



International Primatological Society

RESEARCH CAPTIVE CARE EDUCATION CONSERVATION

**CODE OF BEST PRACTICES FOR FIELD
PRIMATOLOGY**

2014

INTRODUCTION

The steering committee invited officers from a broad set of primate societies and institutions across the world to nominate a representative who would then serve as a member of the Full Committee. The steering committee then sent a preliminary draft of this document to those societal and institutional representatives for comments and suggested changes. In reviewing the draft document, committee members were free to consult with members of their respective societies, colleagues, and scholars from a range of related disciplines to improve the document. Therefore, although we list the members of the Full Committee below, many additional primatologists had direct input into the creation of this document.

STEERING COMMITTEE

Name	Affiliation
Erin P. Riley	San Diego State University, USA
Katherine C. MacKinnon	Saint Louis University, USA
Eduardo Fernandez-Duque	Yale University, USA
Joanna M. Setchell	Durham University, UK, Editor-in-Chief, International Journal of Primatology
Paul A. Garber	University of Illinois, USA, Executive Editor, American Journal of Primatology

FULL COMMITTEE

Name	Affiliation
Ilaria Agostini	Instituto de Biología Subtropical, Consejo Nacional de Investigaciones Científicas y Técnicas, Universidad Nacional de Misiones, Argentina
Julio Cesar Bicca-Marques	Pontifical Catholic University of Rio Grande do Sul, Brazil
Ramesh Boonratana	Mahidol University International College, Thailand; International Union for Conservation of Nature Species Survival Commission (IUCN SSC), Primate Specialist Group Regional Vice Chair (SE Asia)
Dilip Chetry	Aaranyak Organization for Primate Conservation, India
Linda Marie Fedigan	University of Calgary, Canada; Santa Rosa National Park, Costa Rica
Romanus Ikfuingei	Wildlife Conservation Society (WCS) Takamanda-Mone Landscape Project; WCS Cross River Gorilla

Entang Iskandar	Conservation Program, Nigeria, Cameroon; IUCN SSC Primate Specialist Group Primate Research Center, Bogor Agricultural University, Indonesia
Martin Kowaleski	Estación Biológica Corrientes, Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Argentina
Angela Maldonado	Scientific Director, Fundación Entropika, Colombia
Innocent Chitalu Mulenga	Director of Research, Chimfunshi Wildlife Orphanage Trust, Zambia
Xiao-Guang Qi	IUCN SSC Asian & Chinese Primatology Specialist Group/China/Asian
Ute Radespiel	Stiftung Tierärztliche Hochschule Hannover, Germany
Fidisoa Rasambainarivo	University of Missouri, St. Louis
Innocent Rwego	University of Minnesota; Makerere University; United States Agency for International Development Respond Program; Uganda
Juan Carlos Serio Silva	Instituto de Ecología, Vera-Cruz, Mexico
Yuji Takenoshita	Faculty of Child Studies, Chubu-Gakuin University
Mauricio Talebi	Universidade Federal de São Paulo, Brazil
Maria Paula Tujague	Instituto de Biología Subtropical, Consejo Nacional de Investigaciones Científicas y Técnicas, Asociación Civil Centro de Investigaciones del Bosque Atlántico, Misiones, Argentina

SOCIETIES REPRESENTED

Asociación Primatológica Argentina; Brazilian Society of Primatologists; European Federation of Primatology; Colombian Primatological Society; Latin American Society of Primatology; Primate Society of Japan Committee for Conservation and Wellbeing; Southeast Asian Primatological Association (SeAPA).

PREAMBLE

In general, primatologists adhere to a set of principles outlined in resolutions and policy statements on the ethical treatment of nonhuman primates, particularly in captivity and biomedical contexts. As noted in a 2010 special section of the *American Journal of Primatology* (Vol. 72, No. 9), field research on primates, particularly observational work, has been subject to less public scrutiny and ethical regulation than laboratory research involving primates. The “3Rs” of Replacement, Reduction, and Refinement that usually characterize animal care forms required by institutions for permission to conduct primate research are generally of limited value and relevance for field-based studies, except in projects that involve animal trapping, handling, and collaring, the invasive collection of biological samples, and experimental field research. Field projects are subject to complex ethical considerations in relation to both nonhuman primates and the local human communities that surround them, necessitating reflection on the positive and negative effects of the presence of field researchers (Fedigan 2010). This reality requires us to acknowledge our responsibility to respect the well-being of people, as well as animals and their habitats, and places our responsibility towards our study subjects in the context of the local cultures, societies at large, and the global environment in which we live (Curtis & Setchell 2003; MacKinnon & Riley 2010; Malone et al. 2010).

