School of Forest Resources and Conservation
UF/IFAS

2009 Unit Review Document

October, 2009; Revised January, 2010

Solving Problems, Creating Opportunities, Building Futures

Multidisciplinary, Collaborative & Engaged

Spanning Biological, Social & Geographical Scales

Serving Diverse Stakeholders, Constituencies & Natural Resources

Seeking Social, Economic & Environmental Sustainability

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Contents

SFRC

UF UNIVERSITY of FLORIDA IFAS

1.1 Vision, Mission and History

Vision

To be a preeminent national and international institution in forest resources, fisheries and aquatic sciences, and geospatial sciences with comprehensive programs that set the standard of excellence in education, discovery, outreach and service through programs that encompass sustainable conservation, production and management.

Mission

To deliver integrated programs in undergraduate and graduate education, research and extension with an aim of achieving social, economic and environmental sustainability in the areas of forest resources, fisheries and aquatic sciences and geospatial sciences. These programs help make a better Florida, USA and world by:

- Educating professionals, scientists, leaders and citizens prepared to make a difference;
- Discovering, integrating and applying new knowledge and technologies to provide solutions locally, regionally and globally; and
- Engaging with society at all levels to promote healthy communities, sustain local economies, enable lifelong learning and inform policy making.

History

- 1883: College of Agriculture formed
- 1935: Department of Forestry formed
- 1937: FL legislature authorized and budgeted the School of Forestry
- 1935 – 1984:
  - ✓ Grew steadily as a single unit
  - ✓ Incorporated forest resources, wildlife, fisheries and aquatic sciences
- 1960: SFRC becomes a department in the FL Agricultural Experiment Station
- 1971: Name was changed to School of Forest Resources and Conservation
- 1984: Three departments formed in SFRC (FOR, FAS, WIS)
- 1993: FAS separated from the SFRC
- 1994: WEC separated from the SFRC
- 2004: Geomatics entered the SFRC
- 2008: FAS merges into SFRC

1.2 Program Overview: Scope of Disciplines, Activities and Goals

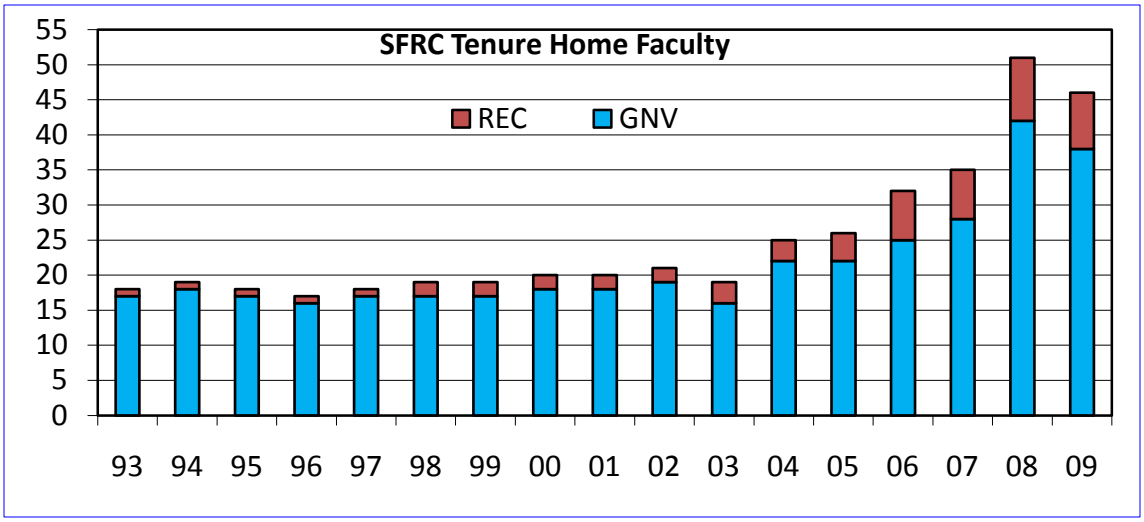
Many disciplines for teaching, research and extension (1-3 deep in any single discipline)
Many areas of emphasis spanning production, management and conservation
Many stakeholders including agencies, NGOs, industries, citizens and natural resources
Seeking triple-bottom-line sustainability: Economic, social and environmental

1.3 Faculty and Staff

Faculty

Tenure-Home Faculty	46
✓ GNV	38
✓ REC	8
Joint, State & Grant	23
Affil, Court & Emeritus	74

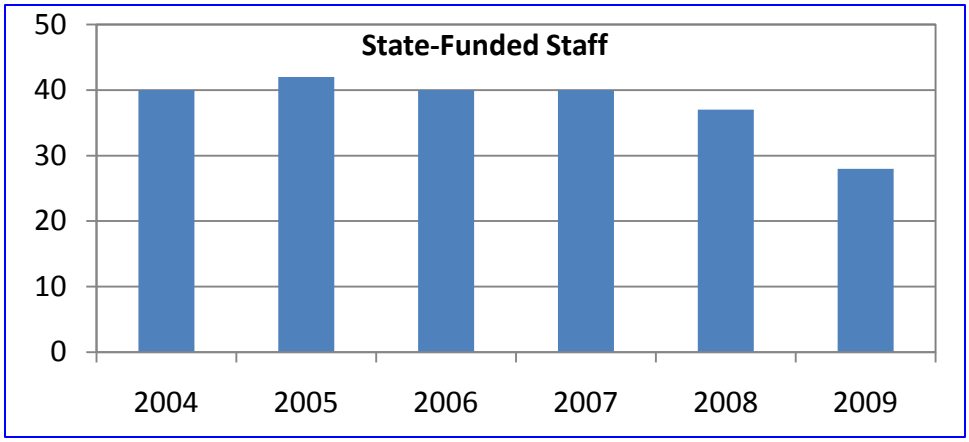
Tenure-Home Faculty	46
✓ Distinguished	1
✓ Full	14
✓ Associate	13
✓ Assistant	18



