

**ANNUAL REPORT: June 1, 2013 – May 31, 2014**  
**(i.e., Summer 2013, AY 2013-2014)**  
**DEPARTMENT OF ENVIRONMENTAL AND FOREST BIOLOGY**  
**SUNY-ESF**

**NAME: John Castello**\_\_\_\_\_

**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>
SUMMER:	EFB 345	Forest Health (with S.A. Teale)	3	11	CLBS

FALL:

SPRING: Sabbatical leave

**NOTE: PLEASE INDICATE WHICH COURSE(S) HAD A SERVICE-LEARNING COMPONENT AND BRIEFLY EXPLAIN THE NATURE OF THIS COMPONENT.** For examples of service-learning in courses, see: <http://www.esf.edu/students/service/courses.htm>. Service-learning is a form of structured experiential education in which students engage with the community to be active learners, to enrich their sense of civic responsibility, and to explore practical application for course content. Faculty oversight, reflective thinking, and reciprocity are key components of service-learning.

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 498	Independent study	11	4
	EFB 420	Internship	3	1
	EFB 494	Senior synthesis Forest Health	1	2
	EFB 495	UG teaching	1	3
	EFB 899	MS research	2	1
	EFB 999	PhD research	2	1

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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**II. STUDENT ADVISING**

A. Number of undergraduates for whom you are the student's official advisor 16\_ and unofficial advisor \_\_\_\_\_

B. Graduate Students: (list 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

Jonathan Cale (Ph.D, January 2009)

Justin West (MS, September 2011)

## CO-MAJOR PROFESSOR

## MEMBER, STEERING COMMITTEE (other than those listed above)

## CHAIRMAN OR READER ON THESIS EXAMS, ETC.

### **III. RESEARCH COMPLETED OR UNDERWAY**

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

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)

-Castello, J.D. January 2013-May 2014. An Alternative Model of Beech Bark Disease. NSRC, \$10,000. Supports J. Cale.

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

-Castello, J.D. (PI), Teale, S.A., and Chaverri, P. 2015-2017. Ecophysiology of beech bark disease – Assessing roles of inoculum reservoirs. USDA-NIFA-AFRI, \$500,000.

3. Research Proposals submitted, but rejected (include information as in B.1., above)

-Castello, J.D. (PI), Teale, S.A., Johnston, M.T., Briggs, R.D., Chaverri, P., and Burke, D. 2015-2017. How did we transform a majestic forest tree species into a native invasive with serious ecological consequences? NSF preliminary proposal.

-McGee, G.G., Castello, J.D. (co-PI), and Davis, R.S. 2014-2016. An holistic approach to educating forest ecosystem scientists: management of second-growth northern hardwood forests for sustainability and old-growth habitat. McIntire-Stennis Program, \$53,802.

-Johnston, M.T. (PI), Castello, J.D. (co-PI), and Teale, S.A. 2014-2016. Nutritional Ecology of Beech Bark Disease in the Aftermath Zone of the Northern Forest. NSRC, \$136,304.

### **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**).**

#### A. Refereed Publications

- Cale, J.A., Ashby, A., West, J.L., Teale, S.A., Johnston, M.T., and Castello, J.D. 2014. Scale insects, decay and canker fungi interactions in American beech. *Forest Pathology* (in press).
- Cale, J.A., Teale, S.A., Johnston, M.T., Boyer, G.L., Perri, K.A., and Castello, J.D. 2014. Unraveling beech bark disease: New insights into disease development in aftermath forests. *PLOS ONE* (in review).
- Cale, J.A., Teale, S.A., West, J.L., Zhang, L.I., Castello, D.R., Devlin, P., and Castello, J.D. 2014. A quantitative index of forest structural sustainability. *Forests* **2014** (in press).
- Castello, J.D., Cale, J.A., Castello, D.R., and Devlin, P. 2014. Provisional Patent Application Filed for invention of a "Forest Structural Sustainability Calculator". (a computer software program that calculates a structural sustainability score and threshold value to quantitatively and objectively assess forest health).

#### B. Non-refereed Publications

- Cale, J.A., West, J.L., Teale, S.A., Castello, J.D., Johnston, M.T. (2013) Entomological and physiological factors predisposing beech to infection by *Neonectria* pathogens in beech bark disease aftermath forests. *Phytopathology* 103 (Supp. 2) (6): S2.23 (Abstract).

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

- Cale, J.A., West, J.L., Zhang, L., Teale, S.A., Castello, J.D., (2014). A quantitative index of forest structural stability. New York State Society of American Foresters meeting. Syracuse, NY.
- Johnston, M.T., Cale, J.A., Teale, S.A., and Castello, J.D. (2013). Beech bark disease in the aftermath forests of New York State: a new look at an old problem. Society of American Foresters national meeting. North Charleston, SC.
- Cale, J.A., Teale, S.A., Johnston, M.T., and Castello, J.D. (2013). A proposed new model for beech bark disease development in aftermath forests. American Phytopathological Society, Northeastern Division meeting, Southbury, CT.
- Cale, J.A., West, J.L., Teale, S.A., Castello, J.D., Johnston, M.T. (2013). Importance of host chemistry to beech bark disease development. New York State Society of American Foresters meeting. Syracuse, NY.

