

Katahira, L.K.

1980 "The Effects of Feral Pigs on a Montane Rain Forest in Hawai'i Volcanoes National Park." In *Proceedings of the Third Conference in Natural Sciences, Hawai'i Volcanoes National Park*, 173–175.

Katahira, L.K., P. Finnegan, and C.P. Stone

1993 "Eradicating Feral Pigs in Montane Mesic Habitat at Hawai'i Volcanoes National Park." *Wildlife Society Bulletin* 21:269–274.

Kauhi, Emma K.

1996 *He Mo'olelo no Kapa'ahu*. IX, 100 p. In Hawaiian. English translation published in companion volume with parallel title: *Story of Kapa'ahu*.

Keali'ikanaka'oleohaililani, K.

2009 *No Pele No Ko'u Akua La: A Brief Articulation of the Sacred Ecology and Geography of Pelehonuamea* (Draft).

Kemper, T. and R.M. Kamins

1993 *Islands in Transition: The Past, Present, and Future of Hawai'i's Economy*. Honolulu, Hawai'i: University of Hawai'i Press.

Kirch, P.V.

1985 *Feathered Gods and Fishhooks: An Introduction to Hawaiian Archaeology and Prehistory*. Honolulu, Hawai'i: University of Hawai'i Press.

Kormanoff, C., and H. Shaw

2000 "Drowning in Noise: Noise Costs of Jet Skis in America: A Report for the Noise Pollution Clearinghouse." Available at <http://www.nonoise.org/library/drowning/drowning.htm>.

Kueffer, C. and L. Loope

2009 *Prevention, Early Detection and Containment of Invasive, Non-Native Plants in the Hawaiian Islands: Current Efforts and Needs*. Pacific Cooperative Studies Unit Technical Report 166, University of Hawai'i at Mānoa, Department of Botany, Honolulu, Hawai'i.

Laitinen, D.

2006a *Community Wildfire Protection Plan for Ocean View, Hawai'i*. September 2006.

2006b *Community Wildfire Protection Plan for Volcano, Hawai'i*. September 2006.

Laney, L.

2008 "Economic Forecast: Big Island Edition 2008–2009." Published by First Hawaiian Bank. Available at <http://www.fhb.com/pdf/OahuEconForecast08.pdf>. Accessed June 16, 2009.

- Langlas, C.
- 2003a *Native Hawaiian Use of Hawai‘i Volcanoes National Park: A Historical and Ethnographic Overview.*
 - 2003b *Ethnographic Studies at Hawai‘i Volcanoes National Park.*
- LaRosa, A.M.
- 1992 “The Status of Banana Poka in Hawai‘i.” In C. P. Stone, C. W. Smith, and J. T. Tunison (eds), *Alien Plant Invasions in Native Ecosystems of Hawai‘i: Management and Research*, 271–299. University of Hawai‘i Cooperative National Park Resources Studies Unit, Honolulu.
- Lawson, S., K. Hockett, B. Kiser, N. Reigner, A. Ingram, J. Howard, and S. Dymond
- 2007 *Social Science Research to Inform Soundscape Management in Hawai‘i Volcanoes National Park.* Final Report. Department of Forestry, College of Natural Resources, Virginia Polytechnic Institute and State University. December 2007.
- Leonard, P., U.S. Fish and Wildlife Service
- 2009 Personal Communication via letter with Cynthia Orlando, Hawai‘i Volcanoes National Park, regarding threatened and endangered species technical assistance for the plan/environmental impact statement to protect and restore native ecosystems by managing non-native ungulates. May 19, 2008.
- Lipp, C.C.
- 1994 Ecophysiological and Community-level Constraints to the Invasion of *Myrica faya*, an Alien Tree in Hawai‘i Volcanoes National Park. Dissertation, University of Hawai‘i, Honolulu.
- Loh, Rhonda – Hawai‘i Volcanoes National Park
- 2009a Personal communication by email to Dan Niosi of the Louis Berger Group, Inc., regarding agricultural lands adjacent to the park. July 17, 2009.
 - 2009b Personal communication by email to Dan Niosi of the Louis Berger Group, Inc., regarding cost estimates of conducting the wildlife management program. August 18, 2009.
 - 2010a Personal communication with Landon Vine, via e-mail, April 29, 2010 regarding Budget for Natural Resources Division. April 29, 2010.
 - 2010b Personal communication with Landon Vine, via telephone. April 20, 2010 regarding Budget for Natural Resources Division. April 20, 2010.
 - 2012 Personal communication with Steven C. Hess, via email, September 20, 2012, regarding a two year telemetry study of mouflon. September 20, 2012
- Loh, R.K. and S. McDaniel
- 2010 “Evaluating Fire Use To Manage Pili Grasslands At Hawai‘i Volcanoes National Park– Adapting Traditional Methods To Solving Modern Problems.” Hawaii Conservation Conference, Honolulu HI, July 2010.

References

Loh, Rhonda, and J. T. Tunison

- 1999 *Vegetation Recovery Following Pig Removal in 'Ōla'a-Koa Rain Forest Unit, Hawai'i Volcanoes National Park*. Technical Report 123. Cooperative Parks Resources Studies Unit. University of Hawai'i, Honolulu.
- 2009 *Long Term Management of Invasive Plant Species in Special Ecological Areas at Hawai'i Volcanoes National Park—A Review of the Last 20 Years, or Where Do We Go From Here?* Pp 33-35 in Kueffer, C. and L. Loope (eds.) *Prevention Early Detection and Containment of Invasive, Non-Native Plants in the Hawaiian Islands: Current Efforts and Needs*. Pacific Cooperative Studies Unit Technical Report 166, University of Hawai'i at Manoa, Department of Botany, Honolulu, HI.

Loh, Rhonda, T. Belfield, and D. Benitez

- 2005 *Koa Recovery – 16 Month Summary*. May 20. Hawai'i Volcanoes National Park, Natural Resources Management.

Loh, R.K., S. McDaniel, M. Schultz, A. Ainsworth, D. Benitez, D. Palumbo, K. Smith, J. T. Tunison, and M. Vaidya

- 2007 *Rehabilitation of Seasonally Dry 'Ōhi'a Woodlands and Mesic Koa Forest following the Broomsedge Fire, Hawai'i Volcanoes National Park*. Technical Report 147. Pacific Cooperative Studies Unit, University of Hawai'i at Mānoa, Botany Department, Honolulu, Hawai'i. 21 pp.

Loh, R., A. Ainsworth, J. T. Tunison, and C. D'Antonio

- 2009 *Testing Native Species Response to Fire: A First Step towards Building Fire-resilient Native Plant Communities at Hawai'i Volcanoes National Park*. Technical Report No. 167. Pacific Cooperative Studies Unit, University of Hawai'i, Honolulu, Hawai'i. 30 pg.

Loope, L.L. and T.W. Giambelluca

- 1998 "Vulnerability of Island Tropical Montane Cloud Forests to Climate Change, with Special Reference to East Maui, Hawai'i." *Climatic Change* 39:503–517.

Loope, L. L., and P. G. Scowcroft

- 1985 "Vegetation Response within Exclosures in Hawai'i: A Review." In C.P. Stone and J.M. Scott (eds), *Hawai'i's Terrestrial Ecosystems: Preservation and Management*, 377–399. University of Hawai'i Cooperative National Park Resources Studies Unit, Honolulu.

Loope, L. L., A. C. Medeiros, and B. H. Gagne.

- 1991 *Recovery of Vegetation of a Montane Bog following Protection from Feral Pig Rooting*. Technical Report 77. Cooperative Parks Resources Studies Unit. University of Hawai'i, Honolulu.

Magnacca, K.N., D. Foote, and P.M. O'Grady

- 2008 "A Review of the Endemic Hawaiian Drosophilidae and Their Host Plants." *Zootaxa* 1728:1–58.