To this end, a committee of field primatologists representing major primatological societies and organizations from Africa, Asia, Europe, and North, Central, and South America have come together to craft a “code of best practices” to help field primatologists navigate the contemporary ethical landscape. A code of best practices is defined as a set of guidelines that represent a well-informed, thoroughly considered, prudent course of action. The set of guidelines outlined herein, drawn from relevant educational materials and the committee’s experiences, is meant to be shared with a broader audience of students, researchers, governmental officials, non-governmental organizations (NGOs), granting agencies, and university administrators across a wide range of field settings.

The purpose of these guidelines is to highlight a set of ethical issues that should be considered in conducting field research and a set of practices that could be employed when confronting those ethical issues. These guidelines also are intended to provide a framework for laboratory researchers who collaborate with field researchers in analyzing biological samples, and to assist editors, editorial boards, reviewers, and authors of scholarly journals in primatology in evaluating current research practices and in making publication decisions. They cover some of the main issues requiring consideration from an ethical point of view when studying nonhuman primates. The guidelines are not intended to be exhaustive, or to dictate choice or propose sanctions. Rather, they are designed to encourage primatologists and institutions, organizations, and funding/donor agencies that support them to reflect on their procedures and to initiate broader discussions on how to best fulfill our responsibilities as educators and scientists to study,

conserve, respect, and benefit wild primate populations, their habitats, and the local human communities.

These guidelines work in conjunction with existing ethical statements developed by the International Primatological Society and the American Society of Primatologists¹. Collectively, they should be viewed as practices that will facilitate ethical research objectives and contribute to the protection and conservation of primate populations and habitats. These guidelines also emphasize that a commitment to using ethical best practices is a commitment to using all of the knowledge at one's disposal, as well as a commitment to include individuals in local communities, academic institutions, NGOs, and governmental organizations as stakeholders in developing the human capital required to ensure long-term environmental sustainability.

Our committee advocates the use of a risk analysis approach (Strier 2010), which weighs both the positive and negative impacts when considering the ethical dimensions of a field project, and recommends that primatologists consider the following points when designing and implementing field projects (MacKinnon & Riley 2010).

RESPONSIBILITY/DO NO HARM

At the most basic level, field primatologists have fundamental ethical obligations to the species that they study and to the people with whom they work or interact with during the course of the study.

One of the primary goals of an ethics code advocating 'responsibility' and 'do no harm' principles is to focus attention on the animals with whom researchers work and on the people whose lives and cultures the work affects. Responsible weighing of the primary ethical obligations against the goal of seeking new knowledge and other responsibilities (e.g., those owed to sponsors or clients, members of the local community, the animals or ecological system studied) can lead to the decision not to undertake a given project or to discontinue a research project. Such ethical obligations include:

- (a) avoiding harm or wrongdoing, understanding that the development of knowledge can lead to change which may be positive or negative for the animals studied or people with whom we work or among whom we work.
- (b) respecting the well-being of humans and nonhuman primates;
- (c) reflecting on the possible benefits and negative effects of their presence and field methods on their study subjects, the ecosystem, local biodiversity, and the local human community.
- (d) consulting actively with the people in a study area, with the goal of establishing a working relationship that can be beneficial to all parties involved.
- (e) working for the long-term conservation and management of nonhuman primate

populations and the habitats they live in. This may include highlighting in publications the specific threats and most pressing conservation issues that the study population or species faces;

What follows is a list of the primary issues field primatologists should consider in the development, implementation, and dissemination of their research.

1. RESPONSIBILITIES TO THE ANIMALS WITH WHOM RESEARCHERS WORK

Primatologists should abide by the specific guidelines for the use of animals developed by discipline-based organizations such as the American Psychological Association², American Society of Mammalogists³, Animal Behavior Society/Association for the Study of Animal Behaviour⁴, the Society for Neuroscience⁵ and/or of national and international offices focused on research (e.g. Sociedad Argentina de Especialistas en Mamíferos, Brazil's new law on the use of animals in research). These guidelines are generally applicable to primatological research. However, the specific recommendations developed by these societies may not address the special considerations that apply to working with primates completely.

