

## EARTHWATCH INSTITUTE FIELD REPORT

**Earthwatch Institute Mission:** *Earthwatch engages people worldwide in scientific field research and education to promote the understanding and action necessary for a sustainable environment.*

Earthwatch Institute uses the UNESCO Definition of a Sustainable Environment: *A sustainable environment is one in which the natural environment, economic development and social life are seen as mutually dependent - and the interaction between them contributes to the sustainability and enhancement of the quality of people's lives and the natural environment.*

This field report will be publicized on our weblink with the United Nations Environment Program (UNEP) World Conservation Monitoring Centre (WCMC) at [www.unep-wcmc.org](http://www.unep-wcmc.org). This website is available to the general public.

**Project Title:** Caring for Chimpanzees

**Principal Investigator (s):** Roger Fouts, Deborah Fouts, & Mary Lee Jensvold

**Position/Affiliations:** Co-PI's

**Research Site(s):** Ellensburg, WA USA

**Local Management Status of the Research Site(s):** n/a

**Scientific names of primary species being studied:** Pan troglodytes

### **Key Research Objectives:**

1. Record and calculate average number of objects that the chimpanzees simultaneously use.
2. Develop and update training and reliability procedures and apparatus for space use and locomotion projects.
3. Record how the chimpanzees use their enclosures
4. Investigate the chimpanzees' use of the new structures and substrates
5. Record how the chimpanzees locomote
6. Compare current locomotion patterns to patterns in 1995-1998
7. Enter data into Excel and SPSS and check for accuracy.
8. Support the chimpanzees at CHCI in a stimulating enriching environment
9. Explore the ways that the chimpanzees use their signs with humans and each other and ways to enrich the lives of all captive chimpanzees.

## Data Collection and Results

### a) Give a concise account of the data you have collected during the past field season.

Teams worked on three research projects this year 1) simultaneous object use, 2) space use, and 3) patterns of locomotion.

*Object use.* In the 2003 field season we found that the chimpanzees use more than one object at a time about 25% of the time. Volunteers anecdotally reported that often the chimpanzees were surrounded by heaps of clothing, toys, and magazines. We were interested in knowing exactly how many objects they were actually using when they had more than one object. Team 1 investigated this question. They prepared objects for the chimpanzees and collected 30 hours of data.

*Locomotion.* Volunteers learned the coding system for locomotion by viewing videotapes. We utilized videotapes from the 1995-1998 field seasons and created improved videotapes as well. Four teams collected 112 hours of data.

*Space use.* Volunteers learned the coding system for locations by studying maps and practice exercises that are live and videotaped. We utilized procedures from the 1995-1998 field seasons and also updated and improved these training materials. Four teams collected 113 hours of data.

### b) What progress have you made towards achieving your original objectives?

1. *Record and calculate average number of objects that the chimpanzees simultaneously use.* This project was completed.
2. *Develop and update training and reliability procedures and apparatus for space use and locomotion projects.* We completed these and implemented them for 4 teams
3. *Record how the chimpanzees use their enclosures.* We began data collection but due to the high team cancellation rate this year we were unable to meet our objectives.
4. *Investigate the chimpanzees' use of the new structures and substrates.* We can only make preliminary comparisons with the data collected this year.
5. *Record how the chimpanzees locomote.* We began data collection but due to the high team cancellation rate this year we were unable to meet our objectives.
6. *Compare current locomotion patterns to patterns in 1995-1998.* We can only make preliminary comparisons with the data collected this year.
7. *Enter data into Excel and SPSS and check for accuracy.* Volunteers entered and checked 255 hours of data into Excel. Staff imported data into SPSS.
8. *Support the chimpanzees at CHCI in a stimulating enriching environment.* Volunteers prepared enrichment and meals for the chimpanzees. They cleaned enclosures and helped in the vegetable garden. These tasks supported this objective.

9. Explore the ways that the chimpanzees use their signs with humans and each other and ways to enrich the live of all captive chimpanzees. Masters theses currently in progress are exploring topics such as the chimpanzees' responses to questions vs. statement, the chimpanzees' responses to familiar vs. unfamiliar signers vs. non-signers, the chimpanzees' modulation of signs, imaginary play in chimpanzees, and contexts of grins vs. playfaces in chimpanzees. We have a chapter in press on the chimpanzees' use of signs in conversations with humans. We have applied for grant funding to examine the chimpanzees' use of signs. Summer apprentices explored topics in foraging enrichments and nesting materials for chimpanzees. We continue to study dialectic differences in gestures of free-living and captive chimpanzees. We have publications under review and one in press with findings about free-living chimpanzees and gorillas in the Ngotto forest in the Central African Republic.

c) Please provide a summary of your results (even if they are preliminary).  
*Object use.* The chimpanzees use objects simultaneously 23% of the time. Table 1 shows the average and range number of objects the chimpanzees used when they had more than one object.