- Magno, Talmadge, Hawai'i Volcanoes National Park
- 2009 Personal Communication via telephone with Landon Vine, The Louis Berger Group, regarding the Protection Division at Hawai'i Volcanoes National Park, May 26, 2009.
- Maher, R.C.
- 2006 *Summary of Gunshot Acoustics*. Montana State University. April 4, 2006. Available at http://www.microflown.com/data/SSA_maher_aac_0406.pdf. Accessed August 10, 2009.
- 2007 *Acoustical Characterization of Gunshots*. April 2007. Available at http://www.microflown.com/data/SSA_maher_ieesafe_0407_109-113.pdf. Accessed August 10, 2009.
- Maryland Department of Agriculture
- 2009 *Mosquitoes and Disease*. Maryland Department of Agriculture Mosquito Control.
- Matson, P.
- 1990 "Plant-Soil Interactions in Primary Succession at Hawai'i Volcanoes National Park." *Oecologia* 85:241-246.
- McCusker, V.
- 2007 Personal Communication with Lora Gale at BRMD-NPS.
- McDaniel S., R.K. Loh. S. Dale, K. Smith, and M. Vaidya
- 2008 *Rehabilitation of 'ōhi'a-swordfern (Metrosideros polymorpha-Nephrolepis multiflora) woodlands following the Kupukupu Fire, Hawai'i Volcanoes National Park*. Technical Report 160. Pacific Cooperative Studies Unit, University of Hawai'i, Honolulu, HI.
- McDaniel S., R.K. Loh. S. Dale, and K. Yanger
- 2011 *Experimental Restoration of Mesic and Wet Forest in Former Pasture, Kahuku Unit, Hawai'i Volcanoes National Park*. Technical Report No. 175. Pacific Cooperative Studies Unit, University of Hawai'i, Honolulu, Hawai'i. 26pp.
- McDaniel S. and R. Ostertag
- 2009 Strategic Light Manipulation as a Restoration Strategy to Reduce Alien Grasses and Encourage Native Regeneration in Hawaiian Mesic Forest. *Applied Vegetation Science* 13: 280-290.
- Merlin, M. D., and J. O. Juvik
- 1992 "Relationships among Native and Alien Plants on Pacific Islands with and without Significant Human Disturbance and Feral." Pp. 597-624 in *Alien Plant Invasions in Native Ecosystems of Hawaii: Management and Research*, C. P. Stone, C. W. Smith, and J. T. Tunison, eds. University of Hawai'i Cooperative National Park Resources Studies Unit, Honolulu.

References

Michael Minor and Associates

- n.d. "Traffic Noise Background Information." Available at http://www.drnoise.com/PDF_files/Traffic%20Noise%20Primer.pdf.

Mitchell J., W. Dorney, R. Mayer, and J. McIlroy

- 2009 "Migration of feral pigs (*Sus scrofa*) in rainforest of north Queensland: fact or fiction. *Wildlife Research* 36(2)110-116.

Moniz-Nakamura, J.

- n.d. *Kealakomowaena: Life on a Lava Landscape*. In preparation. Hawai'i Volcanoes National Park, Cultural Resources Management.
- 2010 Personal Communication between Jadelyn Moniz-Nakamura and the Louis Berger Group, regarding the current state of archeological resources.

Morris, D. K.

- 1967 The history of the native plant propagation and reintroduction program in Hawai'i Volcanoes National Park. An unpublished report prepared for the National Park Service.
- 1981 "Fire in Tropical Ecosystems." Pp 502-520 in *Fire Regimes and Ecosystem Properties*. Procedure of the Conference, December 11-15, 1978. Honolulu, Hawai'i. H.A. Mooney, T.M. Bonnicksen, N.L. Christensen, J.E. Lotan, and W.A. Reiners (eds). U.S. Department of Agriculture, General Technical Report. WO-26.

Mueller-Dombois, D. and F.R. Fosberg

- 1974 *Vegetation Map of Hawai'i Volcanoes National Park*. Technical Report No. 4. Cooperative National Park Resources Studies Unit, University of Hawai'i, at Manoa, Honolulu.
- 1981 Fire in tropical ecosystems. Pp 502-520 In *Fire Regimes and Ecosystem Properties*. Procedure of the Conference, December 11-15, 1978. Honolulu, Hawaii. H.A. Mooney, T.M. Bonnicksen, N.L. Christensen, J.E. Lotan, and W.A. Reiners (eds). U.S. Dept. of Agriculture, General Technical Report. WO-26

Nadkarni, N.M. and R. Solano

- 2002 "Potential Effects of Climate Change on Canopy Communities in a Tropical Cloud Forest: An Experimental Approach." *Oecologia* 131(4):580-586.

National Audubon Society (Audubon)

- 2007 Audubon WatchList 2007: Hawaiian Species. Red List Species – Hawaii 2007. Available on line at: <http://web1.audubon.org/science/species/watchlist/hawaiianSpecies.php>.

National Marine Fisheries Service and United States Fish and Wildlife Service (NMFS and USFWS)

- 1998 *Recovery Plan for the U.S. Pacific Population of the Hawksbill Turtle*. U.S. Fish and Wildlife Service, Portland, Oregon.

National Park Service (NPS)

- n.d.a *Hawai'i Volcanoes National Park General Management Plan*. In preparation.

- n.d.b *Hawai‘i Volcanoes National Park Fact Sheet*. Available at <http://www.nps.gov/archive/havo/manage/2004factsupdate.pdf>.
- 1972 *Goat Management Problems in Hawai‘i Volcanoes National Park*. Natural Resources Report Number 2. U.S. Department of the Interior.
- 1974 *Hawai‘i Volcanoes National Park Natural Resources Management Plan Final Environmental Statement*. FES 74–28.
- 1975a *Hawai‘i Volcanoes National Park Master Plan*.
- 1975b *Final Environmental Statement for the Proposed Wilderness Areas at Hawai‘i Volcanoes National Park* (FES 75-55).
- 1985 *Statement for Management Hawai‘i Volcanoes National Park*.
- 1986 *Hawai‘i Volcanoes National Park Natural Resources Management Plan*.
- 1991 *Natural Resource Management Guidelines*, NPS DO-77. U.S. Government Printing Office, Washington, D.C.
- 1993 *Environmental Assessment to Construct Pig-proof Fence, East Rift, Hawai‘i Volcanoes National Park*.
- 1997a *Environmental Assessment to Construct Fences and Control Feral Pigs in ‘Ōla‘a Tract, Hawai‘i Volcanoes National Park*.
- 1997b *Environmental Assessment to Construct Fences and Control Feral Goats and Mouflon Sheep on Mauna Loa, Hawai‘i Volcanoes National Park*.
- 1998 *Director’s Order 28: Cultural Resource Management Guideline*. Office of Policy. Washington, D.C. June 11, 1998. Available at <http://www.nps.gov/policy/DOrders/DOrder28.html>.
- 1999a *Hawai‘i Volcanoes National Park Resource Management Plan*.
- 1999b *Environmental Assessment to Construct Pig-proof Fence, East Rift, Hawai‘i Volcanoes National Park*.
- 1999c *Director’s Order 41: Wilderness Preservation and Management*. July/August 1999. Available: <http://home.nps.gov/applications/npspolicy/DOrders.cfm>.
- 2000 *Director’s Order 47: Soundscape Preservation and Noise Management*. December 1, 2000. Available at <http://www.nps.gov/policy/DOrders/DOrder47.html>. Accessed December 15, 2008.
- 2001a *Director’s Order 12: Conservation Planning, Environmental Impact Analysis and Decision-making Handbook*. National Park Service, Washington D.C. Effective Date: January 8, 2001, Sunset Date: January 8, 2005. Located at <http://www.nps.gov/policy/DOrders/DOrder12.html>.

