

ANNUAL REPORT
DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY
SUNY College of Environmental Science and Forestry
(June 1, 2012 - May 31, 2013; i.e., AY 2012-2013)

NAME:

I. INSTRUCTIONAL ACTIVITIES

1. Regular Course Offerings

	<u>Course No.</u>	<u>Title</u>	<u>Credit Hrs.</u>	<u>No. Students</u>	<u>No. of Lab. Sections</u>
FALL:	ESC 325/525	Energy (with T. Volk)	3	36	
	EFB 518	Systems Ecology	4	25	1
	EFB 420	Intern	3	2	
	EFB 499	Honors	3	1	
SPRING	EFB/ES 120	Global Environment	3	116	
	EFB 116	Ecosystems	3	25	
	EFB 522	Biophysical Economics	3	10	
	EFB 498	Research	2+-	5	
	EST 400	Senior Paper	3	4	

2. Non-Scheduled Course Offerings (e.g., 496, 899, 999)

<u>Course No.</u>	<u>Title</u>	<u>Credit Hrs.</u>	<u>No. Students</u>
EFB 495	Undergraduate TAs		2
EFB /EST	Masters Research		4
EFB/EST 999	Doctoral Research		5

3. Continuing Education and Extension (short courses, workshops, etc.)

4. Guest Lecture Activities

<u>Course No.</u>	<u>Title</u>	<u>No. of Lectures</u>
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EFB 220 Urban Ecology	Energetics of Cities	1
EST 296 Introduction to Environmental Studies	Overview of biology concentration	1
EST 426/626 Concepts of Sustainable Development	Oil: Nature's premium fuel	2

II. STUDENT ADVISING

A. Number of undergraduates for whom you are the student's official advisor about 25 and unofficial advisor: countless

B. Graduate Students: (Name, degree sought, starting date, month & year; if a degree was completed, please give date and full citation for the thesis or dissertation).

MAJOR PROFESSOR

- | | | | |
|----------------------|-----|------|------------------------|
| 1. Anna Stewart | PhD | 8/07 | Degree completed 12/12 |
| 2. Carlos P. Ramirez | PhD | 8/09 | |
| 3. Steve Balogh | PhD | 8/08 | |
| 4. Braulio Quintero | PhD | 8/09 | |
| 5. Alex Poisson | PhD | 8/11 | |

CO-MAJOR PROFESSOR

- | | | | |
|-----------------------|----------------------------|------|--------------------------------|
| 1. Suzanna DelGranado | PhD (with Jack Manno) | 8/07 | |
| 2. Seth Myers | PhD (with Myrna Hall) | 8/05 | (Myrna does most advising etc) |
| 3. Whitney Lash | PhD (with Valerie Luzadis) | 8/06 | |
| 4. Egan Waggoner | MS (with Rick Smardon) | 5/11 | |

MEMBER, STEERING COMMITTEE (other than those listed above)

A few

CHAIRMAN OR READER ON THESIS EXAMS, ETC.

Two

III. RESEARCH COMPLETED OR UNDERWAY

A. Departmental Research (unsupported, boot-legged; title - % time spent)

Lots

B. 1. Grant-supported Research (source, subject, amount - total award and current year, award period starting and ending dates; list graduate research assistants supported by each grant)

National Science Foundation \$ 5,000,000 (my share \$152,000) (\$25,000 per year) Long Term Ecosystem Research in the Luquillo Forest Grant period 2006-2012
Supported: Whitney Lash Next phase held up due to internal politics at Univ of Puerto Rico

Social-Ecological System Change, Vulnerability, and the Future of a Tropical City” National Science Foundation Urban Long-Term Research Area Exploratory Award (ULTRA-EX), (\$300,000, my research \$30,000), Ariel Lugo (PI), Tischa Munoz (co-PI), March 2010 to March 2012. Supports Bali Quintero [Administered in Puerto Rico]

United Kingdom Department of International Development \$180,000
Consolidating and promulgating EROI Research. Through June 30 2013
Supports, Steven Balogh, Alex Poisson, Shelly Arnold (Utah State), Jessica Lambert

An Environmental Basis for Rural Planning in the Province of Cordoba, Argentina. Argentine National Government Award, (\$1,000,000, my research portion (about \$10,000) is for travel, per diem, and potentially tuition for an Argentine student to study some semesters at ESF), Oscar Giayetto and Juan-Jose Cantero (PIs). May 2010 to May 2013.

Various private sources: Multiple Sponsors \$11,000

2. Research Proposals pending (as in B.1., above)

IV. PUBLICATIONS (Full bibliographic citation, i.e., do not use "with Jones," or "Jones, et al."; please list only publications published, in press, or actually submitted during this reporting period --- **do not list manuscripts in preparation**).

Books:

Prieto, P., C.A.S. Hall. 2013 Spain's Photovoltaic Revolution: The Energy Return on Investment Springer, NY.