- (a) Primatologists should accept the responsibility of stewardship for nonhuman primates, and this responsibility must be reflected in our husbandry practices and research protocols whether in field, laboratory, or other settings. Primatologists can and should be the strongest advocates for the conservation and humane treatment of primates.
- (b) Primatologists should accept the obligation to abide by relevant international, federal, state and local regulations concerning the welfare of captive animals.
- (c) The World Health Organization and Ecosystem Conservation Group policy statements on the use of primates for biomedical purposes should be consulted. Individuals of endangered species should not be collected in the wild for use in biomedical research, unless the research holds promise for improving the health and conservation efforts on behalf of those species. Because 'least concern' species may become 'threatened' species in the future, the decision to collect individuals (from species currently categorized with lower levels of risk) for use in biomedical research should be thoroughly considered with regards to alternatives, advantages and disadvantages, and all relevant international, federal, state and local regulations concerning the welfare of captive animals.
- (d) In all cases, the potential benefits of any research should be evaluated against the potential risks to the nonhuman primate subjects. Killing wild primates to collect biomedical, genetic, physiological, or other information should be avoided. This is especially true when other data collection methods, even those that are more expensive, more difficult, or require more time, are available. If after the thorough consideration of

all possible alternatives, and in agreement with all institutional and national regulations, it is deemed necessary to collect, it is imperative that the minimum required for valid research results be collected. There continues to be an ongoing debate concerning the collection of voucher specimens for the taxonomic identification of populations, and we encourage all primatologists to consider alternatives (Minteer *et al.* 2014). The capturing of primates (and other forms of manipulation) also warrants careful consideration and compliance with local customs, as well as local, national and international regulations. In addition, consideration must be given to the costs and benefits of habituating wild primate groups that live within protected sites, where the probability of contact with the local human community is relatively low, compared to habituating groups living in closer proximity to humans.

- (e) Non-invasive, or minimally invasive, sampling should be used whenever possible. The decision to conduct invasive or lethal sampling must be justified in scientific reports and publications.
- (f) The number of nonhuman primates used in any procedure that involves capture, invasive sampling, holding animals in captivity, collaring, marking, or collection for taxonomic purposes when strictly necessary should be the minimum required for valid research results. Animal stress and suffering should be kept to a minimum in all these procedures. Researchers who capture or handle wild primates should employ procedures that avoid/minimize pain and distress at every opportunity, and have a carefully developed plan of action or intervention in cases in which an animal is injured and requires veterinary care or must be euthanized. Captures should be used only when there is no other way to obtain the information/biological samples required using a less invasive methodology. If capture cannot be avoided, researchers should minimize direct contact with primates and use validated protocols to prevent disease transmission. Study animals should be exposed to the least possible number of researchers.
- (g) Studies involving field experiments including playback of vocalization, predator models, novel problem-solving tasks, or other manipulations should act to minimize risk to the animals. A goal of experimental field research must be to employ the least disruptive research design that results in new knowledge and, where possible, to conduct field experiments on non-endangered species.

2. RESPONSIBILITIES TO THE ECOSYSTEM IN WHICH THE ANIMALS LIVE

Researchers should consider the consequences of their presence and research for the study animals and environment carefully. This should include knowledge of a species' natural history to improve management and enrich environments, because physical and psychological well-being are essential not only to the health of the animal, but also to the validity of the research

results. Field studies can result in potentially negative consequences for study subjects and their environment, including disease transmission, presence of human waste and garbage, the effects of trails and trail traffic on vegetation, the influence of the presence of human observers, habituation and provisioning of study animals, and decreased protection from hunting resulting from habituation (Goldberg 2008; Köndgen et al. 2008; Pusey et al. 2008; Walsh 2008; Fedigan 2010; Strier 2010; Bezanson et al. 2013; Gruen et al., 2013). Cutting vegetation, especially mature trees, for the purposes of making trails should be minimized, and practices to reduce soil erosion on trails should be considered. Biodegradable materials are best used to mark trails or trees, especially in those cases in which a researcher has no plans to continue her/his research.