References

- 2001b *Environmental Assessment to Construct Pig-proof Fence to Protect Nēnē Habitat, 'Āinahou, Hawai'i Volcanoes National Park.*
- 2003a The National Park Service Biodiversity Database. Secure online version. <https://science1.nature.nps.gov/npspecies/web/main/start> (park list; accessed August 1, 2003).
- 2003b “NPS: Nature and Science, Natural Sounds, Sources of Human-caused Sounds in National Parks.” Last updated August 3, 2007. Available at <http://www.nature.nps.gov/naturalsounds/sources/>. Accessed June 5, 2009.
- 2004a “NPS: Nature and Science, Natural Sounds, Sources of Human-caused Sounds in National Parks.” Last updated August 3, 2007. Available at <http://www.nature.nps.gov/naturalsounds/sources/>. Accessed June 5, 2009.
- 2004b *Hawai'i Volcanoes National Park Wildland Fire Management Plan Environmental Assessment.* November.
- 2004c *Cultural Landscapes Inventory, 'Āinahou Ranch House and Gardens, Hawai'i Volcanoes National Park.*
- 2004d *Ala Kahakai National Historic Trail Comprehensive Management Plan/Environmental Impact Statement.* Ala Kahakai National Historic Trail Planning Team. April 6, 2004.
- 2005a *Hawai'i Volcanoes National Park Fire Management Plan.*
- 2005b *FY 2005 Ungulate Control Summary.* Hawai'i Volcanoes National Park.
- 2006a *Kahuku: An Interim Operating Plan.* Hawai'i Volcanoes National Park. August 2006.
- 2006b *NPS Management Policies 2006.* U.S. Department of the Interior, National Park Service. Washington, D.C.
- 2006c *FY 2006 Ungulate Control Summary.* Hawai'i Volcanoes National Park.
- 2006d *Cultural Landscape Inventory, Crater Rim Historic District, Hawai'i Volcanoes National Park.*
- 2006e Cultural Landscape Inventory, Kīlauea Administration and Employee Housing Historic District, Hawai'i Volcanoes National Park.
- 2006f *Rare Plant Species in Hawai'i Volcanoes National Park.* Draft by Linda Pratt; first drafted in 2001 and updated in 2004, 2005, and 2006.
- 2006g “Hawai'i Volcanoes National Park: Animals.” Last updated July 25, 2006. Available at <http://www.nps.gov/havo/naturescience/animals.htm>. Accessed June 2, 2009.
- 2006h “Hawai'i Volcanoes National Park: Natural Features & Ecosystems.” Last updated July 25, 2006. Available at <http://www.nps.gov/havo/naturescience/naturalfeaturesandecosystems.htm>. Accessed June 2, 2009.

- 2006i *Natural Resource Division Annual Report to the Superintendent*. Hawai‘i Volcanoes National Park.
- 2007a *Draft Overview of Exotic Ungulate Management in Hawai‘i Volcanoes National Park*.
- 2007b *FY 2007 Ungulate Control Summary*. Hawai‘i Volcanoes National Park.
- 2007c “Hawai‘i Volcanoes National Park.” Last updated August 3, 2007. Available at <http://www.nps.gov/havo/planyourvisit/outdooractivities.htm>. Accessed June 4, 2009.
- 2007d Technical Guidance for National Park Service. Strategic Goals FY2008-2012. June 2007.
- 2008a *Superintendent Report FY08 for Natural Resource Management*. Provided July 17, 2009.
- 2008b “Hawai‘i Volcanoes National Park: Birds.” Last updated August 19, 2008. Available at <http://www.nps.gov/havo/naturescience/birds.htm>. Accessed June 2, 2009.
- 2008c *2008 Superintendent’s Compendium*. U.S. Department of the Interior, National Park Service, Hawai‘i Volcanoes National Park, Hawai‘i 96718. June 20, 2008. Available at http://www.nps.gov/havo/parkmgmt/upload/havo_manage_compendium_2008final.pdf. Accessed August 13, 2009.
- 2008d *Master Plan (1975)—The Park and Its Resources*. Last updated March 7, 2008. Available at http://www.nps.gov/havo/parkmgmt/mgmtdocs_master_resources.htm. Accessed June 4, 2009.
- 2008e *Public Scoping Comment Analysis Report: Protecting & Restoring Native Ecosystems by Managing Non-Native Ungulates Plan/EIS*. October 2008.
- 2009a “Hawai‘i Volcanoes National Park: Plan Your Visit.” Available online at <http://www.nps.gov/havo/planyourvisit/index.htm>. Accessed May 21, 2009.
- 2009b National Park Service Public Use Statistics Office. Available online at <http://www.nature.nps.gov/stats/index.cfm>. Accessed May 21, 2009.
- 2009c “NPS: Nature and Science: Natural Sounds.” Available at <http://www.nature.nps.gov/naturalsounds/>. Accessed February 16, 2009.
- 2009d *Hawai‘i Volcanoes National Park General Management Plan Newsletter #1*.
- 2009e Park staff comments on Hawai‘i Volcanoes National Park First Internal Draft EIS. Received (by The Louis Berger Group, Inc.) from Hawai‘i Volcanoes National Park October 9, 2009.
- 2009f *Archeological Sites Management Information System (ASMIS)*. Accessed through National Park Service personnel. May 25, 2009.
- 2009g Safety Management Information Systems Data 2004–2008. Provided on August 13, 2009.
- 2009h “Ali Kahakai National Historic Trail.” Available at <http://www.nps.gov/alka/>. Accessed June 15, 2009.

References

- 2009i “Hawai‘i Volcanoes National Park: Turtles.” Last updated May 4, 2009. Available at <http://www.nps.gov/havo/naturescience/turtles.htm>. Accessed June 2, 2009.
- 2009j “Hawai‘i Volcanoes National Park: Species of Concern List.”
- 2009k “Hawai‘i Volcanoes: People.” Available at <http://www.nps.gov/havo/historyculture/people.htm>. Accessed May 25, 2009.
- 2010a *Hawai‘i Volcanoes National Park Foundation Statement*. January 15, 2010.
- 2010b Frequency and Duration of Management Actions for Non-Native Ungulates at Hawai‘i Volcanoes National Park. Sent by Rhonda Loh via email on June 8, 2010.
- 2010c *National Park Service Climate Change Response Strategy*. National Park Service Climate Change Response Program, Fort Collins, Colorado.
- 2011 Director’s Order #12: Conservation Planning, Environmental Impact Analysis, and Decision-Making. Effective Date: 10/5/2011.

National Parks Conservation Association (NPCA)

- 2008 *Hawai‘i Volcanoes National Park: A Resource Assessment*. Prepared by the National Parks Conservation Association Center for the State of the Parks.® July 2008.

Natural Areas Reserves System Commission

- 1997 *Management Policies of the Natural Area Reserves System*. May 23. Available at <http://www.dofaw.net/nars/files/NARSpolicy.doc>.

NatureServe

- 2009 NatureServe Explorer: An online encyclopedia of life (web application). Available on line at <http://www.natureserve.org/explorer>. Last updated February 6, 2009. Last accessed: June 10, 2009.

Newell’s Shearwater (NESH) Working Group

- 2005 *Draft Newell’s Shearwater Five-Year Work Plan*. October 2005.

‘Ōla‘a-Kīlauea Management Group

- 1999 *‘Ōla‘a-Kīlauea Management Area Natural Resources Management Plan*.

‘Ōla‘a-Kīlauea Partnership

- 2007 *North Kona Protective Fencing Project*. North Kona District, Island of Hawai‘i. June 2007.

PBR Hawaii

- 2009 EIS Preparation Notice: Kahuku Villages. Prepared for: Nani Kahuku ‘Āina, LLC.

Peck, R.W., P.C. Banko, M. Schwarzfeld, M. Euaparadorn, and K.W. Brinck

- 2008 “Alien Dominance of the Parasitoid Wasp Community Along an Elevation Gradient on Hawai‘i Island.” *Biological Invasions* (publ. online 6 Feb 2008).

Plant Extinction Prevention Program (PEPP)

2009 Personal communication to Rhonda Loh, October 28, 2009.

Pratt, L.W., L.L. Abbott, and D.K. Palumbo

1999 *Technical Report 124: Vegetation above a Feral Pig Barrier Fence in Rain Forests of Kīlauea's East Rift, Hawai'i Volcanoes National Park*. Pacific Cooperative Studies Unit. Department of Botany, University of Hawai'i at Mānoa (University of Hawai'i). Available online at <http://scholarspace.manoa.hawaii.edu/handle/10125/7313>. 88 pp.

Pratt, L.W., T.K. Pratt, D. Foote, P.M. Gorresen

2011 *Rare and Endangered Species of Hawai'i Volcanoes National Park: Endangered, Threatened, and Rare Animal, Plant, and Community Handbook*. Technical Report HCSU-025. University of Hawai'i Cooperative Studies Unit, Hilo, Hawai'i.

Puna Community

2008 *Puna Community Development Plan*. September 2008. Located at http://www.herc.info/community-planning/community-development-plans/puna/draft-plan-recommendations/FINALCDP_9-3-08%20colorohia.pdf.

Quiseng, Christopher L.

2008 *Kahuku Inventory Survey 2004–2005: An Archeological Report on the Phase I Kahuku–'Āinapō Trail Inventory (2004) and Phase II Transect Reconnaissance (2005)*. Publications in Anthropology #11, National Park Service, Pacific Island Cluster, Kahuku Management Unit. April 2008.

Ralph, C.J., and B.D. Maxwell

1984 "Relative Effects of Human and Feral Hog Disturbance on a Wet Forest in Hawai'i." *Biological Conservation* 30:291–303.