Staff

State Funded Staff	28
✓ Partial Grant	11
100% Grant Funded	23
OPS Employees	120

State Funded Staff	28
✓ Administrative	9
✓ Infrastructure	8
✓ Technical	11



1.4 Funding

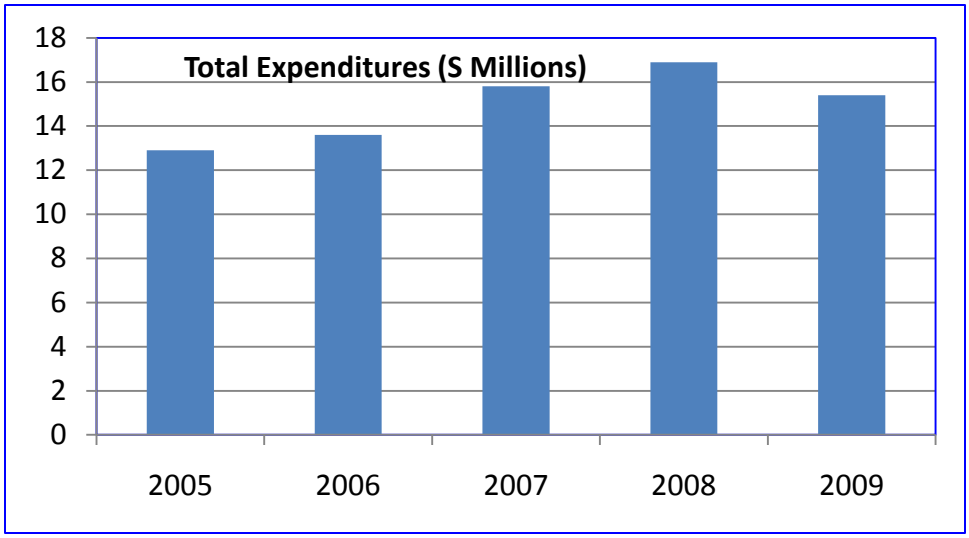
Total Expenditures FY2008-09 = $15.4 Million

By Source of Income ($ Million)

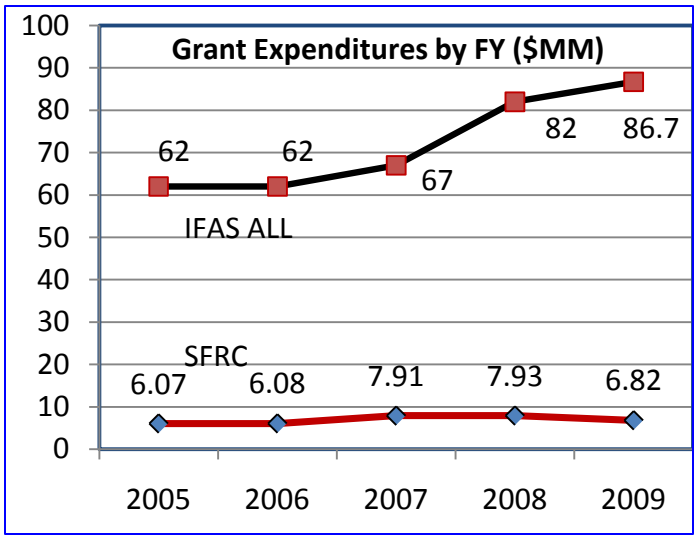
✓ State	7.88
✓ Grant	6.58
✓ Auxiliary	0.61
✓ Foundation	0.34

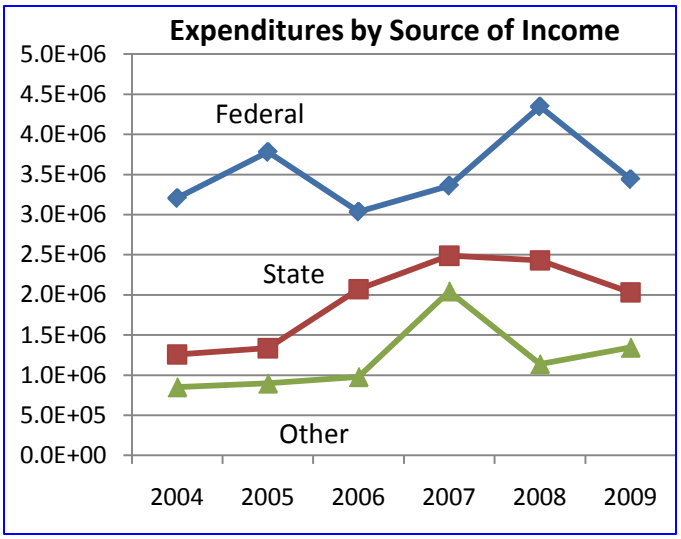
By Type of Expenditure ($ Million)