Primatologists should consider the implications of short-term versus long-term research at their respective study sites. Both models come with costs and benefits. A long-term research presence can mean that some primates will never experience life without human observers, and one should be cognizant of this ecological footprint (Strier 2010). At the same time, a long-term research presence may also result in increased protection of primates from hunting, thereby outweighing the potential costs of this footprint. For example, in Tai National Park, Cote d'Ivoire, researchers found the presence of researchers to be a strong predictor of increased primate population densities, particularly for threatened or over-harvested species (Campbell et al. 2011; Nekaris & Nijman 2013).

3. RESPONSIBILITIES TO THE PEOPLE WHOSE LIVES AND CULTURES THE WORK AFFECTS

The contemporary fieldwork environment presents an increasingly complex landscape on which to engage both human and nonhuman primate needs and interests. The ability to work within the local cultural context is often the key variable determining success in field primatology (MacKinnon & Riley 2013). Field primatologists should recognize that there are many things to learn from traditional knowledge that can help to improve their research and that certain local traditions may have positive effects on the survival of primates and the forests they exploit. In addition, prior to going to the field or soon after arrival, it is advisable to learn how members of the local communities and cultures regard individual primate species, for example, as ancestors to be respected or as crop-raiders to be killed. Finally, given that the local community is an important stakeholder in the successful outcome of most research projects, it is critical to explain the significance of the study and the details of the project to the local communities prior to beginning the research.

- (a) When conducting and disseminating their work, primatologists should think carefully about the possible negative impact of their project findings on the well-being of local human communities. Field primatologists must determine in advance whether their

hosts/providers of information wish to remain anonymous or receive recognition, and comply with those wishes.

- (b) If the research involves human subjects (i.e., a living individual about whom a researcher obtains data through intervention or interaction with the individual or from individually identifiable information), field primatologists should obtain human subjects research approval. Information from ethics committees and guidelines for protecting human subjects are available on-line at many universities. Such protocols will require the researcher to carefully reflect on the operational practicalities of conducting research, potential risks to the participants, and ways to mitigate risks. Protocols also require the informed consent of persons providing information. The degree and breadth of informed consent required will depend on the nature of the project and may be affected by requirements of other codes, laws, and ethics of the country or community in which the research is pursued. Further, the informed consent process is dynamic and continuous; the process should be initiated during the project design and continue through implementation by way of dialogue and negotiation with those involved. Researchers must present their research participants with the possible impacts of the choices they make or information they provide (for example, incriminating information from hunters who illegally trap or kill primates, images obtained from camera traps that could be used to embarrass or prosecute members of the local community) and make clear that confidentiality cannot be guaranteed, despite the fieldworker's best efforts.
- (c) Field primatologists who have developed close and enduring relationships (i.e., covenantal relationships) either with individual persons providing information/assistance or with hosts must adhere to the obligations of openness and informed consent, while carefully and respectfully negotiating the limits of the relationship.
- (d) While field primatologists may gain personally from their work, they must not exploit individuals, groups, animals, or cultural and biological materials. They should recognize their debt to the societies in which they work and their obligation to reciprocate with host people in appropriate ways that reflect the expectations and regulations of the countries and communities where they work. This might include, with community consent, offering conservation presentations targeted at both younger and older audiences (Dolins et al. 2010; Kuhar et al. 2010) or good faith efforts of sponsoring habitat country researchers at one's home university.
- (e) Hunting for personal consumption by traditional populations is legal in some regions. This is the case in parts of the Amazon, for example, where bushmeat may represent an important source of animal protein for populations living in remote regions. Although, as researchers, we may not approve of this practice, from the point of view of conservation ethics vilifying these ancestral and legitimate cultural practices is usually not the best approach of collaborating with local people, or sharing our values and learning about theirs. However, one should study whether these practices are sustainable and identify

ways of reducing hunting pressure and promoting the long-term conservation of primate populations.

4. EDUCATING AND MENTORING THE NEXT GENERATION OF PRIMATOLOGISTS

Primatologists have a responsibility to train and mentor the next generation of field primatologists.