Root, T.L., J.T. Price, K.R. Hall, S.H. Schneider, C. Rosenzweig, and J.A. Pounds

2003 "Fingerprints of Global Warming on Wild Animals and Plants." *Nature* 421:57–60.

Rubinoff, D. and W.P. Haines

2006 *Hyposmocoma molluscivora* Description. *Science* 10(311):1377. March 2006.

Salbosa, Lasha-Lynn and Dr. Christopher Lepczyk

2009 Analysis of feral pig (*Sus scrofa*) movement in a Hawaiian forest ecosystem using GPS satellite collars. Available from Nature Precedings <<http://dx.doi.org/10.1038/npre.2009.3903.1>> (2009).

Schuster, Laura, Hawai'i Volcanoes National Park

2009 Personal Communication via telephone with Landon Vine, The Louis Berger Group, RE: Cultural Resources Division, May 27, 2009.

References

Scowcroft, P. G.

- 1983 "Tree Cover Changes in Māmane (*Sophora chrysophylla*) Forests Grazed by Sheep and Cattle." *Pacific Science* 37:109–119.

Scowcroft, P.G. and C.E. Conrad

- 1992 "Alien and Native Plant Response to Release from Feral Sheep Browsing on Mauna Kea." In C.P. Stone, C.W. Smith, J.T. Tunison (eds), *Alien Plant Invasion in Hawai'i: Management and Research in Native Ecosystems*, 625–665. University of Hawai'i Press, Honolulu, Hawai'i.

Scowcroft, P. G., and J. G. Giffin

- 1983 "Feral Herbivores Suppress the Regeneration of Māmane and Other Browse Species on Mauna Kea, Hawai'i." *Journal of Range Management* 36:638–645.

Scowcroft, P. G., and H. F. Sakai

- 1983 "Impacts of Feral Herbivores on Māmane Forests of Mauna Kea, Hawai'i: Bark Stripping and Diameter Class Structure." *Journal of Range Management* 36:495–498.

Seward, N.W., K.C. VerCauteren, G.W. Witmer, and R.M. Engeman

- 2003 *Feral Swine Impacts on Agriculture and the Environment. USDA/Wildlife Services, National Wildlife Research Center.* Available at http://www.sheepusa.org/index.phtml?page=site/news_details&nav_id=aed71589d05feb800869ebe0f45c7e94. Accessed May 21, 2009.

Simberloff, D.

- 2000 "Global Climate Change and Introduced Species in United States Forests." *Science of the Total Environment* 262:253–261.

Simons, T.R., and C.N. Hodges

- 1998 "Dark-rumped Petrel" in *The Birds of North America*, No. 13 (A. Poole and F. Gill, eds.). Academy Natural Sci., Philadelphia, and Amer. Ornith. Union, Washington, D. C.

Smith, C.W.

- 1985 "Impact of Alien Plants on Hawai'i's Native Biota." in *Hawai'i's Terrestrial Ecosystems: Preservation and Management*. 180-250. C. P. Stone and J. M Scott eds. Cooperative National Park Resources Studies Unit, University of Hawai'i, Honolulu, HI.

Spatz, G.L., and D. Mueller-Dombois

- 1973 "The Influence of Feral Goats on Koa Tree Reproduction in Hawai'i Volcanoes National Park." *Ecology* 54:870–876.
- 1975 "Succession Patterns after Pig Digging in Grassland Communities on Mauna Loa, Hawai'i." *Phytocoenologia* 3(2/3):346–373.

State of Hawai'i Department of Agriculture (HDOA)

- 2010 *Plant Pest Control*. Available at <http://hawaii.gov/hdoa/pi/ppc>. Accessed August 11, 2010.

State of Hawai‘i Department of Business, Economic Development and Tourism

- 2009 Monthly Economic Indicators. Available at http://Hawaii'i.gov/dbedt/info/economic/data_reports/mei. Accessed June 2, 2009.

State of Hawai‘i Department of Land and Natural Resources (HDLNR)

- n.d.a Division of Forestry and Wildlife Management Guidelines Draft Version. Available at: <http://hawaii.gov/dlnr/dofaw/guidelines/game-management>.
- n.d.b Projects on Hawai‘i Island. Available at <http://hawaii.gov/dlnr/dofaw/rpc/projects-on-hawaii-island>. Accessed July 21, 2009.
- n.d.c DOFAW Resource Management Guidelines: Island of Hawai‘i Vegetation Guidelines. Available online at: <http://hawaii.gov/dlnr/dofaw/guidelines/MG%20info%20sheet.Hawaii.pdf>.
- 1975 *Ecology of the Feral Sheep on Mauna Kea*. Pittman-Robertson. Project No. W-15-5, Study No. XI. 1972–1975. Department of Land and Natural Resources Division of Game.
- 1979 *Ecology of the Mouflon Sheep on Mauna Kea*. Pittman-Robertson. Project No. W-17-R, Study No. R-III. 1975-1979. Department of Land and Natural Resources Division of Forestry and Wildlife.
- 1989 *Pu‘u Maka‘ala Natural Area Reserve Management Plan*. Prepared by the State of Hawai‘i Department of Land and Natural Resources, Division of Forestry and Wildlife. Available at <http://www.dofaw.net/nars/files/PuumakaMgmtPlan.doc>.
- 1992a *Kahauale‘a Natural Area Reserve Management Plan*. Prepared by the State of Hawai‘i Department of Land and Natural Resources, Division of Forestry and Wildlife. Available at <http://www.dofaw.net/nars/files/kahau92plan.doc>.
- 1992b *Manukā Natural Area Reserve Management Plan*. 1992.
- 2002 *Kīpāhoehoe Natural Area Reserve Management Plan*. 2002.
- 2003 *Wao Akua*. Division of Forestry and Wildlife, Department of Land and Natural Resources, State of Hawai‘i.
- 2005a *Hawai‘i Comprehensive Wildlife Conservation Strategy*. State of Hawai‘i Department of Land and Natural Resources Division of Forestry and Wildlife. Available at <http://www.state.hi.us/dlnr/dofaw/cwcs/>.
- 2005b Hawaii’s Comprehensive Wildlife Conservation Strategy. Found at: http://www.state.hi.us/dlnr/dofaw/cwcs/Conservation_need.htm#Species. Accessed January 27, 2010.
- 2005c *Assessments of Ecosystem Recovery Resulting from Mitigation Efforts Following Logging Activity on the Lands of Kahuku, South Kona. June 24, 2005*. Department of Land and Natural Resources Division of Forestry and Wildlife. Honolulu, Hawai‘i.

References

- 2007 *Technical Report No. 07-01 Review of Methods and Approach for Control of Non-native Ungulates in Hawai'i*. Department of Land and Natural Resources, Division of Forestry and Wildlife.
- 2009 *Pu'u Wa'awa'a Biological Assessment*. Pu'u Wa'awa'a, North Kona, Hawai'i. State of Hawai'i, Department of Land and Natural Resources, Division of Forestry and Wildlife. Revised January 2009. Available at http://www.state.hi.us/dlnr/dofaw/pubs/PWW_biol_assessment.pdf.
- Stephens, R. M., S. C. Hess, and B. Kawakami, Jr.
- 2008 "Controlling Mouflon Sheep at the Kahuku Unit of Hawai'i Volcanoes National Park." *Proceedings of the Vertebrate Pest Conference* 23:304–309.
- Stone, C.P., and L.L. Loope
- 1987 "Reducing Negative Effects of Introduced Animals on Native Biota in Hawai'i: What Is Being Done, What Needs Doing, and the Role of National Parks." *Environmental Conservation* 14:245–258.
- Stone, C.P., and L.W. Pratt
- 2007 *Hawai'i's Plants and Animals: Biological Sketches of Hawai'i Volcanoes National Park*. 2nd edition. Hawai'i Natural History Association. Hawai'i.
- Stone, C.P., L.W. Cuddihy, and J.T. Tunison.
- 1992 "Responses of Hawaiian Ecosystems to Removal of Feral Pigs and Goats." In C.P. Stone, C.W. Smith, and J.T. Tunison (eds), *Alien Plant Invasions in Native Ecosystems of Hawai'i*, 666–704. University of Hawai'i, Cooperative National Park Resources Studies Unit.
- Stone, C. P., P. K. Higashino, L. W. Cuddihy, and S. J. Anderson
- 1991 *Preliminary Survey of Feral Ungulate and Alien and Rare Plant Occurrence on Hakalau Forest National Wildlife Refuge*. Technical Report 81. University of Hawai'i Cooperative National Park Resources Studies Unit, Honolulu.
- Stratton, L.
- 1996 *The Impact and Spread of Rubus Ellipticus in Ola'a Forest Tract Hawai'i Volcanoes National Park*. Technical Report No. 107. University of Hawai'i, Cooperative National Park Resources Studies Unit.
- Stynes, D.J.
- 2008 *National Park Visitor Spending and Payroll Impacts, 2007*. National Park Service, Social Science Program and Michigan State University, Department of Community, Agriculture, Recreation and Resource Studies. September 2008.
- Swift, R. and E. Burt-Toland
- 2009 *Surveys of Procellariiform Seabirds at Hawai'i Volcanoes National Park, 2001–2005*. Technical Report 163. Pacific Cooperative Studies Unit, University of Hawai'i at Mānoa.

