

SUSTAINABLE FORESTS EDUCATION COOPERATIVE

Fiscal Year 2017 Annual Report



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August 22, 2017
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Introduction

This report covers the University of Minnesota's Fiscal Year 2017 (FY17), which runs from July 1, 2016 through June 30, 2017. The report is intended to provide an update on the Sustainable Forests Education Cooperative status, activities, and budget.

Summary of accomplishments

Some of SFEC's accomplishments during FY17:

- Delivered 19 events reaching 970 participants.
- Published nine new case studies to the Great Lakes Silviculture Library, with 8 more in development.
- Hired Madison Rodman as SFEC's new program assistant. Madison has degrees from the University of Minnesota and Oregon State University and has been an outstanding addition.
- Secured an \$80,000 grant from USDA's National Institute for Food and Agriculture to expand forest health-related content on the Great Lakes Silviculture Library, continuing our growth in grant revenue.
- Worked with a great group of collaborators to revamp SFEC's Ecosystem Silviculture cohort training. The new training will be offered in FY18, with the first session on October 3, 2017.
- Offered a major symposium entitled *Fire in Minnesota's Forests* and a smaller hands-on workshop on smoke management tools. These events were both grounded in a new collaboration with the Lake States Fire Sciences Consortium that we plan to continue.
- Developed and offered two new workshops on small unmanned aerial systems use in forestry, one as an experimental "custom workshop" for Superior National Forest staff (to pilot the new curriculum) and again as an open workshop at the CFC.
- Continued to deliver SFEC's flagship programs including our annual *Forestry and Wildlife Research Review* and monthly webinar series, including both online and broadcast site options for viewers.
- Renewed our two-year agreement with DNR-Forestry to manage a Continuing Education credit database for Forest Stewardship Plan preparers.
- Published two full-color calendars of events using the updated 2015 design.
- Balanced SFEC's budget.



Programs offered in FY17

In FY17, SFEC offered 19 educational events including 11 webinars and 8 workshops and symposia. Both the number of programs offered and the total number of participants in those programs declined slightly from FY16, which had a record high number of events and near-record high attendance. This year's decline is related in part to a staffing transition for SFEC and in part to a focus on new program development. Figure 1 shows the 20-year trends in SFEC program delivery and attendance. Tables 1 and 2 list programs and attendance for FY17.

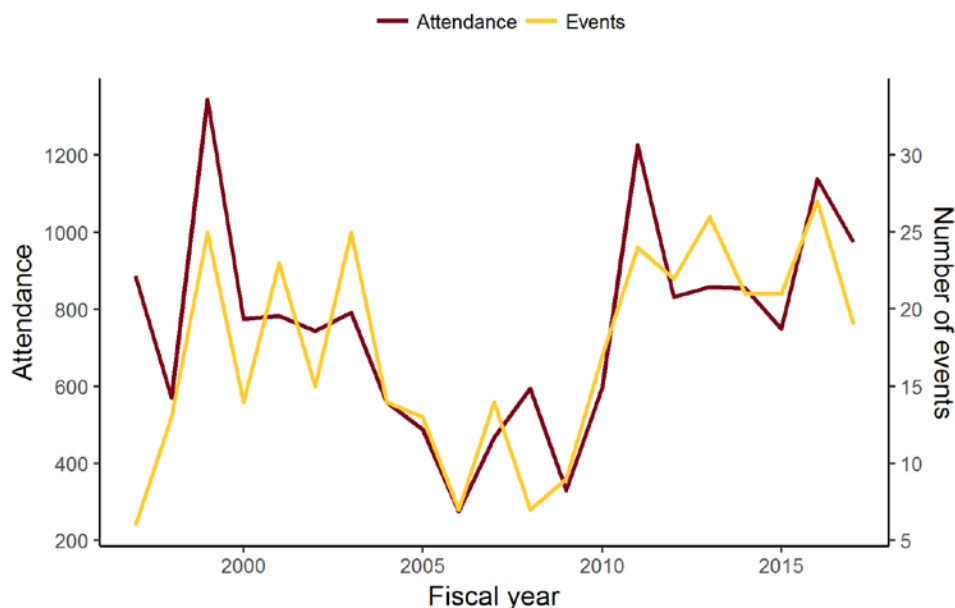


Figure 1. SFEC attendance and events from FY97 to FY17

Notable developments in program delivery include new investments in small unmanned aerial systems (sUAS) and fire-related programming.