✓ Faculty Salary	5.29
✓ Staff Salary	3.00
✓ Operating	3.12
✓ Graduate Students	2.30
✓ OPS & Travel	1.67



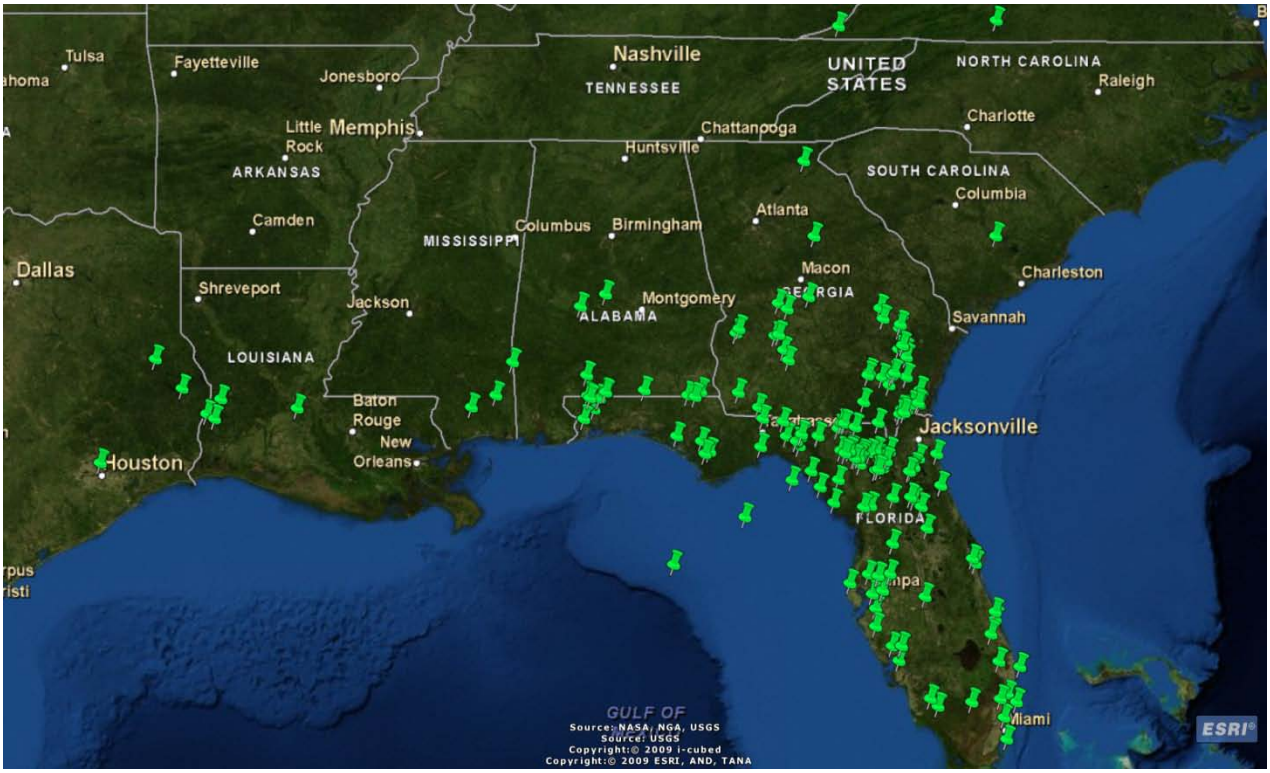
Grant Expenditures



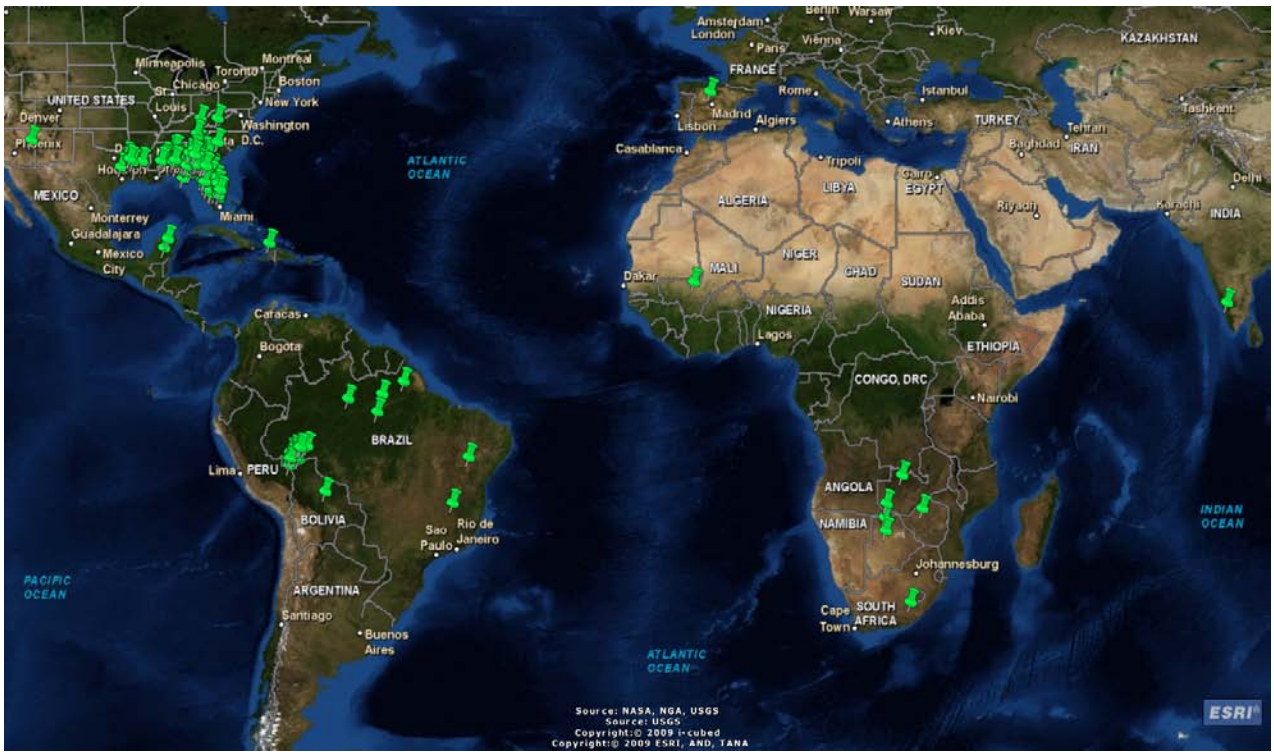


1.5 Geographic Scope of Activities

Current Study Sites: Florida and the Southeastern USA



Current Study Sites: The World



1.6 SFRC Properties

Millhopper Site

Early Information awaiting complete inventory

- ✓ ≈ 500 acres
- ✓ ≈ 250 planted pine
- ✓ ?? natural areas

Goals

- ✓ Complete inventory
- ✓ Work with Bill Haller to develop management goals
- ✓ Develop 20-year sustainable management plan
- ✓ Manage with ACMF

Austin Cary Memorial Forest

The Forest

- ✓ 2,080 acres acquired in 1930s for SAF accreditation
- ✓ Variety of ecosystems and management scenarios
- ✓ Managed for T, R and E; regularly used by 12 classes
- ✓ Sustainable management plan being updated

The Learning Center

- ✓ Conference and Education Buildings and Pavilion
- ✓ Used by UF, stakeholders, private rentals (8,000/yr)