Taylor, D. and C.P. Stone

- 1986 “Controlling Feral Pigs in Hawaii Volcanoes National Park.” *Conference of Scientific Research of National Parks* 4: 193.

The Nature Conservancy (TNC)

- n.d. *Forest Recovery Project*. Available at <http://www.nature.org/wherework/northamerica/states/hawaii/forest/art21965.html>.
- 2003 “Public Awareness Report Calls for New Era of Public–Private Cooperation and Investment to Save Hawai‘i’s Native Forests.” April 22, 2003. Available at <http://www.nature.org/wherework/northamerica/states/hawaii/press/press1163.html>.
- 2005 “Mauna Loa Proposed as Site for World-Class Trail System.” The Nature Conservancy in Hawai‘i press release. December 8, 2005. Available at <http://www.nature.org/wherework/northamerica/states/hawaii/projects/>. Accessed September 3, 2010.
- 2006 *An Ecoregional Assessment of Biodiversity Conservation for the Hawaiian High Islands*. Available at <http://www.hawaiiecoregionplan.info/home.html>.
- 2009 “The Nature Conservancy in Hawai‘i—Ka‘u Preserve.” Available at <http://www.nature.org/wherework/northamerica/states/hawaii/preserves/art7911.html>. Accessed July 27, 2009.

Three Mountain Alliance (TMA)

- 2007 *Three Mountain Alliance Management Plan*. December 31, 2008. Available at <http://www.hawp.org/downloads/TMA%20Mgmt%20Plan.Final.2.pdf>.
- 2009 *Three Mountain Alliance Weed Management Plan*. June 2009. Available at http://hawp.org/_library/documents/three-mountain-alliance/tmaweedplanjune2009.pdf.

Tomich, Prosper Q.

- 1986 *Mammals in Hawai‘i*. Bishop Museum Special Publication No. 76. Honolulu, Hawai‘i: B.P. Bishop Museum Press.

Tracey, J.P. and P.J.S. Fleming

- 2006 “Behavioural Responses of Feral Goats (*Capra hircus*) to Helicopters.” *Applied Animal Behaviour Sciences* 108(2007):114–128.

Tuggle, H.D. and M.J. Tomonari-Tuggle

- 2008 *Archeological Overview and Assessment and Research Design, Hawai‘i Volcanoes National Park*. International Archaeological Research Institute, Inc., Honolulu, Hawai‘i.

Tunison, Timothy J.

- 1991 *Alien Plant Control Strategies in Hawai‘i Volcanoes National Park*. In C.P. Stone, C.W. Smith, and J.T. Tunison (eds), *Alien Plant Invasions in Native Ecosystems of Hawai‘i: Management and Research*, 821-833. University of Hawai‘i Cooperative National Park Resources Studies Unit, Honolulu, Hawai‘i.

References

Tunison, J. T., and C. P. Stone

- 1992 "Special Ecological Areas: An Approach to Alien Plant Control in Hawai'i Volcanoes National Park." In C.P. Stone, C.W. Smith, and J.T. Tunison (eds), *Alien Plant Invasions in Native Ecosystems of Hawai'i: Management and Research*, 781–798. University of Hawai'i Cooperative National Park Resources Studies Unit, Honolulu, Hawai'i.

Tunison, J.T., R.K. Loh, L.W. Pratt, and D.W. Kageler

- 1994 *Early Succession in Pig-disturbed Mountain Parkland, Hawai'i Volcanoes National Park*. Technical Report No. 89. University of Hawai'i, Cooperative National Park Resources Studies Unit.

Tunison, T., J.A.A. Mckinney, and W.L. Markiewicz

- 1995 *Technical Report 99: The Expansion of Koa Forest after Cattle and Goat Removal Hawai'i Volcanoes National Park*. Cooperative National Park Resources Studies Unit. Department of Botany, University of Hawai'i at Mānoa.

Tunison, J.T., C.M. D'Antonio, and R.K. Loh

- 2001 "Fire and Invasive Plants in Hawai'i Volcanoes National Park." In K.E.M Galley and T.P. Wilson (eds.), *Proceedings of the Invasive Species Workshop: The Role of Fire in the Control and Spread of Invasive Species*, 122–131. Fire Conference 2000: the First National Congress on Fire Ecology, Prevention, and Management. Miscellaneous Publications No. 11. Tall Timbers Research Station, Tallahassee, Florida.

Tweed, E., P.M. Gorresen, R.J. Camp, P.J. Hart and T.K. Pratt

- 2007 *Forest Bird Inventory of the Kahuku Unit of Hawai'i Volcanoes National Park*. Technical Report 143. Pacific Cooperative Studies Unit, University of Hawai'i at Mānoa. Available at <http://www.botany.hawaii.edu/faculty/duffy/techr/143/default.htm>.

United Nations Educational, Scientific and Cultural Organization (UNESCO)

- 1987 World Heritage Nomination. IUCN Summary 409: Hawaii Volcanoes National Park (USA). Available online at: http://whc.unesco.org/archive/advisory_body_evaluation/409.pdf.

United Nations Environment Programme (UNEP)

- 1995 *Protected Areas and World Heritage: Hawai'i Volcanoes National Park*. United Nations Environment Programme–World Conservation Monitoring Center.

United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC)

- 2007 *World Heritage Sites: Hawai'i Volcanoes National Park*. United Nations Environment Programme – World Conservation Monitoring Center. November 2007. Available online at <http://www.unep-wcmc.org/sites/wh/pdf/Hawaii.pdf>. Accessed June 9, 2009.

U.S. Bureau of Economic Analysis.

- 2009a CA05N - Personal income by major source and earnings by NAICS industry - Hawai'i County, Hawai'i 2001-2007. Accessed online, May 26, 2009. Available: <http://www.bea.gov/regional/reis/action.cfm>.

- 2009b CA05N - Personal income by major source and earnings by NAICS industry – State of Hawai‘i, 2001-2007. Accessed online, May 26, 2009. Available: <http://www.bea.gov/regional/reis/action.cfm>.
- 2009c CA05N - Personal income by major source and earnings by NAICS industry – United States, 2001-2007. Accessed online, May 26, 2009. Available: <http://www.bea.gov/regional/reis/action.cfm>.

U.S. Bureau of Labor Statistics

- 2009a Consumer Price Index for the West Region. Available at <http://www.bls.gov/ro9/9216.pdf>. Accessed June 2, 2009.
- 2009b Consumer Price Index for Honolulu. Available at <http://www.bls.gov/ro9/9225.pdf>. Accessed June 2, 2009.
- 2009c The Employment Situation, May 2009. Available at <http://www.bls.gov/news.release/pdf/empsit.pdf>. Accessed June 10, 2009.