(a) To accomplish this training, educational programs in primatology, anthropology, zoology, and biology should be encouraged to develop a set of professionalization workshops. Having such knowledge prior to beginning a research project is essential for both the success of the project and accepted ethical practices. It is the responsibility of the teaching staff to make certain that students and researchers are provided with access to relevant publications and websites on issues such as:

- i. The Convention on International Trade in Endangered Species (CITES) and procedures required to obtain necessary permits from one's home institution, national government, and habitat country where the research will take place (this might include permission to collect biological samples of animals and plants, export and import permits, proper handling, storage, and shipping);
- ii. The preparation and submission of final reports to local governments and granting agencies;
- iii. The process of hiring, compensating, and managing local field assistants and local university students;
- iv. The process of publishing, and the rights and responsibilities of coauthorship;
- v. Procedures to report poaching or illegal activities at field site;
- vi. Cultural expectations, appropriate and inappropriate behaviour;
- vii. Identifying situations in which the needs of the local people may conflict with the needs of study animals;
- viii. Best practices for purchasing goods and supplies from the local community;
- ix. How to anticipate and avoid conflicts at field sites when two research teams are simultaneously conducting independent projects;
- x. The preparation of a risk assessment analysis weighing the appropriate ethical concerns of the planned work against seeking new knowledge.

(b) Field primatologists should actively encourage their students to think critically about the code of best practices and to present them with 'what if' scenarios to discuss and refer back to once they are in the field. Such initial exploration of these topics might also include: information on a particular region's history; the ethnic groups and cultural identities currently present; the socio-economic status of people in cities versus more

rural areas; and cultural taboos. Field schools, coursework, and/or a required seminar before students engage in any type of independent field research should be viewed as essential.

- (c) Another important ethical consideration is the issue of capacity building of habitat country nationals. It is the ethical responsibility of scientists to actively engage in the training of university students, conservation managers, and protected area staff of the countries or within-country regions in which they work. It is, therefore, good practice for foreigners to design projects with the potential roles of habitat country nationals in mind. In doing so it is critical to understand that students and researchers from outside habitat countries and students and researchers from range countries are not the supporters and the supported, but each can educate the other by integrating their individual knowledge, experience, and perspectives.

5. OTHER PROFESSIONAL RESPONSIBILITIES

- (a) Primatologists should advocate the creation of national laws and the establishment of institutional animal care advisory committees aimed at providing the appropriate rules for the ethical and humane treatment of primates involved in field and captive research.
- (b) An important ethical responsibility of all field researchers, including primatologists, is to obtain all relevant permits required to conduct research. Increasingly, funding organizations require evidence of permits before they disburse funds and scientific journals may require a statement of adherence to ethical guidelines and receipt of required research permits prior to publishing a manuscript.
- (c) Dissemination of information is critical and research should be published in a timely manner so that the information is accessible to the primatological community and habitat country institutions. Foreign field primatologists should make every effort to publish with their host country collaborators and assistants, and copies of publications, translated in the language used by nationals of the habitat country, should be made available to governmental and educational institutions whenever possible.
- (d) Primatologists should think carefully about the ways in which they disseminate their scientific findings and should invest every effort to inform and educate the mass media, and when applicable, to avoid the use of a sensationalist language that may have negative consequences for the conservation of primates and the credibility of scientific research.

RESOURCES FOR ADDITIONAL INFORMATION AND ETHICAL GUIDANCE

Animal Behavior Society. 1991. 'Guidelines for the Use of Animals in Research', *Animal Behavior* 41: 183–86.