Unmanned Aerial Systems: This year we invested in a new partnership with the University's Spatial Analysis and Remote Sensing Lab. Dan Heins and Andy Jenks developed a new curriculum for a two-day hands-on sUAS workshop. We delivered this workshop twice, "piloting" it first for a group of Superior National Forest staff in fall 2016, then opening it up for all registrants at the CFC in spring 2017. This is an important emerging technology and we are pleased to be able to offer quality instruction to help SFEC members stay up to speed.

Fire programming: SFEC has offered little programming directly focused on the role of fire in forest systems in recent years. This year we were pleased to be able to work with the Lake States Fire Sciences Consortium to offer a large symposium on the use of fire in Minnesota forests and a smaller, more hands-on follow up event focused on smoke management tools. The prevalence of fire-dependent forest systems throughout Minnesota combined with the presence of the Minnesota

Interagency Fire Consortium and the relatively low application of prescribed fire made these events popular and timely.

Table 1. SFEC program offerings in FY17

Type	Title	Date	Location	Attendance
Webinar	Forest Disturbances in Minnesota: What Impacts Us Most?	7/19/2016	Online	33
Webinar	Natural Resource Applications of Unmanned Aerial Systems	8/16/2016	Online	33
Field Day	Soils and Forest Management- Upland High-quality Soils	9/13/2016	Melrude	42
Workshop	Forest Health- Practical Management Options for Local Issues	9/20/2016	Bemidji	23
Workshop	Forest Health- Practical Management Options for Local Issues	9/21/2016	Baxter	14
Webinar	Service Delivery Options for Private Woodland Owners Interested in Forest Stewardship	9/22/2016	Online	24
Webinar	Oak and Fire in Minnesota Forests	10/25/2016	Online	67
Workshop	Practical Silviculture for Non-Foresters	10/26/2016	Hackensack	14
Webinar	Update on Northern Long-eared Bat Research in Minnesota	11/15/2016	Online	107
Symposium	Fire in Minnesota Forests	12/1/2016	Grand Rapids	142
Webinar	Minnesota's changing forests: 1935 to today	12/13/2016	Online	80
Symposium	2017 Forestry & Wildlife Research Review	1/10/2017	Cloquet	91
Webinar	Status of MN Forest Health	2/14/2017	Online	74
Webinar	Two Scales are Better Than One- How to Monitor Forests for Adaptive Management Without Breaking the Bank	3/21/2017	Online	38
Workshop	Smoke Tools	3/29/2017	Grand Rapids	11
Workshop	Natural Resource Applications of Unmanned Aerial Systems	4/6/2017	Cloquet	11
Webinar	EAB and Minnesota's Ash Resource	4/18/2017	Online	68
Webinar	Life Cycle Assessment- An Essential Tool for Determining Environmental Impacts	5/16/2017	Online	41
Webinar	Timber Harvesting and Wildlife Habitat	6/20/2017	Online	57
Total participants				970

Table 2. YouTube views on recorded FY17 webinars (as of 8/10/17)

Webinar recorded date	Title	Original "live" viewers	Additional views
7/19/2016	Forest Disturbances in Minnesota: What Impacts Us Most?	33	88
8/16/2016	Natural Resource Applications of Unmanned Aerial Systems	33	339
9/22/2016	Service Delivery Options for Private Woodland Owners Interested in Forest Stewardship	24	173
10/25/2016	Oak and Fire in Minnesota Forests	67	183
11/15/2016	Update on Northern Long-eared Bat Research in Minnesota	107	126
12/13/2016	Minnesota's changing forests: 1935 to today	80	165
2/14/2017	Status of Minnesota's Forest Health	74	126
3/21/2017	Two Scales are Better Than One- How to Monitor Forests for Adaptive Management Without Breaking the Bank	38	53
4/18/2017	EAB and Minnesota's Ash Resource	68	50
5/16/2017	Life Cycle Assessment- An Essential Tool for Determining Environmental Impacts	41	42
6/20/2017	Timber Harvesting and Wildlife Habitat	57	117
Total views		622	1462

SFEC membership

SFEC membership remains strong at 45 organizations, the same level as last year. About 85% of registrants in FY16 events were from SFEC member organizations, compared with 8% from nonmember orgs and 7% students.

Staffing

In late February 2017 SFEC program assistant Julie Hendrickson moved across the CFC office complex to take the helm of the Minnesota Tree Improvement Cooperative. We moved quickly to fill this important position, and were thrilled to welcome Madison Rodman in mid-April. Madison has degrees from the University of Minnesota and Oregon State University. She has quickly become an efficient and productive contributor to SFEC.