U.S. Census Bureau

- 2000a State and county Quickfacts, Accessed online, June 10, 2009. <http://quickfacts.census.gov/qfd/states/15/15003.html>.
- 2000b Detailed Tables, Census 2000 Summary File 3 (SF 3), P53, P87 for the United States, for the State of Hawaii, and for Hawaii County, Hawaii. Accessed online, May 26, 2009. Available: http://factfinder.census.gov/home/saff/main.html?_lang=en&_ts=.
- 2007a American Community Survey, Hilo CDP, Hawaii. Accessed online. May 29, 2009. Available: http://factfinder.census.gov/servlet/ADPTable?_bm=y&-context=adp&-ds_name=ACS_2007_3YR_G00_-tree_id=3307&-keyword=hilo&-_caller=geoselect&-geo_id=16000US1514650&-format=&-_lang=en.
- 2007b 2007 American Community Survey 1-year Estimates. Hawaii County, Hawaii. Accessed online, May 27, 2009. Available: http://factfinder.census.gov/servlet/DatasetMainPageServlet?_lang=en&_ts=261937186680&_ds_name=ACS_2007_1YR_G00_-&_program=.
- 2007c 2007 American Community Survey 1-year Estimates. Hawaii. Accessed online, May 27, 2009. Available: http://factfinder.census.gov/servlet/DatasetMainPageServlet?_lang=en&_ts=261937186680&_ds_name=ACS_2007_1YR_G00_-&_program=.
- 2007d 2007 American Community Survey 1-year Estimates. United States. Accessed online, May 27, 2009. Available: http://factfinder.census.gov/servlet/DatasetMainPageServlet?_lang=en&_ts=261937186680&_ds_name=ACS_2007_1YR_G00_-&_program=.
- 2009a Census 2000 Summary File 3 (SF 3), Tables P1, P6, P7, P87, for the United States, State of Hawai‘i, and Hawai‘i County, Hawai‘i. Available: http://factfinder.census.gov/servlet/DatasetMainPageServlet?_program=DEC&_submenuId=&_lang=en&_ts=. Accessed online, May 26, 2009.

References

- 2009b Annual Estimates of the Resident Population for Counties of Hawaii: April 1, 2000 to July 1, 2008. Accessed online, May 26, 2009. Available: <http://www.census.gov/popest/counties/CO-EST2008-01.html>.
- U.S. Department of Agriculture – Animal and Plant Health Inspection Service (USDA-APHIS)
- 2008 *Feral Swine Damage Management In Hawaii County, Environmental Assessment*. January 2008.
- U.S. Department of Agriculture-Natural Resource Conservation Service (USDA-NRCS)
- 2005 Endangered Species in Hawai‘i Matrix. Excel spreadsheet. Available online at ftp://ftp-fc.sc.egov.usda.gov/HI/pub/technotes/biology/biology_12_critical_habitat_information/.
- 2009a U.S. General Soil Map (STATSGO2) for Hawai‘i. Available at <http://soildatamart.nrcs.usda.gov>. Accessed May 21, 2009.
- 2009b “Prime and Other Important Farmlands Definitions.” Available at http://www.pr.nrcs.usda.gov/technical/soil_survey/primefarmdefs.htm. Accessed February 20, 2009.
- 2009c Soil Survey Geographic (SSURGO) database for Hawai‘i Volcanoes National Park, Hawai‘i. Obtained from Soil Data Mart at <http://soildatamart.nrcs.usda.gov/>. Accessed May 21, 2009.
- U.S. Department of Transportation, Federal Aviation Administration (FAA)
- n.d. *Air Tour Management Program*. Available at <http://www.faa.gov/about>.
- 1982 *Helicopter Noise Exposure Curves for Use in Environmental Impact Assessment, November 1982*.
- 2004 *Hawai‘i Volcanoes National Park Air Tour Management Plan Planning and NEPA Scoping Document*. Prepared by Volpe National Transportation System Center, U.S. Department of Transportation. March 3.
- 2005 *Hawai‘i Volcanoes National Park Air Tour Management Plan Planning and NEPA Scoping Document*. Prepared by Volpe National Transportation System Center, U.S. Department of Transportation. August 1.
- 2006 Baseline ambient sound levels in Hawai‘i Volcanoes National Park. Unpublished data. April 2006.
- U.S. Fish and Wildlife Service (USFWS)
- n.d. Partners for Fish and Wildlife Program in Hawaii. Available online at <http://www.privatelandownernetwork.org/yellowpages/resource.aspx?id=10421>.
- 1983 *Hawaiian Dark-rumped Petrel and Newell’s Manx Shearwater Recovery Plan*. Portland, Oregon.
- 1984 *Hawaiian Hawk Recovery Plan*. U.S. Fish and Wildlife Service. Portland, Oregon.
- 1993 *Draft Recovery Plan for Haplostachys haplostachya and Stenogyne angustifolia*.

- 1994a *Recovery Plan for Caesalpinia kawaiiensis and Kokia drynarioides*. U.S. Fish and Wildlife Service, Pacific Region. June 1994.
- 1994b *Surveys of the Distribution of Seabirds Found in the Vicinity of Proposed Geothermal Project Subzones in the District of Puna, Hawai‘i*. August 1994.
- 1996a *Recovery Plan for the Big Island Plant Cluster*. U.S. Fish and Wildlife Service, Portland, Oregon.
- 1996b *Recovery Plan for the Ka‘ū Silversword*. U.S. Fish and Wildlife Service.
- 1997 *Big Island II: Addendum to the Recovery Plan for the Big Island Plant Cluster*. U.S. Fish and Wildlife Service.
- 1998a *Final Recovery Plan for Four Species of Hawaiian Ferns*. U.S. Fish and Wildlife Service, Portland, Oregon.
- 1998b *Recovery Plan for the Hawaiian Hoary Bat*. U.S. Fish and Wildlife Service, Portland, Oregon.
- 1999 *Recovery Plan for the Multi-island Plants*. U.S. Fish and Wildlife Service.
- 2003 *Endangered and Threatened Wildlife and Plants: Final Designation of Critical Habitat for 46 Plant Species from the Island of Hawai‘i, HI: Final Rule* Department of the Interior. U.S. Fish and Wildlife Service. Dated July 2, 2003 (Volume 68, Number 127:39, 624–39, 761).
- 2004 *Draft Revised Recovery Plan for the Nēnē or Hawaiian Goose*. U.S. Fish and Wildlife Service.
- 2006a *Revised Recovery Plan for Hawaiian Forest Birds*. Region 1, Portland, Oregon.
- 2006b *Recovery Outline for 12 Hawaiian Picture-wing Flies*. August 2006.
- 2007 *Draft Environmental Assessment for Fencing of the Kona Forest Unit of the Hakalau Forest National Wildlife Refuge Hawai‘i County, Hawai‘i*. April 2007. Available at <http://www.fws.gov/pacificislands/wnwr/DraftEAKonaForestFence.pdf>.
- 2008a *Revised Recovery Plan for the ‘Alalā*. U.S. Fish and Wildlife Service, Portland, Oregon.
- 2008b *Pomace Fly (D. heteroneura) Recovery Plan Summary*.
- 2008c *5-Year Review, Short Form Summary - Neraudia ovata*. Available on line at: http://ecos.fws.gov/docs/five_year_review/doc1855.pdf.
- 2008d *Species Assessment and Listing Priority Assignment Form – Ochrosia halekalae*. March 2008.
- 2008e *Final Environmental Assessment for Fencing of the Kona Forest Unit of the Hakalau Forest National Wildlife Refuge, Hawai‘i County, Hawai‘i*. January 2008.

References

- 2008f 5-Year Review, Short Form Summary – *Hibiscadelphus giffardianus* (Hau kuahiwi) and *Melicope zahlbruckner* (Alani). Available on line at: http://ecos.fws.gov/docs/five_year_review/doc1838.pdf.
- 2009a “Endangered Species in the Pacific Islands: Hawaiian Hoary Bat.” Last updated April 27, 2009. Available online at <http://www.fws.gov/pacificislands/fauna/HIhoarybat.html>. Accessed June 4, 2009.
- 2009b “ESA Basics: More than 30 Years of Conserving Endangered Species.” Available at http://www.fws.gov/endangered/factsheets/ESA_basics.pdf. Accessed June 10, 2009.
- 2009c Species Assessment and Listing Priority Assignment Form – *Metabetaeus lohena*. Available online at http://ecos.fws.gov/docs/candforms_pdf/r1/K037_I01.pdf.
- 2009d *Revised Recovery Plan for the ‘Alalā (Corvus hawaiiensis)*. U.S. Fish and Wildlife Service, Portland, Oregon.
- 2009e *Five-Year Review, Summary and Evaluation—Argyroxiphium kauense (Mauna Loa (=Ka‘ū) silversword)*. Available online at http://ecos.fws.gov/docs/five_year_review/doc2454.pdf.
- 2009f 5-Year Review, Short Form Summary – *Cyanea hamatiflora* ssp. *carlsonii* (Hāhā).
- 2009g 5-Year Review, Summary and Evaluation – *Cyanea shipmanii* (Hāhā).
- 2009h 5-Year Review, Summary and Evaluation – *Kokia drynarioides* (Koki‘o).
- 2009i “Species Profile for Green Sea Turtle (*Chelonia mydas*).” Available online at <http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=C00S>.
- 2009j Species Assessment and Listing Priority Assignment Form – *Drosophila digressa*.
- 2009k Species Assessment and Listing Priority Assignment Form – *Cyanea tritomantha*. March 2009.
- 2009l Species Assessment and Listing Priority Assignment Form – *Joinvillea ascendens* ssp. *ascendens*. March 2009.
- 2009m Species Assessment and Listing Priority Assignment Form – *Sicyos macrophyllus*. March 2009.
- 2009n Species Assessment and Listing Priority Assignment Form – *Phyllostegia floribunda*. March 2009.
- 2009o Species Assessment and Listing Priority Assignment Form – *Ranunculus hawaiiensis*. March 2009.
- 2010 Pacific Islands Fish and Wildlife Office. Endangered Species. Available online at: <http://www.fws.gov/pacificislands/species.html>.
- 2011 Endangered Species. Available online at: <http://www.fws.gov/pacificislands/species.html>.