- ✓ Improving demonstrations: turpentine, signage, etc.

Tropical Aquaculture Laboratory

Site

- ✓ Ruskin, 20 miles S of Tampa
- ✓ Long-term lease w/ National Weather Service
- ✓ 50 outdoor ponds (on State Property)
- ✓ 5,000 sq ft office + 2 BR dorm

Special Facilities

- ✓ 4 greenhouses (2,100 sq ft each)
- ✓ 5,000 sq ft hatchery
- ✓ Fish diagnostic lab

2.1 Undergraduate and Graduate Programs

Undergraduate Education

Majors and Minors

- ✓ **Geomatics**: Unique; ABET accredited; offered at GNV, PC and FtL; revised 2007
- ✓ **Forest Res. & Cons.:** Unique; SAF accredited; GNV; revised 2007
- ✓ **Natural Res. Cons:** Individualized; GNV, PC and Milton; WEC; being revised now
- ✓ **FAMU Combined Degree Program:** Years 1 & 2 @ FAMU; 3 & 4; 18 total grads
- ✓ **FAS and FRC Minors:** 20^{+} enrolled; Aiming to dovetail with NRC

Enrollment

- ✓ From 160 two years ago to 111
- ✓ All 3 majors down
- ✓ Possibly three trends:
  - Geomatics → Recession
  - NRC → Trend since 2004
  - FRC → Stable