Table 1  
 Average and range number of objects used simultaneously

	Average	Range
Washoe	1.61	1 - 5
Tatu	1.34	1 - 5
Dar	1.27	1 - 6
Loulis	1.05	1 - 2

*Locomotion.* Preliminary data shows that the chimpanzees were in sitting positions 58% of the time and lying down 29% of the time. They did engage in all behaviours. Data appear in Table 2.

Table 2  
 Frequency of locomotion behaviors

Behavior	Chimpanzee				Total
	d	l	t	w	
Brachiate			2	4	6
Bad observation	208	121	336	105	770
Back up	2	1		9	12
Bipedal run	5		3	8	16
Bipedal walk	7	7	13	27	54
Climb	116	153	135	158	562
Cling	20	129	36	45	230
Crutch walk	2	33			35
Drop	3	1	3	2	9
Jump	3	14	3	1	21

Lie down	3843	2438	1931	3219	11431
Other	8	11	8	6	33
Quadrupedal run	29	22	14	10	75
Quadrupedal walk	443	461	455	496	1855
Rock walk			8		8
Sit-up walk	1	2		1	4
Slide	1		1	1	3
Spin		26			26
Stand	93	305	454	973	1825
Sit up	5280	6353	6668	5011	23312
Swing	16	3	10	4	33
Total	10080	10080	10080	10080	40320

*Space use.* Preliminary data shows the chimpanzees were in the east room 49% of the time, outside 35% of the time, and in the west room 14% of the time. Individual differences showed that all of the chimpanzees except Tatu had this same pattern. Tatu spent more time outside than inside. The chimpanzees used all of the structures and substrates except the cave and poles. The wooden platforms were used most often at 27.7% of the time. These were new structures as compared to earlier data and preliminarily seem like a very useful addition. Table 3 shows the frequency of the chimpanzees' use of each structure and substrate. The chimpanzees spent 71% of their time above the ground and 27% on the ground (2% of the time was recorded as bad observation).

Table 3  
Frequency and percent of use of structures and substrates

	Frequency	Percent
Ceiling	16	.1
Cement	6647	24.5
Cargo net	2941	10.8
Cement platform	23	.1
Climbing structure	860	3.2
Culvert	137	.5
Dirt	804	3.0
Fence	184	.7
Hose	167	.6
Ledge	3429	12.6
Other	13	.0
Potty	2	.0

Rung	19	.1
Spool	297	1.1
Stairs	706	2.6
Terrace	1658	6.1
Treat mound	4	.0
Tire	962	3.5
Wall	29	.1
Wooden platform	7516	27.7
Total	27120	100.0

### Significance/Benefits of Research

a) What is/are the significance/benefits of your research at the following levels?

- Local (in the area of the research site) - The research benefits the chimpanzees at CHCI in terms of learning what is the best environment for them. The volunteers create enrichment which adds diversity to the chimpanzees' environment and is beneficial to the chimpanzees' psychological well-being. CHCI provides educational and research experiences to the general public, Earthwatch volunteers, and students at Central Washington University and other universities. Each program participant is enriched by their experience at CHCI. The Earthwatch program brings revenue to Central Washington University as we utilize the Conference Program and Dining Services. Volunteers bring revenue to the Cities of Ellensburg and Roslyn while shopping, dining, and entertaining themselves.
- National – The findings of the research conducted through the Earthwatch grant are shared in national and international forums in the forms of research conferences, the Friends of Washoe newsletter, and peer review publications. Our Earthwatch volunteers are largely American. Often they share their experiences through presentations in classes or service groups. This spreads the message of Project Washoe, a compassion for all living beings. Other volunteers go onto volunteer at their local zoo or sanctuary. This brings new husbandry and enrichment ideas to these places that can directly affect the non-human primates there.
- International – a small percentage of volunteers come from outside of the U.S. Like the American volunteers, the international volunteers often give talks or volunteer. This brings our message even further - globally. Our husbandry practices, philosophy, research findings have been presented in international conferences, thus affecting husbandry practices there as well.

b) How do your findings contribute to issues of sustainability?

Chimpanzee and humans are very closely related. Chimpanzees are closer to humans than they are to gorillas. Washoe and the other chimpanzees at CHCI use American

Sign Language to communicate to humans and each other. Often the Earthwatch volunteers share in these conversations, and with that these chimpanzees are reaching across an imagined gap between humans and the rest of nature. When the volunteers span that gap they realize that humans are not very different from other species. They realize that there is a continuity between all species and our planet. With this realization, exploitation becomes more difficult. When humans cease their exploitation of other beings and resources on this planet, sustainability can take a foothold. Washoe and her family create a bridge between humans and non-humans that takes us toward sustainability.

