

References

- Alexander, K.A. and Appel, M.J.G. 1994. African wild dogs (*Lycaon pictus*) endangered by a canine distemper epizootic among domestic dogs near the Masai Mara National Reserve, Kenya. *Journal of Wildlife Diseases* 30: 481–485.
- Alexander, K.A., Richardson, J.D. and Kat, P.W. 1992. Disease and conservation of African wild dogs. *Swara* 15: 13–14.
- Allen, G.M. 1939. A checklist of African mammals. *Bulletin Museum of Comparative Zoology, Harvard College* 38: 192–193.
- Allen, J.A. 1942. Extinct and vanishing mammals of the western hemisphere with the marine species of all the oceans. *Special Publication of the American Commission for International Wildlife Protection* 11: 1–620.
- Allendorf, F.W. 1986. Genetic drift and the loss of alleles versus heterozygosity. *Zoo Biology* 5: 181–190.
- Allendorf, F.W. and Leary, R.F. 1986. Heterozygosity and fitness in natural populations of animals. Pp. 57–76 in M.E. Soulé, ed. *Conservation biology: the science of scarcity and diversity*. Sinauer, Sunderland, MA.
- Amos, B., Schlotterer, C. and Tautz, D. 1993. Social structure of pilot whales revealed by analytical DNA profiling. *Science* 260: 670–672.
- Anderson, R.M. and May, R.M. 1991. Population biology of infectious diseases: part I. *Nature* 280: 361–367.
- Anon. 1904. Letter to Superintendent Baker from US Consul General in Abyssinia, February 1904. RU74 National Zoological Park, Records 1887–1965. (Box 85, folder 12).
- Appel, M.J. 1987. *Virus infections of carnivores*. Elsevier, Amsterdam.
- Appel, M.J. and Parrish, C.R. 1987. Canine parvovirus type 2. Pp. 69–92 in M.J. Appel, ed. *Virus infections of carnivores*. Elsevier, Amsterdam.
- Avise, J.C. 1994. *Molecular markers, natural history and evolution*. Chapman and Hall, New York, USA.
- Badridze, J., Gurielidze, Z., Todua, G.S., Badridze, N. and Butkhuzi, L. 1992. *The reintroduction of captive-raised large mammals into their natural habitat: problems and method*. Institute of Zoology of the Academy of Sciences, Tbilisi, Georgia. 12 pp.
- Baer, G. 1988. Oral rabies vaccination: an overview. *Review of Infectious Diseases* 10: 644–648.
- Bailey, A.M. 1932. The heights of the Simien. *Natural History* (New York) 23(1): 61–74.
- Balmford, A., Mace, G.M. and Leader-Williams, N. 1996. Designing the ark: setting priorities for captive breeding. *Conservation Biology* 10: 719–727.
- Barber, R. 1993. *Bestiary*. The Folio Society, London.
- Bartlett, M.S. 1957. Measles periodicity and community size. *J.R. Statist. Soc. A* 120: 48–70.
- Barton, N.H. and Hewitt, G.M. 1985. Analysis of hybrid zones. *Annual Review of Ecology and Systematics* 16: 113–148. (N)
- . 1989. Adaptation, speciation and hybrid zones. *Nature* 141: 497–593.
- Bayene, S. 1986. *A study on some ecological aspects of the giant mole-rat (Tachyoryctes macrocephalus) in Bale Mountains, Ethiopia*. M.Sc. Thesis, Addis Ababa University, Ethiopia.
- Beck, B.B., Rapaport, L.G., Stanley Price, M.R. and Wilson, A.C. 1994. Reintroduction of captive-born animals. Pp. 265–286 in P.J.S. Olney, G.M. Mace, and A.T.C. Feistner, eds. *Creative conservation: interactive management of wild and captive animals*. Chapman & Hall, London.
- Begon, M. 1979. *Investigating animal abundance*. Edward Arnold, London.
- Blancou, J., Kieny, M.P., Lathe, R., Lecoq, J.-P., Pastoret, P., Soulebot, J.P. and Desmettre, P. 1986. Oral vaccination of the fox against rabies using a live recombinant vaccinia virus. *Nature* 322: 373–375.
- Boitani, L. 1983. Wolf and dog competition in Italy. *Acta Zoologica Fennica* 174: 259–264.
- Bradley, M.P. 1994. Experimental strategies for the development of an immunocontraceptive vaccine for the European red fox, *Vulpes vulpes*. *Reproductive, Fertility and Development* 6: 307–317.
- Brook, B.W., Lim, L., Harden, R. and Frankham, R. In press). Does population viability analyses software predict the behaviour of real populations? A retrospective analysis on the Lord Howe Island woodhen (*Tricholimnas sylvestris*) using VORTEX and GAPPS.
- Brown, J.H. 1971. Mammals on mountain tops: nonequilibrium insular biogeography. *American Naturalist* 105: 467–478.
- Brown, L.H. 1964a. *A report on the mountain nyala Tragelaphus buxtoni, the Semien fox Simenia simensis, and other animals in the Mendebo mountains, Bale Province, Ethiopia*. Mimeo 18 pp.

- . 1964b. *A report on the wildlife situation in the Semien mountains of north Ethiopia with special reference to the Walia ibex, Capra walie and the Semien fox, Simenia simensis simensis*. Mimeo.
- . 1964c. Semien fox. *Africana* 2: 45–48.
- . 1966. *A report on the National Geographic Society/World Wildlife Fund Expedition to study the Moun-tain Nyala Tragelaphus buxtoni*. WWF, Nairobi, Mimeo 118 pp.
- Brown, W.M. 1986. The mitochondrial genome of animals. Pp. 95–129 in R. MacIntyre, ed. *Molecular evolutionary biology*. Cornell University Press, New York, USA.
- Brownlow, C.A. 1996. Molecular taxonomy and the conservation of the red wolf and other endangered carnivores. *Conservation Biology* 10: 390–396.
- Buckland, S.T., Anderson, D.R., Burnham, K.P. and Laake, J.L. 1993. *Distance sampling*. Chapman and Hall, London.
- Burgman, M.A., Ferson, S. and Akcakaya, H.R. 1993. *Risk assessment in conservation biology*. Chapman and Hall, London, UK.