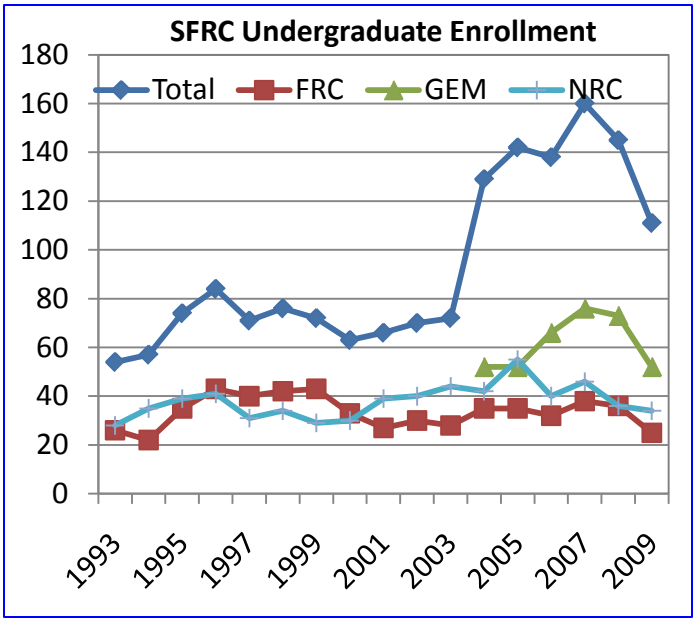
Graduate Education

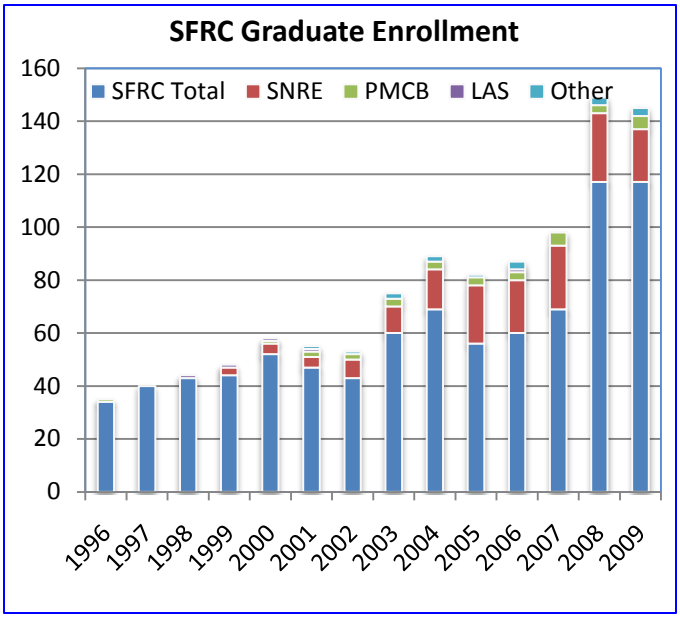
Graduate Degrees

- ✓ **Fisheries & Aquatic Sciences:** MFAS, MS & PhD
- ✓ **Forest Res. & Cons.:** MFRC, MS & PhD (working on non-thesis MS for distance delivery)
- ✓ **Joint PhD Degrees:** Law and Statistics

Enrollment

- ✓ 145 (117 SFRC, 20 SNRE & 8 Other)
- ✓ 145/1,110 = 13% of IFAS total
- ✓ 145/46 = 3.1 per tenure-home faculty member FTE





2.2 Undergraduate SWOT Analysis

Strengths	Internal Weaknesses
✓ Two nationally accredited majors (FRC, GEM) that are unique in FL ✓ Two majors (NRE, GEM) at RECs ✓ Diverse, cross-disciplinary and Gen Ed courses ✓ International courses (Costa Rica; Czech Republic) ✓ Undergraduate capstone course for 35+ yrs ✓ Small class sizes enable field-based classes and development of research and professional knowledge, skills and abilities ✓ Students from diverse socio-economic backgrounds ✓ Outreach to new audiences, e.g., GEM certificate ✓ Strong external funding (FSMS, Challenge Grants) ✓ Strong record of relevant employment ✓ ACMF used by 12 SFRC classes and others ✓ Generous SFRC-based scholarships from diverse sources (75 awards for $65,000/year) ✓ Investing internal and external funding to diversify e-Learning technologies	✓ UG enrollment below targeted levels ✓ Limited effectiveness in overcoming the 'found major' dilemma ✓ Lack a mega-enrollment Gen Ed course to boost Student Credit Hours (SCH) ✓ Lower SCH/TFTE driven by field- & lab-based courses ✓ Limited ethnic-gender diversity in undergraduates ✓ Professional orientation of majors does not promote movement into graduate programs ✓ Lack of teaching capacity in mensuration
Opportunities	**External Threats**
✓ Grow FAS UG program using FAS minor with NRC major ✓ Gain UG accreditation for FAS minor ✓ Grow NRC enrollment via curriculum revision ✓ Have capacity and transfer eligibility to allow growth in SFRC majors ✓ Build SCHs and enrich students' experiences by expanding non-majors in SFRC classes ✓ Expand programs at RECs and increase local access throughout the State and nation ✓ Bring UCF students into UF – GEM major ✓ Use growing public awareness of natural resources to attract students to our programs	✓ Other FL institutions with NRC and environmental sciences-type majors ✓ Economic stress weakening employment ✓ Overlap with some other units ✓ Tuition 'tax' for > 120% may impact 'found majors' ✓ Perception that UF is unwelcoming to transfer students ✓ Transfer enrollment discouraged by new requirement to complete all Tracking Courses

2.3 Graduate SWOT Analysis

Strengths	Internal Weaknesses
✓ One of the largest graduate programs in IFAS ✓ Ability to provide small class sizes, many of which are field-based ✓ Graduates effectively address needs of natural resources clientele with theory-based, application-oriented approaches to instruction ✓ Faculty members chair student committees in a diversity of interdisciplinary programs e.g., PMCB, LAS, SNRE, CLAS, COE ✓ Strong record of relevant employment for graduate students ✓ New non-thesis MS program for place-bound professionals and resource managers ✓ Strong national and international reputation ✓ External funding for academic programs (Challenge Grants; National Needs; IGERT) ✓ Off-campus sites that enhance teaching programs (ACMF, TAL, MH)	✓ Critical mass of faculty limited in several key areas (e.g., economics, forest health) ✓ Programs for REC students difficult to achieve due to limited DE courses, specialized requirements, etc. ✓ Need to use non-instructional staff and funds for instruction ✓ Safety concerns with field-based and water-based teaching and research
Opportunities	**External Threats**
✓ Build Ecological Restoration (DE) masters ✓ Grow DE program in Prescribed Fire Use and Impacts ✓ Develop leading national GEM graduate program ✓ Expand appeal of existing courses across campus ✓ Increase instruction in spatial analyses with GEM ✓ Create resource-spanning courses with broad appeal ✓ Potential for joint faculty appointments with other units to attain critical mass in key areas ✓ Graduate programs designed for professionals and managers, rather than strictly researchers	✓ Economic stress weakening employment market ✓ Overlap with some other units ✓ Increasing tuition may work against expanding graduate population (vs post-doc) ✓ Counting SCH can jeopardize interdisciplinary teaching ✓ Competition from national proliferation of 'integrated environmental studies programs'