## Dissemination of Results

a) Have you provided details of results from your research to or within:

- Scientific papers (indicate status; e.g., peer reviewed or in progress/press)
  - Please provide full references

Fouts, R. (2004). Apes, Darwinian continuity and the law. *Animal Law*, 10, 99-124.

Fouts, R.S. (2004). What was he thinking? A review of C.D. Wynne's "Do animals think." *Ethology*, 110, 835-836.

Hicks, T.C., Fouts, R. S. & Fouts, D. H. (Accepted for publication). Chimpanzee (*Pan troglodytes troglodytes*) tool use in the Ngotto Forest, Central African Republic. *American Journal of Primatology*.

Hicks, T.C., Fouts, R. S. & Fouts, D. H. (Submitted for publication). A survey of chimpanzees (*Pan troglodytes*) and gorillas (*Gorilla gorilla*) in the Ngotto Forest, Central African Republic. *International Journal of Primatology*.

Jensvold, M.L., Baeckler, S., Fouts, R.S., & Fouts, D.H. (2004). Their own terms: Techniques in humane caregiving of captive chimpanzees. *Friends of Washoe*, 1, 14-18.

Jensvold, M.L., Fouts, R.S., & Fouts, D.H. (2004). Assessment of species typical behaviours in captive chimpanzees. *Animal Welfare*, 13, S245.

Jensvold, M.L., Field, A., Cranford, J., Fouts, R.S., & Fouts, D.H. (In press). Incidence of wounding within a group of five signing chimpanzees (*Pan troglodytes*). *Laboratory Primate Newsletter*.

- Presentations (given or planned)
  - Who was the audience? How many people attended?

Fouts, R., Hicks, C., Fouts, D., Fouts, H., & Hoffman, P. (2004, April). Comparison of nest building characteristics in sympatric chimpanzees and gorillas. Paper presented at the Rocky Mountain Psychological Association Meetings, Reno, NV.

Hartel, J., Jensvold, M.L., Bowman, H., Fouts, R., & Fouts, D. (2004, April). The effect of foraging on the activity budgets of four captive chimpanzees. Poster presented at the Rocky Mt. Psychological Association, Reno, NV.

Jensvold, M.L., Baeckler, S.A., Fouts, R.S., & Fouts, D.H. (2004, October). Their own terms: Techniques in humane caregiving of captive chimpanzees. Poster presented at the International Society of Anthrozoology, Glasgow, Scotland, UK.

Jensvold, M.L., Fouts, D.H., & Fouts, R.S. (2004, April). Environmental enrichment with objects and caregivers for captive chimpanzees. Paper presented at the Rocky Mt. Psychological Association, Reno, NV

Invited talks:

Fouts:

Central Washington University, National Science Foundation Scholars, Ellensburg, WA  
30

Shoreline Community College, Shoreline, WA 500

Progressive Animal Welfare Society, Seattle, WA. 400

National Council of University Research Administrators, San Francisco, CA. 600

Planned for 2005: Western Kentucky University, University of Puget Sound, and March  
speaking tour in New Zealand.

Jensvold:

Chimpanzees and sign language. February 3, 2004. Todos Santos speakers series.

Todos Santos, BCS, Mexico. Public venue approximately 20

- Books, chapters, illustrations

Fouts, R. S. & Fouts, D. H. (2004). Primate language. In R. Gregory (Ed.), *The Oxford companion to the mind*. Oxford, England: Oxford University Press, pp 744-747.

Fouts, R.S. (In press). Foreword. In F. D. McMillian (Ed). *Mental health and well-being in animals*. Iowa State University Press.

Fouts, R. & Fouts, D. (In press). Captive chimpanzees. In Andrew Linzey (Ed.) *The international animal world*. Oxford: Oxford University Press.

Fouts, R. Jensvold, M.L., & Fouts, D. (In press). Talking chimpanzees. In M. Bekoff (Ed.) *Encyclopedia of animal behavior*. Greenwood Publishing Group.

Fouts, R., Jensvold, M.L., & Fouts, D. (In press). Taking chimpanzees on their own terms: Thirty-five years of non-invasive research. In D. Herzing (Ed). *Crossing interspecies boundaries*. Temple University Press.

Jensvold, M.L., & Gardner, R.A. (In press). Conversational use of sign language by cross-fostered chimpanzees. In F. Columbus (Ed.), *New research in non-verbal communication*. Hauppauge, NY: Nova Science Publishers.