Progress on priorities from last year's report

Silviculture Library

SFEC launched the Great Lakes Silviculture Library in September 2015. The Library is an online repository of real-world silvicultural treatments including objectives, site attributes, prescriptions, outcome information, lessons learned, photographs, and more information. In its first year, the Library grew to about 42 published cases. In this, its second year, we received a new \$80,000 grant from the USDA's National Institute for Food and Agriculture to expand case study content. This new content will address silvicultural treatments related to six priority forest health issues: emerald ash borer, eastern larch beetle, dwarf mistletoe on black spruce, oak wilt, deer browse, and invasive and competing vegetation. The grant will also fund production of new multimedia content related to Great Lakes silviculture and some much-needed website improvements. The grant runs from September 2016 through August 2018.

Partnerships and collaboration

SFEC depends on contributions from a number of partners and collaborators to achieve its program delivery objectives and mission. Program leaders and land managers from our member organizations help us identify needs, develop programs, identify field sites, and effectively deliver quality education to Minnesota natural resource professionals. We are grateful for these contributions, which are too numerous to individually name.

This year we continued a productive relationship with the Minnesota Logger Education Program, the state's other major provider of continuing forest management and timber harvesting education programs. This is a productive collaboration for a number of reasons including program development and delivery efficiencies, but mostly because it enhances learning outcomes for many of our programs. We tend to see the greatest value from mixing logger and resource manager audiences for programs related to silviculture, timber sale design, and Forest Management Guideline implementation. We appreciate MLEP's continued commitment to this partnership and value the partnership greatly.

Blended learning

This year we continued our progress toward increased availability of targeted, relevant online content to supplement our in-person offerings. Specifically, this year we launched a new silviculture

video series (<http://z.umn.edu/SilvLibVideos>), continued our monthly webinar series, and began production of multimedia enhancements to some Silviculture Library case studies. These new materials are designed to add richness and engagement to our content.

Although we value online content and see it as a strategic asset, we remain cautious about diving in too deep. Online content has the potential to add value to relatively expensive in-person offerings by reinforcing key content and enabling sharing (among other things). However, it also has potential to undermine our in-person offerings by supplanting them and enabling continuing education that lacks personal interaction and the conversations and reflection inherent in it.

Our online offerings are thus focused specifically on content that adds value to our other offerings and helps us achieve our educational mission.

Areas of focus for FY18 and beyond

Ecosystem Silviculture Course

For the first time since 2013, SFEC will offer a completely revised cohort-based Ecosystem Silviculture course in FY18. The new offering is currently open for registration and nearing capacity of 20 registered participants. The first meeting of the new cohort will be October 3 in the Grand Rapids area, with the final meeting, which will include project presentations by students, in August 2018. If student interest is high enough, we will consider opening a new cohort in spring 2018. Although this first offering will run for ten months, we anticipate future offerings being condensed to six to seven months including individual project work.

Similar to past offerings, the FY18 course will focus on practical applications of quality, ecosystem-based silviculture in Minnesota's forests. But this course also includes a number of new components, including:

- Online content to supplement, reinforce, and add value to that delivered in person. This will include both synchronous (live online exchange) and asynchronous (on your own schedule) components.

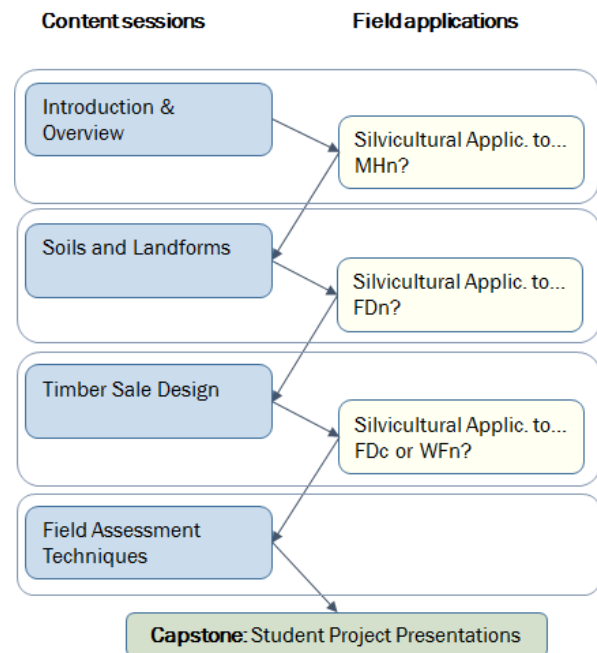


Figure 2: Schematic outline of the FY18 Ecosystem Silviculture course delivery plan, highlighting alternation between instruction and field application.