- National Academy of Sciences*. 1995. *On Being a Scientist: Responsible Conduct in Research*, 2nd ed. Washington, DC: National Academy Press (2121 Constitution Avenue, NW, Washington, DC 20418).
- National Association for the Practice of Anthropology*. 1988. 'Ethical Guidelines for Practitioners. Sigma Xi. 1992. Sigma Xi Statement on the Use of Animals in Research', *American Scientist* 80: 73–76.
- Society for Applied Anthropology*. 1983 (revised). Professional and Ethical Responsibilities.
- [IPS International Guidelines for the Acquisition Care and Breeding of Nonhuman Primates, Second Edition](#). 2007. This set of guidelines has been translated into several languages.
- [Guidelines for Ethical Conduct in the Care and Use of Animals](#). American Psychological Association, Washington D.C., 1992.
- [Guidelines for the Capture, Handling and Care of Mammals](#) as approved by the American Society of Mammalogists, 1998.
- [Guidelines for the treatment of animals in behavioural research and teaching](#). *Animal Behaviour*, 55, 251-257, 1998.
- [Policy on the Humane Care and Use of Laboratory Animals](#). NIH Office for Protection from Research Risks, Rockville, MD, 1986.
- [The Psychological Well-Being of Non-Human Primates](#). Institute for Laboratory Animal Research, National Research Council. National Academy Press, Washington D.C. 1998.
- US [Animal Welfare Act](#), As Amended (1966 Act plus all amendments through 1990). United States Code, Title 7, Sections 2131-2156.
- U.S. Fish and Wildlife Service [Endangered Species Act](#) of 1973.
- [Convention on the International Trade in Endangered Species of Wild Fauna and Flora \(CITES\)](#). Agreement signed in Washington D.C., 1973; amended in Bonn 1979.
- Code of ethics of the American Anthropological Association. 2009.
(http://www.aaanet.org/cs_upload/issues/policy-advocacy/27668_1.pdf)
- Convention on Biological Diversity (Bonn Guidelines, Nagoya agreement):
<http://www.cbd.int/abs/>
- Convención Internacional para el Intercambio de Especies Amenazadas (CITES):
<http://www.cites.org/esp/disc/text.php>
- [Guidelines for Conservation through Community Involvement](#)
- Special Issue of the *American Journal of Primatology* (2010, Vol 72, No. 9). Ethical Issues in Field Primatology pp.

- Special Issue of the *American Journal of Primatology* (2010, Vol 72, No. 5).749-793.
Conservation Education pp. 377-466.
- Special Issue of the *American Journal of Primatology* (2008 Vol. 70, No. 8). Disease
Transmission, Ecosystems Health, and Great Ape Research pp. 715-765.
- Primate Society of Japan (2013). Guidelines for the Care and Use of Laboratory Nonhuman
Primates (in Japanese). *Primate Research*, 29: 45-53, doi: 10.2354/psj.29.012. (also
available from <http://primate-society.com/psj/psj3.pdf>).
- Reglamento del comité de Ética del Consejo Nacional de Investigaciones Científicas y Técnicas,
Argentina. Available via:
<http://web.conicet.gov.ar/documents/11716/0/OCR+RD+20050502-0613.pdf>
- Principios éticos para el comportamiento del investigador científico y tecnológico. Consejo
Nacional de Investigaciones Científicas y Técnicas, Argentina. Available via:
<http://web.conicet.gov.ar/documents/11716/0/OCR+RD+20060322-0540.pdf>
- Animal Ethics Infolink. <http://www.animaethics.org.au/policies-and-guidelines/wildlife-research/voucher-specimens>
- Brasil (2005) Manual de vigilância de epizootias em primatas não-humanos. Ministério da Saúde,
Secretária de Vigilância em Saúde. Brasília: Ministério da Saúde, 2005. Available at
ftp://ftp.cve.saude.sp.gov.br/doc_tec/zoo/Manual_VigEpizootias.pdf. Username and
password required.
- Brasil (2013) Resolução Normativa CONCEA N°12/2013 Diretriz brasileira para o cuidado e a
utilização de animais para fins científicos e didáticos – DBCA (Diário Oficial da União N°
186, 25 de setembro de 2013). Available at
<http://pesquisa.in.gov.br/imprensa/jsp/visualiza/index.jsp?jornal=1&pagina=52&data=25/09/2013>
- IBAMA (2007) Instrução Normativa Ibama N°154/2007. Available at
http://www.icmbio.gov.br/sisbio/images/stories/instrucoes_normativas/IN_154_coleta.pdf
- IBAMA (2007) SISBIO: Manual do usuário. Available at
http://www.icmbio.gov.br/sisbio/images/stories/instrucoes_normativas/MANUAL%20DO%20SISBIO.pdf
- World Association of Zoos and Aquariums (WAZA) code of ethics and animal welfare (2003)
http://www.applied-ethology.org/ethical_guidelines.html
- Ethical guidelines of the International Society for Applied Ethology (2002)
<http://www.nhmrc.gov.au/book/australian-code-practice-care-and-use-animals-scientific-purposes>

Australian code for the care and use of animals for scientific purposes 8th edition (2013).
National Health and Medical Research council of the Australian Government

IUCN best practice guidelines for great ape tourism 16 September 2010
(http://www.iucn.org/knowledge/publications_doc/publications/?6052/Best-practice-guidelines-for-great-ape-tourism)

Ethical committee of the Argentine Society for Mammalian Studies (SAREM; Giannoni et al., 2003). <http://www.sarem.org.ar/wp-content/uploads/2014/04/Etica-SAREM.pdf>

IPS International Guidelines for the Acquisition Care and Breeding of Nonhuman Primates, Second Edition. 2007. This has been translated into several languages. Available at the IPS website.