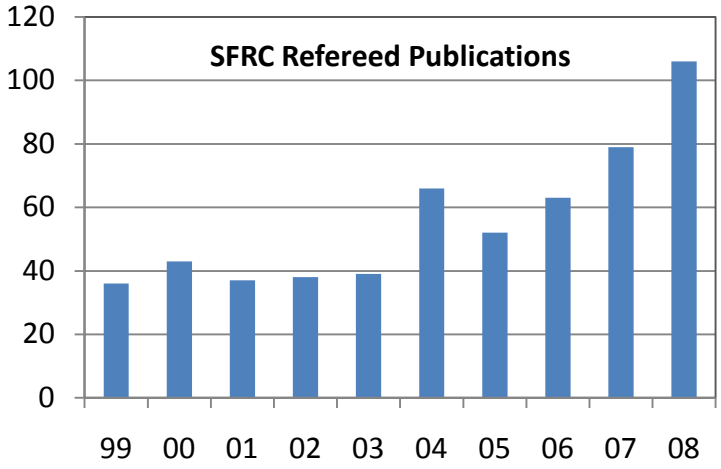
3.1 Research Programs

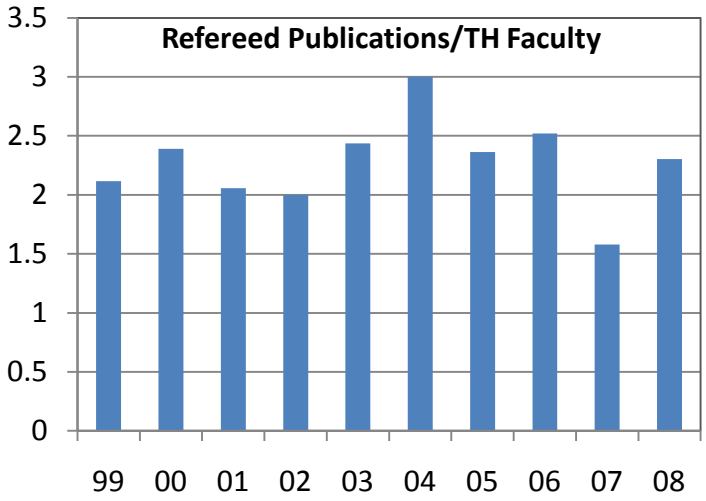
Characteristics of SFRC Research:

1. Multidisciplinary and interdisciplinary
2. Collaborative
3. Ranges from basic to applied
4. Spans biological, social and geographical scales
5. Includes all types of natural resources
6. Serves diverse stakeholders, constituencies and natural resources; and
7. **Problem solving.**

Metrics: (Refereed publications for tenure-home faculty including RECs)

- ✓ Only FRC prior to 2008, so discrete jump due to merger with FAS
- ✓ Currently averaging 2.3 refereed publications annually per total tenure-home FTE
- ✓ Currently averaging 4.6 refereed publications annually per research FTE





3.2 Research SWOT Analysis

Strengths	Internal Weaknesses
✓ Relevance of research to societal and environment needs e.g., climate change, resource production, management and conservation ✓ Well established multidisciplinary research ✓ Faculty and graduate students in diverse programs e.g., PMCB, LAS, SNRE ✓ Strong and increasing external funding from diverse federal, state and other sources ✓ Positive metrics including 4.6 refereed publications per research FTE and $200,000 of external funding per total FTE each year ✓ Excellent relationships and collaborations with external stakeholders and with other UF units ✓ Broad scope extending from local to international levels, urban to rural, terrestrial to marine, molecular to landscape and multiple geospatial scales	✓ Dispersed faculty and facilities in more than 25 buildings and several locations ✓ Older infrastructure in some locations needing modernization and expansion ✓ Limited technical support staff with 11 technical staff for 38 tenure-home faculty in Gainesville (=0.28 staff/faculty) ✓ High dependence on vehicles and vessels for research scattered all over the SE USA ✓ Lack of faculty positions in key disciplines that would collaborate widely with others e.g., human dimensions, mensuration, stock assessment, hydrographic geomatics
Opportunities	**External Threats**
✓ Expand socio-environmental, integrative and interdisciplinary research addressing complex problems e.g., bioenergy and climate change ✓ Well positioned to compete for "integrated" grants spanning two of the three missions (T or E with R) ✓ Expand collaborations to link sustainable forestry, fisheries, wildlife, climatology and hydrology methods to mitigate impacts to ecosystems	✓ Federal and state retrenchment in funding ✓ Downloading of grants administration and other responsibilities to unit level ✓ Increasing number of inventories, effort tracking, audits, etc. ✓ Other Florida programs developing in marine fisheries management (USF, FSU) ✓ UF priorities not aligned with SFRC need for dispersed research programs, e.g.,vehicles and vessels