- Burrows, R. 1992. Rabies in wild dogs. *Nature* 359: 277.
- Burrows, R., Hofer, H. and East, M.L. 1994. Demography, extinction and intervention in a small population: the case of the Serengeti wild dogs. *Proceedings of the Royal Society, London, Series B* 256: 281–292.
- Carbyn, L.N., Armbruster, H.J. and Mamo, C. 1994. A review of the results of the swift fox reintroduction program in Canada. Pp. in M.L. Bowles and C.J. Whelan, eds. *Restoration of endangered species*. Cambridge University Press, Cambridge, UK.
- Carey, A.B., Giles, R.H. and McLean, R.G. 1978. The landscape epidemiology of rabies in virginia. *American Journal of Tropical Medicine and Hygiene* 27: 573–580.
- Carpenter, J.W., Appel, M.J.G., Ericson, R.C. and Novilla, M.N. 1976. Fatal vaccine-induced canine distemper virus infection in black-footed ferrets. *Journal of the American Veterinary Medical Association* 69: 691.
- Caughley, G. 1994. Directions in conservation biology. *Journal of Animal Ecology* 63: 215–244.
- Caughley, G. and Gunn, A. 1996. *Conservation biology in theory and practice*. Blackwell Science, Oxford UK.
- Charlton, K.M., Webster, W.A. and Casey, G.A. 1991. Skunk rabies. Pp. 307–324 in G.M. Baer, ed. *The natural history of rabies*, 2nd Ed. CRC Press, Boca Raton, Florida.
- Cleaveland, S.C. 1996. *Aspects of raies and canine distemper virus in the Serengeti, Tanzania*. Ph.D. Dissertation, University of London.
- Cleaveland, S.C. and Dye, C. 1995. Maintenance of a microparasite infecting several host species: rabies in the Serengeti. *Parasitology* 111: 533–547.
- Clutton-Brock, J., Corbet, G.B. and Hills, M. 1976. A review of the family Canidae, with a classification by numerical methods. *Bulletin of the British Museum (Natural history) London, Zoology* 29: 117–199.
- Cohn, J.P. 1987. Red wolf in the wilderness. *Bioscience* 37: 313–316.
- Creel, S. 1992. Cause of wild dog deaths. *Nature* 360: 633.
- Creel, S., Creel, N.M., Matovelo, J.A., Mtambo, M.M.A., Batamuzi, E.K. and Cooper, J.E. 1995. The effects of anthrax on endangered African wild dogs (*Lycyaon pictus*). *Journal of Zoology (London)* 236: 199–209.
- Cunningham, A.A. 1996. Disease risks of wildlife translocations. *Conservation Biology* 10: 349–353.
- Darwin, C. 1860. *Journal of researchers into the natural history and geology of the countries visited during the voyage of the H.M.S 'Beagle' round the world*. John Murray, London.
- Dathe, H. 1980. The history of wild animal studbooks. *International Zoo Yearbook* 20: 485–486.
- Davidson, W.E., Nettles, V.F., Hayes, L.E., Howerth, E.W. and Couvillion, D.E. 1992. Diseases diagnosed in gray foxes (*Urocyon cinereoargenteus*) from the southeastern United States. *Journal of Wildlife Diseases* 28: 28–33.
- de Beaux, O. 1922. Mammiferi Abyssini e Somali. *Atti della Società Italiana di Scienza Naturale da Milano* 61: 21–34.
- Delany, M.J. 1972. The ecology of small rodents in tropical Africa. *Mammal Review* 2: 1–42.
- DeMarais, B.D., Dowling, T.E., Douglas, M.E., Minckley, W.L. and Marsh, P.C. 1992. Origin of Gila semimuda (Teleostei: Cyprinidae) through introgressive hybridization: implications for evolution and conservation. *Proceedings of the National Academy of Sciences of the USA* 89: 2747–2751.
- Doherty, J.G., Koontz, F.W. and Conway, W.G. 1992. *Proposal for an ex-situ Ethiopian wolf captive breeding project*. Unpublished report, New York Zoological society, 13 pp.
- Donoghue, A.M., Howard, J.G., Byers, A.P., Goodrowe, K.L., Bush, M., Blumer, E., Lukas, J., Stover, J., Snodgrass, K. and Wildt, D.E. 1992a. Correlation of sperm viability with gamete interaction and fertilization in vitro in the cheetah (*Acinonyx jubatus*). *Biology of Reproduction* 46: 1047–1056.
- Donoghue, A.M., Johnston, J.A., Seal, U.S., Armstrong, D.L., Simmons, L.G., Gross, T., Tilson, R.L. and Wildt, D.E. 1992b. Ability of thawed tiger

References

- (*Panthera tigris*) spermatozoa to fertilize conspecific eggs and bind and penetrate domestic cat eggs in vitro. *Journal of Reproduction and Fertility* 96: 555–564.
- Durant, S.M. and Harwood, J. 1992. Assessment of monitoring and management strategies for local populations of *Monachus monachus*, the Mediterranean monk seal. *Biol. Cons.* 61, 81–92.
- Durant, S.M. and Mace, G.M. 1994. Species differences and population structure in population viability analysis. Pp. 67–91 in G.M. Mace, P.J. Olney and A.T.C. Feistner, eds. *Creative conservation: the interactive management of wild and captive animals for conservation*. Chapman and Hall, London.
- Durchfeld, B., Baumgarner, W., Herbst, W. and Brahm, R. 1990. Vaccine-associated canine distemper infection in a litter of African hunting dogs (*Lycaon pictus*). *Zentralbl-Veterinarmed-B* 37: 203–212.
- Emmrich, D. 1885. Der Abessinische wolf, *Simenia simensis* (Rüppell, 1835), beobachtungen im Bale-Gebirge. *Zoologische Garten N.F.*, Jena 55: 327–340.
- Faith, D.P. 1994. Phylogenetic pattern and the quantification of organismal biodiversity. *Philosophical Transactions of the Royal Society of London Series B – Biological Sciences* 345: 555–564.
- Fekadu, M. 1982. Rabies in Ethiopia. *American Journal of Epidemiology* 115: 266–273.