Feng, L., Hu, Y., Hall, C.A.S., Wang, J. 2013. The Chinese Oil Industry: History and Future. Springer N.Y.

Hall, Charles A. S., Ramírez-Pascualli, Carlos A. 2013. The First Half of the Age of Oil: An Exploration of the Work of Colin Campbell and Jean Laherrère Springer, N.Y.

A. Refereed Publications

Hamilton, Abbe; Balogh, Stephen B.; Maxwell, Adrienna; Hall, Charles A.S. 2013. Efficiency of Edible Agriculture in Canada and the U.S. Over the Past Three and Four Decades. *Energies* 6, no. 3: 1764-1793.

Hu, Yan, Charles A.S. Hall, Jianliang Wang, Lianyong Feng, Alexandre Poisson. Energy Return on Investment (EROI) of China's Conventional Fossil Fuels: Historical and Future Trends. *Energy*, 2013,54: 352-364.

Hall, C. A. S. 2012. Energy Return on Investment. Pp. 69-71. In Butler, T. and G. Wuerther. *Energy: overdevelopment and the delusion of endless growth*. The Post Carbon Institute and Foundation for Deep Ecology. Sausalito, California.

Lambert, J. G., Hall, C. A. S. and Balogh, S. B. (in press). EROI of Different Fuels and the Implications for Society. *Energy Policy* (in press)

Harris, N.L., C.A.S., Hall, A.E., Lugo. (In Press) A test of the maximum power hypothesis along an elevation gradient in the Luquillo Mountains of Puerto Rico. *Ecological Bulletin*:

Waide, R.B. D.E. Comarazamy, J.E. González, C.A.S. Hall, A.E. Lugo, J.C. Luvall, D.J. Murphy, J.R. Ortiz-Zayas, N.D. Ramírez-Beltran, F.N. Scatena, W.L. Silver. (In press) Climate variability at multiple spatial and temporal scales in the luquillo mountains, Puerto Rico. 2013. *Ecological Bulletin*.

Lash-Marshall, W., C.A.S. Hall, W. Wu. (In press). Using gradient analysis to simulate the spatial structure and function of the Luquillo Experimental Forest. In Gonzales, G. *Ecology of the Luquillo Mountains*.

Ramírez-Pascualli, C. A., & Hall, C. A. S. (en prensa). The relation of oil to the Mexican economy: past, present and future. En A. Yáñez, R. Dávalos, J. Day & E. Reyes (Eds.) *Ecological Dimensions for Sustainable Socio Economic Development*. WIT Press.

Hall, Charles, Jessica Lambert and Steven Balogh. (Accepted pending revision) Peak oil, declining EROI and the new economic realities. *Ecological Engineering*

Poisson, Alexandre and Charles A.S. Hall. (Accepted pending revision) Time Series EROI for Canadian Oil and Gas. *Energies*

Hall, Charles and John Day. (Accepted pending revision). The irrelevance of much contemporary academic ecology and economics for solving the major problems of the 21st century. *Ecological Engineering*.

Mead, J.V., M. Connerton, C.A.S.Hall and N. Ringler. (in revision) Area compensation of primary production along a gradient of riparian forest cover for a small temperate stream. *Journal of the North American Benthic Society*.

B. Papers Presented at Science Meetings (give title, date, occasion, and location)

The irrelevance of most contemporary academic ecology to solving the major problems of the 21st century. Ecosummit, Ohio State Sept 2012

Plenary presentations:

Welcome to 4th quasi Annual meeting on biophysical economics
American Society for the study of Peak Oil. November Sustainability for the second half of the age of oil
American Geophysical Union Quantity vs quality of oil: Implications for the future economy

Invited Lecture tours:

Sweden October 2012:

Peak oil, declining EROI and the new economic realities: Uppsala University

Overview of global oil situation (With Kjell Akerlett) Uppsala

Understanding real changes in energy efficiency Royal Swedish Academy, Stockholm

A biophysically-based economics for the second half of the age of oil. University of Stockholm

University of Hawaii

The Need for a Biophysical Approach to Economics & Implications for Hawai`i

A biophysically-based economics for the second half of the age of oil. Univ. Hawaii Hilo

Peak Oil, EROI and Your Financial Future in Hawai`I Univ. Hawaii Manoa

Peak oil, declining EROI and the new economic realities: New limits to growth? Univ. Hawaii Manoa

D. Public Service Presentations (lectures, seminars, etc. to and for the public; give group or occasion, date(s), and attendance)

V. PUBLIC SERVICE

A. Funded Service (include consulting activities)

1. Government Agencies (Federal, State, Local):

none

2. Industrial and Commercial Groups, etc.

none

B. Unfunded Service to Governmental Agencies, Public Interest Groups, etc.

Many small issues

VI. PROFESSIONAL DEVELOPMENT

A. Professional Honors and Awards (for teaching, research, outreach, etc.)

Hubbert-Simmons award for teaching in Energy from United States Association for the study of peak oil.