#### Posters:

- Cale, J.A., Ashby, A.W., West, J.L., Teale, S.A., Johnston, M.T., Castello, J.D. (2013) Scale insects, decay, and canker fungi tripartite interactions in beech. New York State Society of American Foresters meeting. Syracuse, NY.
- Cale, J.A., West, J.L., Teale, S.A., J.D. Castello, and Johnston, M.T. (2013) A proposed new model for beech bark disease development in aftermath forests. Entomological Society of America national meeting, Austin, TX.
- Cale, J.A., West, J.L., Teale, S.A., J.D. Castello, and Johnston, M.T. (2013) Entomological, nutritional and physiological factors predisposing beech to infection by *Neonectria* pathogens in beech bark disease aftermath forests. American Phytopathological Society national meeting, Austin, TX

#### 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):
  
- 2. Industrial and Commercial Groups, etc.

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

**VI. PROFESSIONAL DEVELOPMENT**

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

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

2. Professional Society Membership

3. Other Professional Activities

a. Editorial activity

Journal (s)

Responsibility

Other (books, symposia, etc.)

b. Reviewer

Journal(s)

No. of manuscripts

Forestry Chronicle (June 2013)

one

Agency

No. of proposals

Other

c. Participation (workshops, symposia, etc.)

Name of workshop, etc.

Date

Place

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

D. Foreign Travel (Where, When, Purpose)

**VII. ADMINISTRATIVE AND SERVICE RESPONSIBILITIES (include committee participation)**

A. Department-level

- Associate Chair, Dept EFB
- Chair, EFB Promotion and Tenure Committee
- Co-organizer (with S.M. Polimino), Departmental awards ceremony, 5/10/14.
- Supervisor of departmental secretaries Joanne Rappleyea and AnnMarie Clarke.
- Coordinator of the Forest Health major.
- Unofficial EFB faculty point person for departmental autoclaves.

B. College-level

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.**

**One** paragraph on each of the following (**i.e., three paragraphs total**) would be most helpful: this past year, what have you done for our students, department/college, and self professionally? NOTE: The information in this section (along with the supporting specific information elsewhere in this report) should be your strongest case for being considered for a discretionary raise (when available), which I'll continue to award based on your contributions to the department and college this reporting period.

I work constantly on behalf our undergraduates. I teach three formal courses to about 150 students each year. I am the coordinator of the Forest Health major for our undergraduates. I organize and supervise EFB 494 (senior synthesis in Forest Health) twice each year. I almost always supervise at least two independent research project students each year, which has led to including these students on research publications, and often into graduate work with me or others. I advise and informally mentor approximately 30 undergraduates, and I take this responsibility very seriously.

I am an Associate Chair of the Dept with various responsibilities. I supervise two of the three departmental secretaries. I co-organize the departmental spring awards ceremony each year with Sandy Polimino. I am the informal point person for autoclave usage/needs for the department. I participate actively in open houses for the department each summer. I am Chair of the departmental P/T Committee, and we have been actively engaged during the past three years in an attempt to revise the departmental protocol for evaluation of faculty for promotion and tenure decisions, and to assess faculty/departmental productivity over time. We are making progress, albeit slowly.

My research has progressed well this year. I submitted four research proposals during the Fall semester and my sabbatical leave this semester. My Ph.D student Jon Cale will complete his work on beech bark disease next month. His dissertation research has rewritten the 100 year old paradigm on this important invasive disease complex., resulting in numerous publications in print, in press, and in review. In addition, I have one ms currently in press, and two more in preparation for submission relating to my baseline mortality method to assess forest health worldwide. I am collaborating with forest ecologists from China, Europe, Africa, South America, and Australia on the use of this method. I have a patent application pending on the methodology.

**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)**

During the coming year I will continue my efforts to obtain funding for my BBD and baseline mortality work. I will also explore the possibilities to create a start-up consulting business utilizing my baseline mortality method/patent to assess the health of private and public forest lands. I have accomplished most of the objectives set for my sabbatical leave, but I still plan to submit a proposal sometime this summer or early Fall to fund my baseline mortality work.

**B. PROJECTED ACTIVITIES FOR NEXT YEAR**

1. Summer 2014

- a. Course(s) to be offered
  - EFB 345 Forest Health
- b. Proposed research activity
  - Write new research proposals to continue the BBD and baseline mortality research.
  - Submit manuscripts on BBD and baseline mortality work completed to date.
- c. University, professional society, and public service

2. Fall Semester 2014

- a. Course(s) to be offered
  - EFB 494: Senior Synthesis in Forest Health
- b. Proposed research activity
  - See above
- c. University, Professional society, and public service
  - Guide the new P/T evaluation protocol through to acceptance by the faculty.
  - Continue to serve as Associate Chair

3. Spring Semester 2015:

- a. Course(s) to be offered
  - EFB 217: Peoples, Plagues, and Pests
  - EFB 340: Forest and Shade Tree Pathology
  - EFB 494: Senior Synthesis in Forest Health
- b. Proposed research activity
  - see above
- c. University, professional society, and public service
  - see above