- Flenley, J. 1979. *The equatorial rain forest: a geological history*. Butterworths, London.
- Fritts, S.H., Paul, W.J. and Mech, L.D. 1985. Can relocated wolves survive? *Wildlife Society Bulletin* 13: 459–463.
- Fuertes, L.A. and Osgood, W.H. 1936. Artist and naturalist in Ethiopia. Doubleday, Doran & Co., New York.
- Gascoyne, S., Laurenson, M.K., Lelo, S. and Borner, M. 1993. Rabies in African wild dogs (*Lycaon pictus*) in the Serengeti Region. *Journal of Wildlife Diseases* 29: 396–402.
- Geffen, E., Mercure, A., Girman, D.M., Macdonald, D.W. and Wayne, R.K. 1992. Phylogenetic relationships of the wolf-like canids: mitochondrial DNA restriction fragment, site and cytochrome b sequence analysis. *Journal of Zoology (London)* 228: 27–39.
- Gervais, M.P. 1855. *Histoire Naturelle des Mammifères*. Vol 2. L. Curmer, Paris, 344 pp.
- Gilpin, M. and Soulé, M. 1986. Minimum viable populations: Processes of species extinction. Pp. 19–34 in M. Soulé, ed. *Conservation biology: the science of scarcity and diversity*. Sinauer, Sunderland, Mass.
- Ginsberg, J.R. 1993. Can we build an ark? *Trends in Ecology and Evolution* 8: 4–7.
- . 1994. Captive breeding, reintroduction and the conservation of canids. Pp. 365–383 in P.J.S. Olney, G.M. Mace, and A.T.C. Feistner, eds. *Creative conservation: interactive management of wild and captive animals*. Chapman & Hall, London.
- Ginsberg, J.R. and Macdonald, D.W. 1990. *Foxes, wolves, jackals and dogs. An action plan for the conservation of Canids*. IUCN/SSC Canid Specialist Group and Wolf Specialist Group, IUCN, Gland, Switzerland, 116 pp.
- Ginsberg, J.R., Woodroffe, R. and Macdonald, D.W. In press. *The African wild dog: an action plan for its conservation*. IUCN, Cambridge, UK and Gland, Switzerland.
- Girman, D.J., Kat, P.W., Mills, M.G.L., Ginsberg, J.R., Borner, M., Wilson, V., Fanshawe, J.H., Fitzgibbon, C., Lau, L.M. and Wayne, R.K. 1993. Molecular genetics and morphological analyses of the African wild dog (*Lycaon pictus*). *Journal of Heredity* 84: 450–459.
- Gorham, J. 1966. The epizootiology of distemper. *Journal of the American Veterinary Medical Association* 149: 610–622.
- Gottelli, D. and Sillero-Zubiri, C. 1990. *The Simien jackal: ecology and conservation*. Bale Mountains Research Project, Wildlife Conservation International, 106 pp.
- Gottelli, D., Sillero-Zubiri, C., Applebaum, G.D., Girman, D., Roy, M., Garcia-Moreno, J., Ostrander, E. and Wayne, R.K. 1994. Molecular genetics of the most endangered canid: the Ethiopian wolf, *Canis simensis*. *Molecular Ecology* 3: 301–312.
- Gray, A.P. 1954. Mammalian hybrids. Technical Communication 10, Com. Agr. Bureau, Farnham Royal, England.
- Gray, J.E. 1868. Notes on the skulls of the species of dogs, wolves and foxes (Canidae) in the collection of the British Museum. *Proceedings of the Zoological Society of London* 1868: 492–525.
- Grisham, J., West, A., Bryers, O. and Seal, U. (eds.). 1994. *Conservation assessment and management plan (CAMP), for Canids, Hyaenas and Aardwolves*. Draft Report. AAZPA, CSG, HSG, CBSG, 147 pp.
- Groce, L. and Groce, S. 1977. Simien fox in Menz. *Ethiopian Wildlife & Natural History Society Newsletter* 117.
- Guiler, E.R. 1961. The former distribution and decline of the Thylacine. *Australian Journal of Science* 23: 207–210.
- Hagelberg, E., Gray, I.C. and Jeffreys, A.J. 1991. Identification of the skeletal remains of a murder victim by DNA analysis. *Nature* 352: 427–429.
- Hall, A. and Hardwood, J. 1991. *The Intervet guidelines to vaccinating wildlife*. NERC, Sea Mammal

- Research Unit.
- Hanny, P. 1964. The harsh-furred rat in Nyasaland. *Journal of Mammalogy* 54: 345–358.
- Harper, F. 1945. *Extinct and vanishing mammals of the old world*. Volume Special Publication 12. American Committee for International Wildlife Protection, New York, 850 pp.
- Hedberg, H. 1964. *Features of afroalpine plant ecology*. Acta Phytogeographica Suecica 49. Almqvist Wiksells, Uppsala, Sweden, 144 pp.
- Hillis, D.M. and Moritz, C. 1990. *Molecular systematics*. Sinauer Press, Sunderland, Massachusetts, USA.
- Hillman, J.C. 1986. *Bale Mountains National Park Management Plan*. Ethiopian Wildlife Conservation Organisation, Addis Ababa, Ethiopia, 322 pp.
- . 1993. *Ethiopia: compendium of wildlife conservation information*. Ethiopian Wildlife Conservation Organisation, Addis Ababa, 2 volumes, 786 pp.
- Hoss, M., Kohn, M., Paabo, S., Knauer, F. and Schroder, W. 1992. Excremental analysis by PCR. *Nature* 359: 199.
- Hubbard, A.L., McOrist, A., Jones, T.W., Boid, R., Scott, R. and Easterbee, N. 1992. Is survival of European wildcats *Felis silvestris* in Britain threatened by interbreeding with domestic cats? *Biological Conservation* 61: 203–208.
- Hurni, H. 1986. Management plan Simien Mountains National Park and surrounding rural area. UNESCO World Heritage Committee and Wildlife Conservation Organisation, Ministry of Agriculture, Ethiopia, 122 pp.
- . 1995. *Simien Mountains baseline study, Ethiopia*. Intermediate report on the 1994 field expedition (Phase I). Ministry of Natural Resources, Development and Environmental Protection, Addis Ababa, Ethiopia, 50 pp.