- An increase in what might be considered practical silviculture or forest management content such as timber sale design and forest inventory / field assessment considerations.
- Moving basic silviculture and Ecological Classification Systems content from this course to pre-requisite offerings supported by new online content.

A mix of familiar and new faces are behind this year's revised course. Cheryl Adams (UPM-Kymmene), John Almendinger, Dan Hanson, and Paul Dubuque (MN DNR-Forestry), Marcella Windmuller-Campione (UMN-FR), and Mark Jacobs (Aitkin County Land Department) join Eli and Madison to plan this year's course.

Development of new digital content

As noted above, we are trying to be strategic about our use of online and blended content. But we do expect to see major growth in FY18, primarily through the Ecosystem Silviculture course and the Great Lakes Silviculture Library. The common thread between these programs is of course silviculture, and we expect to be able to deploy some of the same content to support instruction through both.

New online content will include field video, interactive timelines of silvicultural treatments on old stands with detailed treatment records, short recorded lectures, and other formats suitable to the programs' learning objectives.

Program delivery plans for FY18

For the first time since 2015, SFEC will work with UMN-FR silviculturist Marcella Windmuller-Campione to offer the **Lake States module of the National Advanced Silviculture Program (NASP)**. While traditionally offered as a two-week in-person offering, this year's offering will include about an equal mix of online and in-person content. It will also offer a different kind of learning opportunity for natural resource managers interested in a deep dive into regional silviculture.

On October 10 and 11, 2017 we will host a major two-day symposium and field day entitled **Exploring Opportunities in Forest Management to Improve Wildlife Habitat**. This important event is designed to bring together a large and diverse group of people to learn, discuss, and identify priority actions in the domains of management, policy, and research related to forest conditions and wildlife population priorities. This event is offered as a broad collaboration with major contributions from the incipient **Minnesota Forest Habitat Collaborative**, led by Bob Tomlinson.

We are also planning a three-part series on **Storm Response** in September and October 2017. These workshops are the result of recommendations from our Educational Advisory and Executive Committee members at our August 2016 meetings. The workshops will focus on a mix of silvicultural, technological (mainly remote sensing and GIS), and operational considerations for forests impacted by intense storms.

This fall we also kick off a new multi-workshop series focused on **forest inventory and analysis**. This series begins in September 2017 with Tom Burk's Quicker Cheaper Stand Assessments, which focuses on efficient stand-level sampling techniques. Subsequent workshops in the series planned for spring 2018 will address planning large-scale inventories, remote sensing and GIS, software and related technology for inventory and planning, and using FIM and FIA data.

These multi-day offerings, in addition to Ecosystem Silviculture, continue SFEC's investment in deeper learning opportunities as an alternative to one-off offerings, as recommended by our Educational Advisory Committee a couple of years back.

Our program schedule for the first half of FY18 includes 6 webinars and 12 workshops, field days, or symposia. The complete schedule appears in our printed calendar.

Conclusion

SFEC remains on a growth trajectory with recent investments in assets like the Great Lakes Silviculture Library and Ecosystem Silviculture course beginning to generate value for our members and the Minnesota natural resource management community. We were fortunate to be able to quickly fill our Program Assistant position this spring and are well positioned for continued growth.

Our program schedule for the next year includes a number of offerings recommended by our Educational Advisory and Executive Committees as priority needs. We continue to be strategic in our adoption of distance learning technologies, generally through blended online- and in-person offerings rather than solely online.

As always, we appreciate our members' continued investment in SFEC and are privileged to be part of Minnesota's impressive natural resource management community.

Appendix 1: FY17 Event Budgets

Revenue	Expected	Actual
Webinars (12)	\$ 2,500	\$ 5,778
Soils & Forest Mgmt: Upland HQ field day	\$ 1,695	\$ 2,315
Forest Health - Practical	\$ 600	\$ 565
Teaching Forestry to Kids	\$ 1,275	\$ -
UAS Applications (SNF custom)	\$ 3,150	\$ 3,150
Silviculture for Non-foresters	\$ 2,060	\$ 1,115
Fire symposium	\$ 7,058	\$ 10,062
Research review	\$ 7,555	\$ 6,473
UAS applications spring	\$ 5,925	\$ 2,650
eFMG Online Course	\$ -	\$ -
Total Revenue	\$ 31,818	\$ 32,107