4.1 Overview of Extension Programs

Prologue

SFRC has 14 Extension Specialists (5.9 FTE) with 9 in Gainesville and 5 at other locations. We conduct extension activities in the three broad categories described below, which are partially dependent on funding sources. We considered conducting separate SWOT analyses for each category, but there is enough overlap among them to do a single analysis while also indicating where particular SWOT factors may be key for just one of the categories. The categories are:

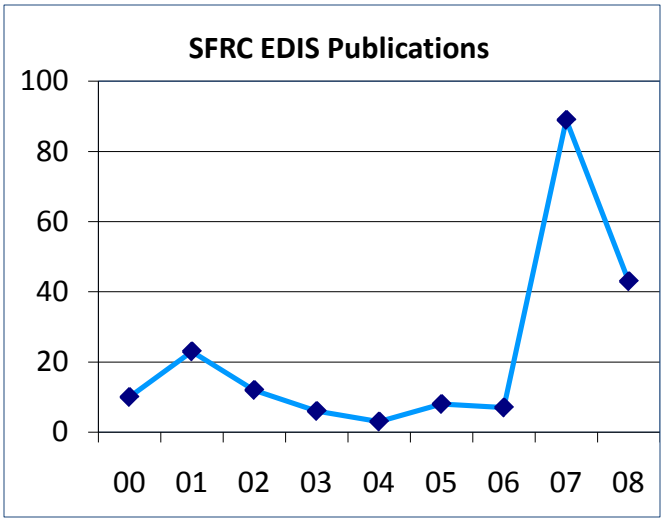
1. Extension as Translation
This is the traditional extension activity—taking what we learn from research and sharing it with extension agents and stakeholders. It may not always be direct research information, but rather translating other important materials, such as regulatory-related or business information, through workshops, meetings, newsletters, EDIS publications or other venues. It involves faculty time to accurately translate research findings (which is easy for those who have R and E appointments). It rarely gets substantive external funding, though may glean $2,000 to $15,000 for research/extension projects, the production of videos or Web sites, or a report. Our tropical fish work, urban forestry, vegetation management, laurel wilt virus, etc. are examples of this category, as well as the publication of extension fact sheets by faculty who are reporting on research results but do not have extension in their appointment. RREA funds also tend to get used in this category (or sometimes in category 3 below).

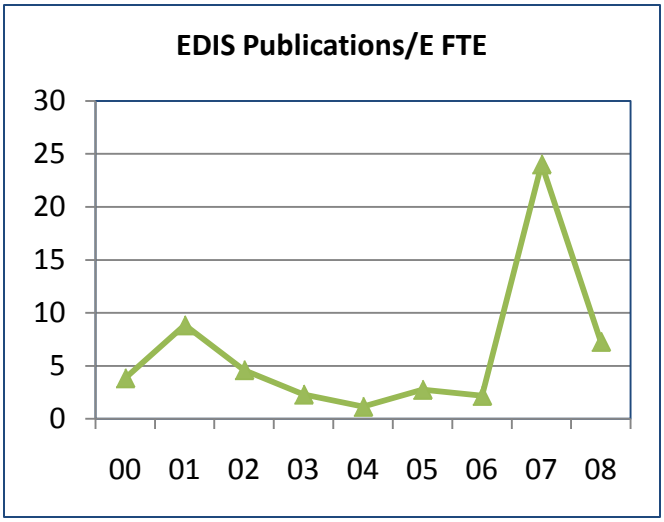
2. Extension Initiatives
This category is for large, externally funded grant projects that can hire a post-doc or support a staff person for 6 months to 3 years. Our Wildland Fire Toolkit, the Brevard Zoo evaluation, Multiregional Koi Herpesvirus Education Program, Aquaculture Education for Florida Teachers and the Changing Roles Professional Development project fit this category. It can also include large integrated research and extension projects, such as the Wood to Energy and Agroforestry projects. The funds and timeline are sufficient for a needs assessment, an external advisory group, formative evaluation and summative evaluation. The projects are as successful as the budgets are large!

3. On-going Extension Educational Programs
This category is for the programs that we offer every year, rain or shine, such as Fishing for Success, LakeWatch, Project Learning Tree and Forest Stewardship. In other states, these programs are often coordinated by state agencies and NGOs. We could consider abandoning them, but we have them precisely because state agencies want us to lead a statewide program and we do it well. Faculty are needed to provide guidance, but these programs are largely led by staff who write grants, train volunteers, write materials and lead workshops. Every now and then, we are able to obtain funding for new initiatives, which enables us to sponsor a graduate student (i.e., urban forestry supplement to PLT, 4-H online training workshop for PLT), but these funds are only available for new initiatives, not maintaining programs. Our ability to coordinate these programs depends on our ability to hire staff.