- IUCN. 1987a. *The IUCN Policy Statement on captive breeding*. IUCN, Gland, Switzerland.
- . 1987b. *Translocation of living organisms: introductions, re-introductions, and re-stocking*. IUCN Position Statement. IUCN, Gland, Switzerland.
- . 1992. Draft guidelines for re-introductions. *Reintroduction News* (Newsletter of the IUCN/SSC Reintroduction Specialist Group) 4: 2–3.
- . 1994. *IUCN red list categories*. IUCN Species Survival Commission, Gland, Switzerland.
- Jenks, S.M. and Wayne, R.W. 1992. Problems and policy for species threatened by hybridization: the red wolf as a case study. Pp. 237–251 in D.R. McCullough and R.H. Barrett, eds. *Wildlife 2001*. Elsevier Applied Science, New York.
- Johnston, L.A., Donoghue, A.M. and O'Brien, S.J. 1991. Rescue and maturation in vitro of follicular oocytes collected from nondomestic felid species. *Biology of Reproduction* 45: 898–906.
- Johnston, L.A., Donoghue, A.M., Igo, W., Simmons, L.G., Wildt, D.E. and Rieffenberger, D.J. 1994. Oocyte recovery and maturation in the American black bear (*Ursus americanus*): a model for endangered ursids. *Journal of Experimental Zoology* 269: 53–61.
- Karesh, W.A. and Cook, R.A. 1995. Applications of veterinary medicine to in situ conservation efforts. *Oryx* 29: 244–248.
- Kemp-McCarthy, D. 1990. *An investigation into several aspects of the use of natural mineral springs (Horas) within and around Bale Mountains National Park, southern Ethiopia*. MSc Thesis, Zoology Department, Leicester University, U.K., 175 pp.
- Kennedy, P.K., Kennedy, M.L., Clarkson, P.L. and Liepins, I.S. 1991. Genetic variability in natural populations of the gray wolf, *Canis lupus*. *Canadian Journal of Zoology* 69: 1183–1188.
- Kenward, R.E. 1987. *Wildlife radio tagging*. Academic Press, London, 222 pp.
- Kenward, R.E. and Hodder, K.H. 1996. *Range V: an analysis system for biological location data*. Institute of Terrestrial Ecology, Natural Environment Research Council, Cambridge, UK, 66 pp.
- King, A.A., Meredith, C.D. and Thomson, G.R. 1993. Canid and viverrid rabies viruses in South Africa. *Onderstepoort Journal of Veterinary Research* 60: 295–299.
- Kingdon, J. 1990. *Island Africa*. Collins, London.
- Kleiman, D.G. 1989. Reintroduction of captive animals for conservation. *Bioscience* 39: 152–160.
- Kleiman, D.G., Stanley Price, M.R. and Beck, B.B. 1994. Criteria for reintroductions. Pp. 287–303 in P.J.S. Olney, G.M. Mace, and A.T.C. Feistner, eds. *Creative conservation: interactive management of wild and captive animals*. Chapman & Hall, London.
- Kruuk, H., Gorman, M. and Parish, T. 1980. The use of ⁶⁵Zn for estimating populations of carnivores. *Oikos* 34: 206–208.
- Kurtén, B. 1968. *Pleistocene mammals of Europe*. Aldine Publishing Co., Chicago, 317 pp.
- Lacy, R.C. 1987. Loss of genetic diversity from managed populations: interacting effects of drift, mutation, immigration, selection, and population subdivision. *Conservation Biology* 1: 143–158.
- . 1993. VORTEX: A computer simulation model for population viability analysis. *Wildlife Research* 20: 45.
- Lacy, R.C. and Clark, T.W. 1993. Simulation modeling of American marten (*Martes Americana*) populations vulnerability to extinction. *Great Basin Naturalist* 53:

References

- 282–292.
- Lacy, R.C., Hughes, K.A. and Miller, P.S. 1995. VORTEX: a stochastic simulation for the extinction process. Version 7 Users Manual. IUCN/SSC/Conservation Breeding Specialist Group, Apple Valley, Minneapolis.
- Lande, R. 1995. Mutation and conservation. *Conservation Biology* 9: 782–791.
- Lande, R. and Barrowclough, G.F. 1987. Effective population size, genetic variation, and their use in population management. Pp. 87–123 in M.E. Soulé, ed. *Viable populations for conservation*. Cambridge University Press, Cambridge, UK.
- Laurenson, M.K. 1996. *Ethiopian wolves, domestic dogs, disease and hybridisation: towards a management solution*. Unpublished report. Institute of Zoology, Zoological Society of London. 32 pp.
- Lehman, N., Eisenhawer, A., Hansen, K., Mech, L.D., Peterson, R.O., Gogan, P.J.P. and Wayne, R.K. 1991. Introgression of coyote mitochondrial DNA into sympatric North American gray wolf populations. *Evolution* 45: 104–119.
- Lehman, N., Clarkson, P., Mech, L.D., Meier, T.J. and Wayne, R.K. 1992. A study of the genetic relationships within and among wolf packs using DNA fingerprinting and mitochondrial DNA. *Behavioural Ecology and Sociobiology* 30: 83–94.
- Lindenmayer, D.B. and Possingham, H.P. 1996. Ranking conservation and timber management options for leadbeaters possum in southeastern Australia using population viability analysis. *Conservation Biology* 10: 235–251.
- Maas, B. 1993. Bat-eared fox behavioural ecology and the incidence of rabies in the Serengeti National Park. *Onderstepoort Journal of Veterinary Research* 60: 389–393.
- Macdonald, D.W. 1993. Rabies and wildlife: a conservation problem? *Onderstepoort Journal of Veterinary Research* 60: 351–355.
- Macdonald, D.W. 1996. *Nature*.
- Macdonald, D.W., Artois, M., Aubert, M., Bishop, D.L., Ginsberg, J.R., King, A., Kock, N. and Perry, B.D. 1992. Cause of wild dog deaths. *Nature* 360: 633–634.
- Magembe, S.R. 1985. Epidemiology of rabies in the United Republic of Tanzania. Pp. 392–398 in E. Kuert, C. Merieux, H. Koprowski, and K. Bögel, eds. *Rabies in the tropics*. Springer Verlag, Berlin.