非人灵长类实验动物福利与 AAALAC 认证 (welfare and AAALAC certification of Non-human primates utilization in Lab)

<http://wenku.baidu.com/link?url=5U5mwY3SIByqpYVGLCgIhKT8IAYzG6MvZwG4MPbmALPNXDVeCpXT58qXtZUELrlFwfi-xe4IDpb8SLLOG1c0ZL7YtMBM3Qw9yXlwQS-qLVO>

非人灵长类动物饲养手册 (Handbook of nutrition requirements of non-human primates)
(Chinese translation version from English)

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REFERENCES

Bezanson, M., Stowe, R., & Watts, S. M. (2013). Reducing the ecological impact of field research. *American Journal of Primatology*, 75: 1-9.

Bicca-Marques, J.C. & Freitas, D.S. (2010) The role of monkeys, mosquitoes, and humans in the occurrence of a yellow fever outbreak in a fragmented landscape in south Brazil: protecting howler monkeys is a matter of public health. *Tropical Conservation Science* 3: 31-42 (available at www.tropicalconservationscience.org).

Campbell, G., Kuehl, H. Diarrassoubal, A. N’Goran P.K., & Boesch C. (2011). Long-term research sites as refugia for threatened and over-harvested species. *Biology Letters* 7: 723-

726.

- Cranfield, M.R. (2008). Mountain gorilla research: the risk of disease transmission relative to the benefit from the perspective of ecosystem health. *American Journal of Primatology* 70: 751-754.
- Curtis, D.J. & Setchell, J.M. (2003). Introduction. *Field and Laboratory Methods in Primatology: a Practical Guide*. Setchell, J.M. & Curtis, D. J. (eds.) Cambridge University Press: Cambridge.
- Cuthill, I. 1991. Field experiments in animal behaviour: methods and ethics. *Animal Behaviour*, 42: 1007-1014
- Dolins, FL, Jolly A, Rasamimanana H, Ratsimbazafy J, Feistner ATC, Ravoavy F. (2010) Conservation education in Madagascar: three case studies in the biological diverse island continent. *American Journal of Primatology* 72: 391-406.
- Fedigan, L.M. (2010.). Ethical issues faced by field primatologists: asking the relevant questions. *American Journal of Primatology* 72: 754–771.
- Gannon WL, Sikes, R.S. (2011) Guidelines of the American Society of Mammalogists for the use of wild mammals in research. *Journal of Mammalogy* 92: 235-253.
- Giannoni, S.M, Mera Sierra, R., Brengio, S.. & Jimenez Baigorria, L. 2003. *Guía para el uso de animales en investigaciones de campo y en cautiverio*. Comisión de Ética de la Sociedad Argentina para el Estudio de los Mamíferos.
- Goldberg TL (2008). Commentary on “Pandemic Human Viruses Cause Decline of Endangered Great Apes,” by Kondgen et al 2008, *Current Biology* 18: 260-264”. *American Journal of Primatology* 70: 716-718.
- Gruen, L., Fultz, A, Pruetz, J. (2013). Ethical issues in African great ape field studies. *ILAR Journal*. 54(1): 24-32.
- Johnson, K.G., Brooks, S.J., Fenberg, P.B., Glover, A.G., James, K.E., Lister, A.M., Michel, E., Spencer, M., Todd, J.A., Valsami-Jones, E., Young, J.R. & Stewart, J.R. (2011). Climate change and biosphere response: Unlocking the collections vault. *BioScience* 61: 147–153.
- Jolly, C.J., Phillips Conroy, J., & Muller, A.E. (2011). Trapping primates. In: *Field and Laboratory Methods in Primatology: a Practical Guide*. Setchell, J.M. & Curtis, D. J. (eds.) Cambridge University Press: Cambridge. Pp. 133-146.
- Köndgen S, Huhl H, N’Goran PK, Walsh PD, Schenk S, Ernst N, Biek R, Formenty P, Matz-Rensin K, Schweiger B, Junglen S, Ellerbrok H, Nitsche A, Briese T, Lipkin WI, Pauli G, Boesch C, and Leendertz FH. (2008). Pandemic human viruses cause decline in endangered great apes. *Current Biology* 18:1–5.
- Kuhar CW, Bettinger TL, Lehnhardt K, Tracy O, Cox D. (2010). Evaluating for long-term impact of an environmental education program at the Kalinzu Forest Reserve, Uganda. *American Journal of Primatology* 72: 407-413.
- Lavoie, C. (2013). Biological collections in an ever changing world: Herbaria as tools for biogeographical and environmental studies. *Perspectives in Plant Ecology Evolution and Systematics* 15: 68–76.