United States Geological Service (USGS)

- 2005a *Biocomplexity of Introduced Avian Diseases in Hawai‘i: Threats to Biodiversity of Native Forest Ecosystems*. Open File Report 2005-3139. December 2005. Available at <http://biology.usgs.gov/pierc/Biocomplexity/Biocomplexity.pdf>. Accessed June 8, 2009.
- 2005b *Inventory of Anchialine Pools in Hawai‘i’s National Parks*. Available online at http://biology.usgs.gov/pierc/Plants,_Insects_&_Ecosystems/Anchialine_pools.pdf. Accessed November 11, 2009.
- 2006a *A Preliminary Assessment of Mouflon Abundance at the Kahuku Unit of Hawai‘i Volcanoes National Park*. Open-File Report 2006-1193.
- 2006b *Hawai‘i Forest Bird Interagency Database Project: Collecting, Understanding, and Sharing Population Data on Hawaiian Forest Birds. February 2006*. Available at http://biology.usgs.gov/pierc/Native_Birds/Forest_birds.htm. Accessed June 8, 2009.
- 2006c *Feral Pigs, Introduced Mosquitoes, and the Decline of Hawai‘i’s Native Birds*. February 2006. Available at http://biology.usgs.gov/pierc/Fact_Sheets/Pigs_and_mosquitoes.pdf. Accessed June 8, 2009.

Vancouver, Captain George

- 1798 *A Voyage of Discovery to the North Pacific Ocean and Round the World*. Reprint 1967, volumes 1–3. Amsterdam and New York: N. Israel and Da Capo Press.

Vitousek, P.M., C.M. D’Antonio, L.L. Loope, M. Rejmánek, and R. Westbrooks

- 1997 “Introduced Species: A Significant Component of Human-caused Global Change.” *New Zealand Journal of Ecology* 21(1):1–16.

Vitousek, P.M., L.L. Loope, and C.P. Stone

- 1987 “Introduced Species in Hawai‘i: Biological Effects and Opportunities for Ecological Research.” *Trends in Ecology and Evolution* 2:224–227.

Vtorov, I.P.

- 1993 “Feral Pig Removal: Effects on Soil Microarthropods in a Hawaiian Rain Forest.” *Journal of Wildlife Management* 57:875–880.

Wagner, W.L., D.R. Herbst, and S.H. Sohmer

- 1999 *Manual of the Flowering Plants of Hawai‘i*. Bishop Museum Special Publication 83. University of Hawai‘i Press/Bishop Museum Press, Hawai‘i.

Welsh, Ryan

- 2002 “Introduced Species in Hawai‘i—Mammals.” Last Updated December 5. Earlham College Biology Department Senior Seminar 2002. Available at <http://www.earlham.edu/~biol/Hawai‘i/mammals.htm>.

References

Western Regional Climate Center (WRCC)

- n.d. "Climate of Hawai'i." Available at <http://www.wrcc.dri.edu/narratives/HAWAII.htm>. Accessed May 21, 2009.
- 2006 Hawai'i Volcanoes NP HQ 54, Hawai'i, Period of Record General Climate Summary—Temperature. Updated July 28, 2006. Available at <http://www.wrcc.dri.edu/cgi-bin/cliGCST.pl?hihawa>.

Westervelt, W.E.

- 1963 Hawaiian Legends of Old Honolulu. Charles E Tuttle Co.: Rutland, VT.

Yoshida, L., Hawai'i Volcanoes National Park

- 2009a Personal Communication via telephone with Landon Vine, The Louis Berger Group, RE: Administration Division and park management and operations, May 21, 2009.
- 2009b Personal Communication via telephone with Landon Vine, The Louis Berger Group, RE: Park Operating Budget and Full-Time Employees, June 26, 2009.
- 2009c Personal Communication via email with Dan Niosi, The Louis Berger Group, RE: Administrative Division and park management and operations, October 27, 2009.

Ziegler, A.C.

- 2002 *Hawaiian Natural History, Ecology, and Evolution*. University of Hawai'i Press.

GLOSSARY

‘a’a flows—These volcanic lava flows result in discontinuous lava surfaces; the hallmark of an ‘a’a lava flow is the very rough surface it produces when it cools and solidifies.

Action Alternative—An alternative that proposes a different management action or actions to address the purpose, need, and objectives of the plan; one that proposes changes to the current management. Alternatives B and C are the action alternatives in this planning process. See also: “No-Action Alternative.”

Affected Environment—A description of the existing environment that may be affected by the proposed action (40 CFR 1502.15).

Ahupua‘a—Traditional Hawaiian land division usually extending from the uplands to the sea.

Authorized Agents—For the purposes of this plan, authorized agents could include NPS personnel, other federal, state, or local agency personnel, and skilled professionals. Authorized agents would be certified in firearms training, and specially trained in wildlife management with firearms. Skilled professionals would include nonprofit groups, fully insured business entities, or others engaged in wildlife management activities that include direct reduction with firearms. Skilled professionals would possess all necessary permits.

Alpine—A high elevation region above tree line characterized by dry, cool climate and sparse to almost non-existent vegetation (Wagner et al. 1999). Frosts are frequent at night. In the park, this environment typically occurs above 8,500 feet elevation.

Avian—Pertaining to or characteristic of birds.

Cervid—A member of the deer family, such as white-tailed deer, mule deer, elk, moose, and caribou.

Closure—An area delineated by posts with string between them, prohibiting vehicle and/or pedestrian access (except in alternative A, where sometimes string is not used between posts).

Coastal Lowland—The coastal lowland environment includes the coastal strand along the immediate shoreline and the coastal plain makai of the large fault scarps or pali, usually located one to several miles away from the shoreline, and woodland communities on the face of the pali. The coastal lowland environment is typically warm and dry. Rainfall varies from about 60 inches per year in the eastern park boundary to less than 20 inches in the west. Summer drought conditions characterize the area (NPS 2005e).

Code—A grouping centered on a common subject. The codes were developed during the scoping process and were used to track major subjects.

Comment—A comment is a portion of the text within a correspondence that addresses a single subject. It could include such information as an expression of support or opposition to the use of a potential management tool, additional data regarding the existing condition, or an opinion debating the adequacy of an analysis.

Concern—Concerns are statements that summarize the issues identified by each code. Each code was further characterized by concern statements to provide a better focus on the content of comments. Some codes required multiple concern statements, while others did not.

Contractor—For the purposes of this plan, a contractor would be a fully insured business entity, nonprofit group, or other entity engaged in wildlife management activities that include the direct reduction with firearms.

Correspondence—A correspondence is the entire document received from a commenter. It can be in the form of a letter, email, written comment form, note card, open house transcript, or petition.

Council on Environmental Quality (CEQ)—Established by Congress within the Executive Office of the President with passage of the *National Environmental Policy Act of 1969*. CEQ coordinates federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives.

Criteria Pollutants—The 1970 amendments to the *Clean Air Act* requiring the U.S. Environmental Protection Agency to set National Ambient Air Quality Standards for certain pollutants known to be hazardous to human health. Environmental Protection Agency has identified and set standards to protect human health and welfare for six pollutants: ozone, carbon monoxide, total suspended particulates, sulfur dioxide, lead, and nitrogen oxide. The term, “criteria pollutants” derives from the requirement that Environmental Protection Agency must describe the characteristics and potential health and welfare effects of these pollutants. It is on the basis of these criteria that standards are set or revised.