- Magin, C.D., Johnson, T.H., Groombridge, B., Jenkins, M. and Smith, H. 1994. Species extinction, endangerment and captive breeding. Pp. 3–31 in P.J.S. Olney, G.M. Mace, and A.T.C. Feistner, eds. *Creative conservation: interactive management of wild and captive animals*. Chapman & Hall, London.
- Malcolm, J.R. 1984. The range and status of the Simien fox (*Canis simensis*). Pp. 19–27 in *The canid conservation dossier. Proceedings of Helsinki meeting on endangered canids (1982)*. IUCN/SSC Canid Specialist Group, Oxford.
- 1995. *Potential diseases of Ethiopian wolves in the Bale Mountains*. Preliminary report. Unpublished report. Ethiopian Wildlife Conservation Organisation. 6 pp.
- In press. The diet of the Ethiopian wolf (*Canis simensis*) from a grassland area of the Bale Mountains, Ethiopia. *African Journal of Ecology*.
- Malcolm, J.R., Fekadu Shiferaw, Samson Bayu, and Wolde Gabre. 1994. *Status of the Ethiopian wolf in the Bale Mountains National Park*. Unpubl. report. Ethiopian Wildlife Conservation Organisation. 2 pp.
- Maldonado, J.E., Davila, F.O., Stewart, B.S., Gefen, E.G. and Wayne, R.K. 1995. Intraspecific genetic differentiation in California sea lions (*Zalophus californianus*) from southern California and the Gulf of California. *Marine Mammal Science* 11: 46–58.
- Mangel, M. and Tier, C. 1994. Four facts every conservation biologist should know about persistence. *Ecology* 75: 607–614.
- Mann, P.C., Bush, M., Appel, M.G., Beehler, B.A. and Montali, R.J. 1980. Canine parvovirus infection in South American canids. *Journal of the American Veterinary Medical Association* 177: 779–783.
- Mateos, Ersado, and Leykun, Abunie. 1992. *Report on the preliminary assessment of the Ghera Mider (Minzena Gishe) Simien fox range – Northern Shoa*. Unpublished Report. Ethiopian Wildlife Conservation Organisation, Addis Ababa, Ethiopia. 13 pp.
- May, R. 1990. Taxonomy as destiny. *Nature* 347: 129–130.
- Maydon, H.C. 1925. *Simien, its heights and abysses. a record of travel and sport in Abyssinia*. H.F. & G. Witherby, London, 235 pp.
- McCallum, H. and Dobson, A. 1995. Detecting disease and parasite threats to endangered species and ecosystems. *Trends in Ecology and Evolution* 10: 190–194.
- McCormack, A.E. 1983. Canine distemper in African Cape hunting dogs – possibly vaccine induced. *Journal of Zoo Animal Medicine* 14: 66–71.
- McInnes, E.F., Burroughs, R.E.J. and Duncan, N.M. 1992. Possible vaccine-induced canine distemper in a South American bush dog (*Spheothos venaticus*). *Journal of Wildlife Diseases* 28: 614–617.
- McOrist, S., Bold, R., Jones, T.W., Easterbee, N., Hubbard, A.L. and Jarret, O. 1991. Some viral and protozoal diseases in the European wildcat (*Felis*

- silvestris*).
- Mebatsion, T., Cox, J.H. and Frost, J.W. 1992a. Isolation and characterization of 115 street rabies virus isolates by using monoclonal antibodies: identification of 2 isolates as Mokola and Lagos bat viruses. *Journal of Infectious Diseases* 166: 972–977.
- Mebatsion, T., Sillero-Zubiri, C., Gottelli, D. and Cox, J.H. 1992b. Detection of rabies antibodies by ELISA and RFFIT in unvaccinated dogs and in the endangered Simien jackal (*Canis simensis*) of Ethiopia. *Journal of Veterinary Medicine, Series B* 39: 233–235.
- Mech, L.D. 1970. The wolf. Doubleday, New York, 384 pp.
- Mercure, A., Ralls, A.K., Koepfli, K.P. and Wayne, R.K. 1993. Genetic subdivisions among small canids: mitochondrial DNA differentiation of swift, kit, and Arctic foxes. *Evolution* 47: 1313–1328.
- Mesfin Wolde-Mariam. 1972. *An introductory geography of Ethiopia*. University Press, Addis Ababa.
- Messerli, B., Hurni, H., Kienholz, H. and Winiger, M. 1977. *Bale Mountains: largest Pleistocene mountain glacier system of Ethiopia*. INQA Abstracts, Birmingham.
- Miehe, G. and Miehe, S. 1993. On the physiognomic and floristic differentiation of ericaceous vegetation in the Bale Mountains, SE Ethiopia. *Opera Botanica* 121: 85–112.
- Miehe, S. and Miehe, G. 1994. *Ericaceous forests and heathlands in the Bale Mountains of South Ethiopia. Ecology and man's impact*. Stiftung Walderhaltung in Afrika, Hamburg.
- Miller, B., Biggins, D., Hanebury, L. and Vargas, A. 1994. Reintroduction of the black-footed ferret (*Mustela nigripes*). Pp. 455–464 in P.J.S. Olney, G.M. Mace, and A.T.C. Feistner, eds. *Creative conservation: interactive management of wild and captive animals*. Chapman & Hall, London.
- Mills, M.G.L. 1996. Methodological advances in capture, census, and food-habits studies of large African carnivores. Pp. 223–242 in J.L. Gittleman, ed. *Carnivore behavior, ecology, and evolution*, Second Ed. Cornell University Press, Ithaca and London.
- Mills, L.S., Hayes, S.G., Baldwin, C., Wisdom, M.J., Citta, J., Mattson, D.J. and Murphy, K. 1996. Factors leading to different viability predictions for a grizzly bear data set. *Conservation Biology* 10: 863–873.
- Montali, R.J., Bartz, C.R., Teare, J.A., Alen, J.T., Appel, M.J.G. and Bush, M. 1983. Clinical trials with canine distemper vaccines in exotic carnivores. *Journal of the American Veterinary Medical Association* 183: 1163–1167.