4.2 Details of Extension Programs

Name	FTE	LOC	Areas of Emphasis
M Andreu	0.30	PC	Forest systems; urbanizing forests; eco services
F Chapman	0.20	GNV	Aquaculture; sturgeon and ornamental fish
C Cichra	0.60	GNV	Lakes and aquatic systems; fish ecology & biology
F Escobedo	0.35	GNV	Urban forest effects; wildland-urban interface
J Hill	0.20	TAL	Invasive aquatic species; fish ID; aquaculture
B Lindberg	0.20	GNV	Fisheries habitats; artificial reefs
A Long	0.50	GNV	Forest stewardship; fire management
P Minogue	0.60	NFREC	Silviculture; vegetation mgmt; biofuels
M Monroe	0.50	GNV	Environmental education for sustainability
C Ohs	0.40	IRREC	Aquaculture; bait fish production
J Smith	0.40	GNV	Forest health; tree diseases
T Stein	0.20	GNV	Ecotourism and recreation
R Swett	0.70	GNV	Recreational water use planning and management
R Yanong	0.75	TAL	Fish health and diseases; aquaculture





4.2 Extension SWOT Analysis

Strengths	Internal Weaknesses
✓ Connections with research, county extension, state & federal agencies, stakeholder associations; good partnerships ✓ Track record for grants & awards ✓ Satisfied stakeholders, clients, partners ✓ Mirroring SFRC's diversity and breadth ✓ Student involvement in program development ✓ "Roving", broad specialists that each create a variety of programs spanning disciplines ✓ IFAS infrastructure provides multiple venues ✓ Effectiveness in rapid response and problem-solving e.g., disease outbreaks, disasters ✓ Extension can drive research focus and needs	✓ No Specialists in Milton or Geomatics ✓ Lack training in evaluation, resources and content expertise to cover SFRC areas ✓ Few county faculty with NR education ✓ Not enough support in human dimensions and lack of support staff in Extension ✓ Unable to continue grant-developed programs that end when grant expires ✓ Conflicts with teaching impact time available ✓ Outreach to some stakeholders may not be seen as Extension e.g., agencies ✓ Reliance on traditional & limited delivery methods ✓ Huge variation in audiences so can't generalize needs and objectives—every program is unique ✓ International presence in extension is limited
Opportunities	**External Threats**
✓ New faculty member in human dimensions ✓ Integrate fish, water, forests, geomatics ✓ Secure integrated funding opportunities that involve outreach ✓ Utilize distance and technology media ✓ Improve web site usage ✓ Reorganize focus teams ✓ Make better usage of student assistants ✓ Combine or merge some programs in danger of losing external funding ✓ Define or measure success differently than traditionally done and more according to audience and objective ✓ Engage non-E faculty in E ✓ Use Get Outdoors/Kids in the Woods opportunities to engage families in learning ✓ Link extension programs with CFEOR ✓ Acquire Stimulus funding for temporary staff ✓ Emphasize ecosystem services and water	✓ Value of natural resources not fully appreciated at state level ✓ Loss of county E faculty across state ✓ Few graduate students trained in or interested in extension; shift to PhD over masters ✓ Few outside incentives to improve skills ✓ Extension Focus Groups too broad ✓ Reduced external funding could severely limit Category 3 programs in Section 4.1 (e.g., LakeWatch, Forest Stewardship, PLT) ✓ Potential conflicts among stakeholders ✓ Lobbying base for natural resources more diffuse than for Ag ✓ Balance between advocacy and education

5. Summary and Conclusions: SFRC-wide SWOT

Strengths	Internal Weaknesses
✓ Productive and highly diverse faculty ✓ Commitment to and programs in all 3 functions of the Land Grant mission: T, R and E ✓ Integration of T, R and E by faculty ✓ Strong relations with all stakeholders including agencies, NGOs, companies, citizens, county faculty, students, alumni, etc. ✓ Track record for grants and awards in all 3 mission areas: T, R and E ✓ Reputation and presence throughout FL, USA and some parts of the world ✓ Addressing important issues in T, R and E that span local to global scales targeted at triple-bottom-line sustainability (economic, social and environmental)	✓ Lack of technical support in some key areas, especially Extension ✓ Need for faculty members in human dimensions, mensuration, hydrographic geomatics and stock assessment ✓ Older infrastructure in some labs/locations ✓ Spread out across many locations reducing "water cooler" collaborations ✓ Small class sizes that we consider a strength are a weakness under RCM budgeting ✓ Safety concerns with field and water research ✓ Reliance on vehicles in T, R and E: In T, to get students into forests and aquatic systems; in R, to reach the sites; and in E, to connect to audiences
Opportunities	**External Threats**
✓ Hire new faculty members in human dimensions, mensuration, hydrographic geomatics and stock assessment ✓ Integrate programs and find synergies in T, R and E across fish, water, forests, geomatics ✓ Secure integrated funding opportunities that involve outreach and teaching ✓ Utilize distance & technology media in T and E ✓ Enhance public understanding and appreciation of natural resources ✓ Revise NRC major to increase enrollment and use of FAS minor ✓ Build student credit hours in general education classes and in classes for majors ✓ Add a few key technical support staff that each could support multiple faculty	✓ Reduced state funding due to budget cuts, RCM budgeting, etc. ✓ Increasing administrative burdens on faculty ✓ Increasing administrative burdens on staff ✓ Reduced external funding in T, R and E ✓ Competition with other FL universities in fisheries, geomatics and environmental sciences ✓ Changing demographics with fewer people experiencing and appreciating natural resources ✓ Increasing cost of graduate students could impact T, R and E