Cultural Landscape—A geographic area (including both cultural and natural resources and the wildlife or domestic animals therein) associated with a historic event, activity, or person or exhibiting other cultural or aesthetic values.

Cultural Resources—Prehistoric and historic districts, sites, buildings, objects, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reason.

Decibels—A unit of relative sound loudness, electric voltage, or current equal to ten times the common logarithm of the ratio of two readings.

Depredation—Damage or loss the act of preying upon.

Direct Reduction—Lethal removal of non-native ungulates; includes both sharpshooting and capture/euthanasia.

Ecosystem—An ecological system; the interaction of living organisms and the nonliving environment producing an exchange of materials and energy between the living and nonliving.

Endangered Species—“...any species (including subspecies or qualifying distinct population segment) that is in danger of extinction throughout all or a significant portion of its range (ESA Section 3(6)).” The lead federal agency, U.S. Fish and Wildlife Service, for the listing of a species as endangered is responsible for reviewing the status of the species on a five-year basis.

Endangered Species Act (ESA) (16 USC 1531 et seq.)—An Act to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved and to provide a program for the conservation of such endangered species and threatened species.

Endemic—Native to or confined to a particular region.

Environment—The sum total of all biological, chemical, and physical factors to which organisms are exposed; the surroundings of a plant or animal.

Environmental Assessment (EA)—A concise public document, prepared in compliance with NEPA, that briefly discusses the purposes and need for an action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an environmental impact statement or finding of no significant impact (40 CFR 1508.9).

Environmental Consequences—Environmental effects of project alternatives, including the proposed action, any adverse environmental effects which cannot be avoided, the relationship between short-term uses of the human environment, and any irreversible or irretrievable commitments of resources which would be involved if the proposal should be implemented (40 CFR 1502.16).

Estuarine—Formed, deposited, growing in, inhabiting, or found in the widening channel of a river where it nears the sea or in an area of fresh water and salt (tidal) water mixing.

Ethnographic Resource—Any site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

Executive Order—Official proclamation issued by the President that may set forth policy or direction or establish specific duties in connection with the execution of federal laws and programs.

Exposure—Exposure occurs whenever and wherever a person is subjected to electric, magnetic or electromagnetic fields other than those originating from physiological processes in the body and other natural phenomena.

Extirpated Species—A species that is no longer present in an area where it once lived.

Fauna—Animals, especially the animals of a particular region or period, considered as a group.

Fertility Control—A method or methods used to limit the numbers of animals in a population by decreasing the reproductive success of the animals, such as contraception or sterilization.

Finding of No Significant Impact (FONSI)—A document prepared by a federal agency showing why a proposed action would not have a significant impact on the environment and thus would not require preparation of an Environmental Impact Statement. A FONSI is based on the results of an Environmental Assessment.

Floodplain—The flat or nearly flat land along a river or stream or in a tidal area that is covered by water during a flood.

Flora—Plants considered as a group, especially the plants of a particular country, region, or time.

Habitat—The environment in which a plant or animal lives (includes vegetation, soil, water, and other factors).

Herbivore—An animal that eats a diet consisting primarily of plant material.

Historic District—An area that generally includes within its boundaries a significant concentration of properties linked by architectural style, historical development, or a past event.

Invasive Species—Non-native species disrupting and replacing native species.

Irreversible—A term that describes the loss of future options. Applies primarily to the effects of use of nonrenewable resources, such as minerals or cultural resources, or to those factors, such as soil productivity that are renewable only over long periods of time.

Makai—Oceanside, towards the sea.

Mauka—Inland, upland, towards the mountain.

Migratory—The act of moving from one spatial unit to another.

Monitoring—A process of collecting information to evaluate if an objective and/or anticipated or assumed results of a management plan are being realized (effectiveness monitoring) or if implementation is proceeding as planned (implementation monitoring).

Montane—Most of the montane seasonal fire environment in the park lies on the lower slopes of Mauna Loa Strip mauka of mid-elevation seasonal woodland at 4,000 foot elevation and makai of the subalpine fire environment zone at 6,700 foot elevation. In Kahuku, the area between 5,000 and 6,000 feet in elevation on the southwest facing slope between Manukā and Kipahoe Natural Area Reserves can also be characterized as montane seasonal (NPS 2005e).

National Environmental Policy Act (NEPA)—The Act as amended articulates the federal law that mandates protecting the quality of the human environment. It requires federal agencies to systematically assess the environmental impacts of their proposed activities, programs, and projects including the “no-action” alternative of not pursuing the proposed action. NEPA requires agencies to consider alternative ways of accomplishing their missions in ways which are less damaging to the environment.

National Historic Preservation Act of 1966 (16 USC 470 et seq.)—An Act to establish a program for the preservation of historic properties throughout the nation, and for other purposes, approved October 15, 1966 [Public Law 89-665; 80 STAT. 915; 16 USC. 470 as amended by Public Law 91-243, Public Law 93-54, Public Law 94-422, Public Law 94-458, Public Law 96-199, Public Law 96-244, Public Law 96-515, Public Law 98-483, Public Law 99-514, Public Law 100-127, and Public Law 102-575].

National Register of Historic Places (National Register)—A register of districts, sites, buildings, structures, and objects important in American history, architecture, archaeology, and culture, maintained by the Secretary of the Interior under authority of Section 2(b) of the *Historic Sites Act of 1935* and Section 101(a)(1) of the *National Historic Preservation Act of 1966*, as amended.

No-Action Alternative—The alternative in which baseline conditions and trends are projected into the future without any substantive changes in management (40 CFR 1502.14(d)). Alternative A is the no-action alternative in this planning process.

Non-native Species—Any introduced plant, animal or protist species that is not native to the area and may be considered a nuisance; also called exotic or alien species.

Organic Act—Enacted in 1916, this act commits the National Park Service to making informed decisions that perpetuate the conservation and protection of park resources unimpaired for the benefit and enjoyment of future generations.

Pahoehoe flows—These volcanic lavas flows result in continuous surfaces. Pahoehoe lavas are thin and they flow smoothly in tongues or lobes and are characterized by a glassy, plastic skin. When the pahoehoe lava flow cools, it often solidifies to a smooth surface.

Pali—Cliffs or ridges.

Population (or Species Population)—A group of individual plants or animals that have common characteristics and interbreed among themselves and not with other similar groups.

Population Reduction—Removing animals randomly within a population in an attempt to reduce animal density, and thus decrease CWD transmission rates.

Qualified Volunteers—For the purposes of this plan, qualified volunteers would include individuals identified through an NPS-developed application and selection process. Before assisting with removal actions with firearms, these individuals would need to meet a number of requirements including the following:

- Filling out a registration form;
- Obtaining a Hunter Education Certificate or card;
- Presenting registration of the firearm to be used and a Hawai‘i hunting license;
- Providing their own transportation; and
- Being able to spend a minimum of eight hours hiking over rough terrain.

Relocation— For the purposes of this plan, the driving of non-native ungulates to willing recipients on adjacent lands where populations of non-native ungulates are already established in large numbers. Coordination with pertinent agencies would be required, and sites where undesirable environmental impacts could occur would be avoided.

Reproductive Control—A method or methods used to limit the numbers of animals in a population by decreasing the reproductive success of the animals, such as contraception or sterilization.

Scoping—An early and open process for determining the extent and variety of issues to be addressed and for identifying the significant issues related to a proposed action (40 CFR 1501.7).

Subalpine—This zone extends from 6,500 to 8,500 feet (1,981 to 2,591 meters) (and higher). The average annual temperature ranges from 40°F to 50°F, with occasional winter frost. Low-lying clouds cause fog-drip from trees and shrubs, which contributes to precipitation.

Successional—“Successional” refers to the process of ecosystem development as brought about by changes in the populations of species that results in the creation of a geographic region with particular characteristics. Early successional refers to species that tend to more quickly give way to other species (weeds, nonnative varieties, etc.), typically representing lower quality habitat. Late-successional refers to more persistent species, and tend to be associated with higher value habitat.

Ungulate—A hoofed, typically herbivorous, animal; includes horses, cows, deer, elk, and bison.

Glossary

Wetlands—The U.S. Army Corps of Engineers (Federal Register, 1982) and the Environmental Protection Agency (Federal Register, 1980) jointly define wetlands as: Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

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