- Mooney, H. 1963. An account of two journeys to the Araenna Mountains in Bale Province (South East Ethiopia) 1958 and 1959–60. *Proceedings of the Linnean Society of London* 172: 127–147.
- Morin, P.A., Moore, J.J., Chakraborty, R., Jin, L., Goodall, J. and Woodruff, D.S. 1994. Kin selection, social structure, gene flow and the evolution of chimpanzees. *Science* 265: 1193–1201.
- Morris, P.A. and Malcolm, J.R. 1977. The Simien fox in the Bale Mountains. *Oryx* 14: 151–160.
- Müller, J.P. 1977. Populationsökologie von *Arvicanthus abyssinicus* in der grasstepe des Simien Mountains National Park (Äthiopien). *Zeitschrift für Säugetierkunde* 42(3): 145–172.
- Nicol, C. 1971. *From the roof of Africa*. Hodder and Stoughton, London, 362 pp.
- Nievergelt, B. 1981. *Ibexes in an African environment*. Ecological Studies edition. Volume 40. Springer-Verlag, Berlin, Germany, 189 pp.
- . 1996. *Field study on the flora and fauna of the Simen Mountains: a summarized and immediate report referring to some major issues related to conservation and development of the area*. Unpublished Report. 5 pp.
- Novak, R.M. and Paradiso, J.L. (eds.). 1983. *Walker's mammals of the world*. 4th edition. Volume I. The Johns Hopkins University Press, Baltimore.
- O'Brien, S.J. and Evermann, J.F. 1988. Interactive influence of infectious disease and genetic diversity in natural populations. *Trends in Ecology and Evolution* 3: 254–259.
- O'Brien, S.J. and Mayr, E. 1991. Species hybridization and protection of endangered animals. *Science* 253: 251–252.
- O'Brien, S.J., Joslin, S.J.P., Smith, G.L., Wolfe, R., Heath, E., Otte-Joslin, J., Rawal, P.P., Bhattacherjee, K.K. and Martenson, J.S. 1987. Evidence for African origin of founders of the Asiatic lion species survival plan. *Zoo Biology* 6: 99–116.
- O'Brien, S.J., Roelke, M.E., Yuhki, N., Richards, K.W., Johnson, W.E., Franklin, W.L., Anderson, A.E., Bass, O.L., Belden, R.C. and Martenson, J.S. 1990. Genetic introgression within the Florida panther *Felis concolor coryi*. *National Geographic Research* 6: 485–494.
- Packer, C., Gilbert, D.A., Pusey, A.E. and O'Brien, S.J. 1991. A molecular genetic analysis of kinship and cooperation in African lions. *Nature* 351: 526–565.
- Patterson, B.D. 1984. Mammalian extinctions and biogeography in the southern Rocky mountains. Pp. 247–293 in M.H. Nitecki, ed. *Extinctions*. Chicago University Press, Chicago.
- Phillips, M.K. and Parker, W.T. 1988. Red wolf recovery: progress report. *Conservation Biology* 2:

References

- 139–144.
- Powell-Cotton, P.H.G. 1902. *A sporting trip through Abyssinia*. Rowland Ward Ltd., London, 531 pp.
- Quattro, J.M. and Vrijenhoek, R.C. 1989. Fitness differences among remnant populations of the endangered Sonoran topminnow. *Science* 245: 976–978.
- Ralls, K. and Ballou, J.D. 1983. Extinctions: lessons from zoos. Pp. 164–184 in C.M. Schonewal-Cox, S.M. Chambers, B. MacBryde, and L. Thomas, eds. *Genetics and conservation: a reference manual for managing wild animal and plant populations*.
- Ralls, K., Ballou, J.D. and Templeton, A.R. 1988. Estimates of lethal equivalents and the costs of inbreeding in mammals. *Conservation Biology* 2: 185–193.
- Roelke-Parker, M.E., Munson, L., Packer, C., Kock, R., Cleaveland, S., Carpenter, M., O'Brien, S.J., Pospischill, A., Hofmann-Lehmann, R., Lutz, H., Mwamengele, G.L.M., Mgasa, M.N., Machange, G.A., Summers, B.A. and Appel, M.J.G. 1996. A canine distemper virus epidemic in East African lions (*Panthera leo*). *Nature* 379: 441–445.
- Rothschild, W. 1901. Exhibition of, and remarks upon, a specimen of the Abyssinian wolf (*Canis simensis* Rüpp.). *Proceedings of the Zoological Society of London* 2: 283–284.
- Roy, M.S., Geffen, E., Smith, D., Ostrander, E. and Wayne, R.K. 1994a. Patterns of differentiation and hybridization in North American wolf-like canids revealed by analysis of microsatellite loci. *Molecular Biology and Evolution* 11: 553–570.
- Roy, M.S., Girman, D.J. and Wayne, R.K. 1994b. The use of museum specimens to reconstruct the genetic variability and relationships of extinct populations. *Experientia* 50: 551–557.
- Rüppell, E. 1835. *Neue wirbelthiere zu der fauna von Abyssinien gehörig. Säugethiere*. Siegmund Schmerber, Frankfurt a. M, 40 pp.
- Seal, U.S. 1986. Goals of captive propagation programmes for the conservation of endangered species. *International Zoo Yearbook* 24/25: 174–179.
- Seal, U.S. *et al.* 1994.
- Seal, U.S., Foose, T.J. and Ellis-Joseph, S. 1994. Conservation assessment and management plans (CAMPs) and global captive action plans (GCAPs). Pp. 312–325 in J. Olney, G.M. Mace and A.T.C. Feistner, eds. *Creative conservation: the interactive management of wild and captive animals*. Chapman and Hall, London.
- Seber, G.A.F. 1973. *The estimation of animal abundance*. Charles Griffen, London.
- Shaffer, M.L. 1981. Minimum population sizes for species conservation. *Bioscience* 31: 131–134.
- Sheldon, J.W. 1992. *Wild dogs. The natural history of the nondomestic canidae*. Academic Press Inc, San Diego, California, 248 pp.
- Sillero-Zubiri, C. 1989. *Report on a visit to the Somkaro Mountains and surrounding areas, Bale Region*. Unpubl. report. Ethiopian Wildlife Conservation Organisation, 6 pp.