SUNY Chancellor's award for Scholarship and Creative Activity

B. 1. Activities in Professional Organizations (offices held, service as chairman, member, participant or consultant)

None

2. Professional Society Membership

None

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Other (books, symposia, etc.)

Series chief Editor, Springer Series on Energy

b. Reviewer (Approximate)

<u>Journal(s)</u>	<u>No. of manuscripts</u>
Ecological Economics	2
Energy	1
Energies	2
Others	
Books: Springer (Book proposals)	6

<u>Agency</u>	<u>No. of proposals</u>
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Other

Scientific Advisory Board
International Institute of Economic Analysis,
Zurich, Switzerland

c. Participation (workshops, symposia, etc.)

<u>Name of workshop, etc.</u>	<u>Date</u>	<u>Place</u>
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Organizer:

Fourth International meeting on Biophysical Economics, Burlington Vt. (October 2012)
Fifth International meeting on Biophysical Economics, Burlington Vt. (June 2013)

C. Further Education/Re-training Undertaken, Leaves, Workshops, etc.

D. Foreign Travel (Where, When, Purpose)

Sweden Lecture tour

VII. ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)

A. Department-level

B. College-level

President's committee on a carbon-neutral ESF

Informal committee to generate a program in Biophysical and Ecological Economics

C. University-wide, including Research Foundation

VIII. SUMMARY OF SIGNIFICANT ACTIVITIES AND ACCOMPLISHMENTS DURING THIS REPORTING PERIOD, ESPECIALLY THOSE MOST NOTEWORTHY AND RELATIVE TO THE COLLEGE'S AND DEPARTMENT'S MISSION.

DEPARTMENT/COLLEGE

STUDENTS: In my last year of formal teaching I continued with my normal teaching: Systems Ecology and Energy in Fall, Global. Ecosystems and Biophysical Economics in Spring. All serious, demanding courses. Also as I think anyone knowledgeable will tell you, there is usually a line of students waiting for personal interaction with me essentially all afternoon every afternoon.

My graduate students continue to do very well. Anna Stewart continues to receive about every possible prize including a Fulbright for her PhD research and receiving the best PhD student from ESF. She is now developing a program in Tropical Medicine at SUNY Upstate Medical Center. Leandro Castello (PhD with me and Don Stewart) was offered and has taken the new Fisheries professorship at Virginia Tech. One of my earliest students, Chris Neill, was appointed head of the Ecosystems Center at Woods Hole.

RESEARCH: Accomplishments

I published (again) 15 books and papers this year based on my research. I am eagerly sought in many venues for lectures on my research.

OUTREACH: I run an energy list serve with about 700 members where I distill and send out at weekly intervals what I believe to be the most important energy and energy/economic information.

I continue to be interviewed for Television and Media Several times a year. My research and teaching in Argentina constitutes international outreach.

My assessment of my year:

SELF: I have retired this year at 70. I view my professional life with wonder: I seem to have accomplished the goals I set for myself in my early 20's far better than I ever could have imagined. These goals were mostly to become an excellent professor in Ecology. My teaching has always been strong but the importance of my research was recognized by only a few until the last few years, where interest in what I have done and do has grown exponentially (Google Charles Hall Energy). I received this year two of the highest award/s that are available for me to get (The Hubbert-Simmons Award and the SUNY Chancellor's medal for Creative activity). Of greatest importance to me was that I was honored at a special retirement ceremony put on by my undergraduates on June 11 (nearly 100 attended) and by my former and present graduate students May 31-June

1st where about 50 people attended. I was deeply honored at and by these meetings, and enormously impressed at how their lives had been so positively effected through their very diverse applications of systems ecology. I retire with a great feeling of life time accomplishment.

IX. A. FUTURE PLANS, AMBITIONS, AND POTENTIAL CONTRIBUTIONS FOR YOUR OWN PROFESSIONAL DEVELOPMENT AND THE ENHANCEMENT OF THE PROGRAM IN ENVIRONMENTAL AND FOREST BIOLOGY (brief summary)

I continue to worry about what will remain at ESF after I am gone from here or from the Earth. I take great satisfaction that Systems Ecology and Ecosystems, what I was brought here to develop, are strong and healthy, that we have a functional new energy course and minor which will soon be a major, and that we have a formal course in Biophysical Economics. Our Environmental Sciences program is more formalized and perhaps strengthened, although with somewhat less punch than I envisioned. I have begun working with about 5 other faculty members to create unified undergraduate programs (minor etc) in Biophysical and Ecological Economics (BEE).

B. PROJECTED ACTIVITIES FOR NEXT YEAR

: Retirement, although I will continue with my energy and Biophysical Economics related issues. One possible project will be to teach Biophysical Economics through ESF outreach.