- MacKinnon, K.C. & Riley, E.P. (2010). Field primatology of today: current ethical issues. *American Journal of Primatology* 72: 749–753.
- MacKinnon, K.C., & Riley, E.P. (2013). Contemporary ethical issues in field primatology. In MacClancy, J. & Fuentes, A. (eds.), *Ethics in the Field: Contemporary Challenges*. Berhahn: New York. pp. 98-107.
- Malone N.M., Fuentes A. & White F.J. 2010 Subjects of knowledge and control in field primatology. *American Journal of Primatology* 72: 779–784
- Marini, M.Â. & Marinho Filho, J. (2006) Translocação de aves e mamíferos: teoria e prática no Brasil. In: *Biologia da Conservação; Essências*. In Rocha, C.F., Bergallo, H.G., van Sluys, M. & Alves, M.A.S. (eds.). RiMa Editora, São Carlos, pp. 505-536.
- Marsh, L.K. (2007) Making conservation count: primates, fragmentation, and the future. In: *A Primatologia no Brasil, vol. 10* (Bicca-Marques, J.C. ed.). Sociedade Brasileira de Primatologia, Porto Alegre, pp. 17-36.
- Minteer, B.A, Collins, J.P., Love, K.E., Puschendorf, R. (2014). Avoiding (Re)extinction. *Science* 344: 260. DOI: 10.1126/science.1250953
- Nekaris, K.A.I. & Nijman, V. (2013) Do long-term great ape field studies help to conserve primates? In MacClancy J. & Fuentes, A. (Eds.), *Ethics in the Field: Contemporary Challenges*. New York. Vol. Berhahn pp. 108-123.
- Pusey AE, Wilson ML, Collins DA. (2008). Human impacts, disease risk, and population dynamics in the chimpanzees of Gombe National Park, Tanzania. *American Journal of Primatology* 70: 738-744.
- Rodrigues, M. (2006) Hidrelétricas, ecologia comportamental, resgate de fauna: uma falácia. *Natureza & Conservação* 4: 29-38.
- Savage A, Guillen R, Lamilla I, Soto L. (2010). Developing an effective community conservation program for cotton-top tamarins (*Saguinus oedipus*) in Colombia. *American Journal of Primatology* 72: 379-390.
- Silvy, J. N. (2012) *The Wildlife Techniques Manual, vol. 1 (Research) and vol. 2 (Management)*. 7th edition. Baltimore: The Johns Hopkins University Press.
- Strier, K.B. (2010). Long-term field studies: positive impacts and unintended consequences. *American Journal of Primatology* 72: 772–778.
- Tewksbury, J.J., Anderson, J.G.T., Bakker, J.D., Billo, T.J., Dunwiddie, P.W., Groom, M.J., Hampton, S.E., Herman, S.G., Levey, D.J., Machnicki, N.J., Martínez Del Rio, C., Power, M.E., Rowell, K., Salomon, A.K., Stacey, L., Trombulak, S.C. & Wheeler, T.A. (In press). Natural history's place in science and society. *BioScience*.
- Walsh PD (2008). A rant on infectious disease and ape research priorities. *American Journal of Primatology* 70: 719-721
- , 渡□邦夫, 2007, 非人灵□□□养与管理□程中的福利保障, □物学研究, 28(4)448-456 (Zhang, P., & Watanabe, K., 2007. On the husbandry and welfare of captive non-human primates. *Zoological research* 28: 448-456) (in Chinese with English abstract)
- 范□来, 向左甫, 2013, 旅游干□□非人灵□□□物的影响, □物学研究, 34(1): 55–58.

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