- 1994. *Behavioural ecology of the Ethiopian wolf, Canis simensis*. D.Phil. Dissertation, Oxford University, 283 pp.
- 1995. *Ethiopian wolf conservation update*. Unpublished report. IUCN/SSC Canid Specialist Group, Oxford, 17 pp.
- 1996a. Field immobilization of Ethiopian wolves (*Canis simensis*). *Journal of Wildlife Diseases* 32(1): 147–151.
- 1996b. Records of honey badger, *Mellivora capensis*, in afroalpine habitat, above 4,000 m. *Mammalia* 60: 323–325.
- Sillero-Zubiri, C. and Gottelli, D. 1991b. Ethiopia: domestic dogs may doom endangered jackal. *Wildlife Conservation* 94: 15.
- 1993. The plight of the Ethiopian wolf. *Canid News* 1: 10–11.
- 1994. *Canis simensis*. *Mammalian Species* 485: 1–6.
- 1995a. Diet and feeding behavior of Ethiopian wolves (*Canis simensis*). *Journal of Mammalogy* 76: 531–541.
- 1995b. Spatial organization in the Ethiopian wolf *Canis simensis*: large packs and small stable home ranges. *Journal of Zoology (London)* 237: 65–81.
- Sillero-Zubiri, C., Gottelli, D. and Hillman, J.C. 1992. *Proposals for an Ethiopian wolf captive breeding project*. Ethiopia Programme, NYZS, Wildlife Conservation International. 23 pp.
- Sillero-Zubiri, C., Tattersall, F.H. and Macdonald, D.W. 1995a. Bale Mountains rodent communities and their relevance to the Ethiopian wolf (*Canis simensis*). *African Journal of Ecology* 33: 301–320.
- 1995b. Habitat selection and daily activity of giant molerats (*Tachyoryctes macrocephalus*): significance to the Ethiopian wolf (*Canis simensis*) in the Afroalpine ecosystem. *Biological Conservation* 72: 77–84.
- 1995c. Morphometrics of rodents from the Bale Mountains, Ethiopia. *Journal of African Zoology* 109: 387–391.
- Sillero-Zubiri, C., Gottelli, D. and Macdonald, D.W. 1996a. Male philopatry, extra-pack copulations and inbreeding avoidance in the Ethiopian wolf (*Canis simensis*). *Behavioural Ecology and Sociobiology* 38: 331–340.
- Sillero-Zubiri, C., King, A.A. and Macdonald, D.W. 1996b. Rabies and mortality in Ethiopian wolves

- (*Canis simensis*). *Journal of Wildlife Diseases* 32: 80–86.
- Slatkin, M. 1987. Gene flow and the geographic structure of natural populations. *Science* 236: 787–792.
- Smeds, H. 1959. The Batu Mountains of the Bale Plateau, Ethiopia. *Alpine Journal* 64: 217–227.
- Snyder, N.F.R., Derrickson, S.R., Beissinger, S.R., Wiley, J.W., Smith, T.B., Toone, W.D. and Miller, B. 1996. Limitations of captive breeding in endangered species recovery. *Conservation Biology* 10: 338–348.
- Soulé, M.E. 1987. Viable populations for conservation. Cambridge University Press, Cambridge, 189 pp.
- Stäehli, P. 1975. Report on Simien Mountains National Park. *WWF Yearbook 1974–75*. Morges, Switzerland.
- Stanley Price, M.R. 1989. *Animal re-introductions: the Arabian oryx in Oman*. Cambridge University Press, Cambridge, UK.
- Steck, F., Wandeler, A., Bickel, P., Capt, S., Hafliger, U. and Schneider, L. 1982. Oral immunization of foxes against rabies: laboratory and field studies. *Comparative Immunology and Microbiology of Infectious Diseases* 5: 165–171.
- Swanepoel, R., Barnard, B.J.H., Meredith, C.D., Bishop, G., Bruckner, G.K., Foggin, C.M. and Hubschle, O.S.B. 1993. Rabies in southern Africa. *Onderstepoort Journal of Veterinary Research* 60(4): 325–346.
- Taylor, A.C., Sherwin, W.B. and Wayne, R.K. 1994. Genetic variation of microsatellite loci in a bottlenecked species: the northern hairy-nosed wombat (*Lasiorninus krefftii*). *Molecular Ecology* 3: 277–290.
- Taylor, J., Pincus, S., Tartaglia, J., Richardson, C., Alkhatib, G., Brieds, D. and Appel, M.J. 1991. Vaccinia virus recombinants expressing either the measles virus fusion or hemagglutinin glycoprotein protect dogs against canine distemper virus challenge. *Journal of Virology* 65: 4263–4274.
- Templeton, A.R. 1986. Coadaptation and outbreeding depression. Pp. 19–34 in M.E. Soulé, ed. *Conservation biology: the science of scarcity and diversity*. Sinauer, Sunderland, Mass.
- Thorne, E.T. and Williams, E.S. 1988. Disease and endangered species: the black-footed ferret as a recent example. *Conservation Biology* 2: 66–74.
- Todd, I.A. 1992. *WILDTRAK. Non-parametric home-range analysis for Mackintosh computers*. Department of Zoology, University of Oxford, U.K., 89 pp.
- Tudge, C. 1991. *Last animals at the zoo. How mass extinction can be stopped*. Oxford University Press, Oxford, UK.
- Turnbull, P.C.B., Bell, R.H.V., Saigawa, K., Munyembe, F.E.C., Mulenga, C.K. and Makala, L.H.C. 1991. Anthrax in wildlife in Luangwa valley. *Zambia Veterinary Record* 128: 399–403.
- Tyler, S. 1975. The Simien fox. *Wildlife* 17: 564–565.
- Tyndale-Biscoe, C.H. 1994. Virus-vectored immunocontraception of feral mammals. *Reproductive, Fertility and Development* 6: 281–287.
- Vane-Wright, R.I., Humphries, C.J. and Williams, P.H. 1990. What to protect? Systematics and the agony of choice. *Biological Conservation* 55: 235–254.
- van Heerden, J. 1979. The transmission of canine ehrlichiosis to the wild dog *Lycaon pictus* Temminck and the black-backed jackal *Canis mesomelas* Schreber. *Journal of the South African Veterinary Association* 50: 245–248.
- . 1980. The transmission of *Babesia canis* to the wild dog *Lycaon pictus* Temminck and the black-backed jackal *Canis Mesomelas* Schreber. *Journal of the South African Veterinary Association* 51: 119–120.
- van Heerden, J., Bainbridge, N., Burroughs, R.E.J. and Kriek, N.P.J. 1989. Distemper-like disease and encephalitozoonosis in wild dogs (*Lycaon pictus*). *Journal of Wildlife Diseases* 25: 70–75.
- von Heuglin, T. 1863. Beiträge zur zoologie Afrika's. Über einige säugethiere des bäscho-Gebietes. [Contribution to the Africa's zoology about some mammals of the Bäschlo Region]. *Nova Acta Academiae Caesarea Leopoldino-Carolinae Germanicum Naturae Curiosorum* 30: 1–4.
- Wandeler, A.I. 1991. Oral immunization in wildlife. Pp. 485–503 in G.M. Baer, ed. *The natural history of rabies*. Academic Press, New York.
- Waples, R.S. and Teel, D.J. 1990. Conservation genetics of Pacific salmon I. Temporal changes in allele frequency. *Science* 241: 1455–1460.
- Wayne, R.K. 1995. Conservation genetics of canids. Pp. in J.C. Avise, ed. *Population genetics of rare and endangered species*. Chapman and Hall, New York.
- Wayne, R.K. and Jenks, S.M. 1991. Mitochondrial DNA analysis supports extensive hybridization of the endangered red wolf (*Canis rufus*). *Nature* 351: 565–568.
- Wayne, R.K., George, S., Gilbert, D.A., Collins, P., Kovach, S., Girman, D. and Lehman, N. 1991a. A morphologic and genetic study of the island fox, *Urocyon littoralis*. *Evolution* 45: 1849–1868.
- Wayne, R.K., Gilbert, D.A., Eisenhawer, A., Lehman, N., Hansen, K., Girman, D., Peterson, R.O., Mech, L.D., Gogan, P.J.P., Seal, U.S. and Krumenaker, R.J. 1991b. Conservation genetics of the Isle Royale gray wolf. *Conservation Biology* 5: 41–51.
- Wayne, R.K., Lehman, N., Allard, M.W. and Honeycutt, R.L. 1992. Mitochondrial DNA variability of the gray wolf – genetic consequences of population decline

References

- and habitat fragmentation. *Conservation Biology* 6: 559–569.
- WCMC (The Conservation Monitoring Centre). 1992. *Global biodiversity: status of the Earth's living resources*. Chapman & Hall, London.
- Wenink, P.W., Baker, A.J. and Tilanus, M.G. 1993. Hypervariable-control-region sequences reveal global population structuring in a long-distance migrant shorebird the dunlin (*Calidris alpina*). *Proceedings of the National Academy of Sciences of the USA* 90: 94–98.
- White, G.C. and Garrott, R.A. 1990. *Analysis of wildlife radio-tracking data*. Academic Press, London.
- Williams, E.S., Thorne, E.T., Appel, M.J.G. and Belitsky, D.W. 1988. Canine distemper in black-footed ferrets (*Mustela nigripes*) from Wyoming. *Journal of Wildlife Diseases* 24: 385–398.
- Wilson, A.C. and Stanley Price, M.R. 1994. Reintroduction as a reason for captive breeding. Pp. 243–264 in P.J.S. Olney, G.M. Mace, and A.T.C. Feistner, eds. *Creative conservation: interactive management of wild and captive animals*. Chapman & Hall, London.
- Winkler, W.G. and Bögel, K. 1992. Control of rabies in wildlife. *Scientific American* June 1992: 56–62.
- Winkler, W.G. and Jenkins, S.R. 1991. Raccoon rabies. Pp. 325–340 in G.M. Baer, ed. *The natural history of rabies*, 2nd Ed. CRC Press, Boca Raton, Florida.
- Woodford, M.H. and Rossiter, P.B. 1994. Disease risks associated with wildlife translocation projects. Pp. 178–200 in P.J.S. Olney, G.M. Mace, and A.T.C. Feistner, eds. *Creative conservation: interactive management of wild and captive animals*. Chapman & Hall, London.
- Woodroffe, R.B., Ginsberg, J.R. and Macdonald, D.W. 1997. Lycaon Action Plan
- World Health Organisation/World Society of the Protection of Animals. 1990. *Guidelines for dog population management*. WHO, Geneva, Switzerland.
- World Health Organization. 1992. *World survey of rabies*. No 25. WHO/Rabies/92.203. World Health Organisation, Geneva, Switzerland.
- . 1994. *Report of the Fifth WHO consultation on oral immunization of dogs against rabies*. World Health Organization, Geneva, Switzerland.
- Wozencraft, W.C. 1989. Classification of the recent carnivora. Pp. 569–593 in J.L. Gittleman, ed. *Carnivore behavior, ecology and evolution*. Chapman and Hall, London.
- Yalden, D.W. 1975. Some observations on the giant mole rat *Tachyoryctes macrocephalus* of Ethiopia. *Monitore Zoologico Italiano* 15: 275–303.
- . 1983. The extent of high ground in Ethiopia compared to the rest of Africa. *Sinet: Ethiopian Journal of Science* 6: 35–38.
- . 1988. Small mammals of the Bale Mountains, Ethiopia. *African Journal of Ecology* 26: 281–294.
- Yalden, D.W. and Largen, M.J. 1992. The endemic mammals of Ethiopia. *Mammal Review* 22(3/4): 115–150.
- Yalden, D.W., Largen, M.J. and Kock, D. 1980. Catalogue of the mammals of Ethiopia. 4. Carnivora. *Monitore Zoologico Italiano NS Supplemento* 13: 169–272.
- Yamaguchi, N. et al. 1996.
- Zealelem Tefera. 1995. *Community participation in the conservation of natural habitat in Menz area of North Shoa*. Paper presented to Participatory Wildlife Management Workshop, Addis Ababa, Ethiopia, 7 pp.