Expense	Expected	Actual
Webinars (12)	\$ (500)	\$ (1,833)
Soils & Forest Mgmt: Upland HQ field day	\$ (1,878)	\$ (1,958)
Forest Health - Practical	\$ (600)	\$ (525)
Teaching Forestry to Kids	\$ (1,211)	\$ -
UAS Applications (SNF custom)	\$ (2,482)	\$ (2,742)
Silviculture for Non-foresters	\$ (1,039)	\$ (784)
Fire symposium	\$ (5,298)	\$ (7,211)
Research review	\$ (3,948)	\$ (3,433)
UAS applications spring	\$ (4,715)	\$ (3,599)
eFMG Online Course	\$ -	\$ -
Total Expense	\$ (21,670)	\$ (22,084)

Net	Expected	Actual
Webinars (12)	\$ 2,000	\$ 3,945
Soils & Forest Mgmt: Upland HQ field day	\$ (183)	\$ 357
Forest Health - Practical	\$ -	\$ 40
Teaching Forestry to Kids	\$ 64	\$ -
UAS Applications (SNF custom)	\$ 668	\$ 408
Silviculture for Non-foresters	\$ 1,021	\$ 331
Fire symposium	\$ 1,760	\$ 2,851
Research review	\$ 3,607	\$ 3,040
UAS applications spring	\$ 1,211	\$ (949)
eFMG Online Course	\$ -	\$ -
Net Program Delivery Revenue	\$ 10,148	\$ 10,023

Appendix 2: SFEC Member Organizations

Aitkin County Land Department
Aitkin County SWCD
Beltrami County Natural Resource Mgmt
Bureau of Indian Affairs, Midwest Region
Camp Ripley Natural Resources
Carlton County Land Department
Carlton County SWCD
Cass County Land Department
Chequamegon-Nicolet National Forest (USFS)
Chippewa National Forest (USFS)
Clearwater County Land Department
Crow Wing County Land Department
Fond du Lac Reservation
Grand Portage Band of Chippewa
Hubbard County Natural Resource Mgmt
Itasca Community College
Itasca County Land Department
Itasca County SWCD
Koochiching County Land & Forestry
Lake County Land Department
Mille Lacs Band of Ojibwe
MN Association of County Land
Commissioners
MN DNR - Division of Ecological & Water
Resources

MN DNR - Division of Forestry
MN DNR - Forest Stewardship Planwriters
MN DNR - Section of Wildlife
MN Forest Resources Council
Molpus Timberland LLC
Pine County SWCD
Potlatch Corporation
Red Lake Tribal DNR
Sappi Fine Paper
South St. Louis County SWCD
St. John's University Arboretum
St. Louis County Land Department
Superior National Forest (USFS)
The Nature Conservancy – MN Chapter
UMD – Natural Resources Research Institute
UMN Extension Forestry
UMN Dept. of Forest Resources
UPM Blandin Paper Company
Wadena County SWCD
White Earth Tribal Forestry
WI DNR Division of Forestry
Vermilion Community College

Appendix 3: SFEC committee Members

Executive Committee

Greg Bernu, Carlton Cty LD (MACLC)
Gary Michael, DNR Forestry (Forest Stew writers)
Cheryl Adams, UPM Blandin Paper Company
Keith Jacobson, DNR Forestry
Ellen Bogardus-Szymaniak, SNF
Andy David, UMN MTIC
Steve Olson, FDL NR (Tribal NR)
Anne Oldakowski, Wadena SWCD (SWCDs)
Dave Zumeta, MFRC
Matthew Anderson, BIA, Midwest Region

Educational Advisory Committee

Angela Aarhus Ward, MN DNR Wildlife
Rich Courtemanche, Aitkin Co Forestry
Paul Dickson, Dickson Forestry
George Host, UMD NRRI
Paul Dubuque, MN DNR Forestry
Mike Larson, DNR Wildlife
Steve Olson, FDL NR (Tribal NR)
Anne Oldakowski, Wadena SWCD
Ellen Bogardus-Szymaniak, SNF
Andy David, UMN MTIC
Matt Radzak, MN Power
Lori Schmidt, Vermillion Community College
Rob Slesak, MFRC
Adam Sutherland, UPM-Kymmene
Jerry VanCleve, USDA FS, Chequamegon-Nicolet NF
Mark Weber, St Louis Co Land Commissioner
Jim Manolis, TNC - MN

Appendix 4: SFEC's FY18 Budget Summary

Figures in italics below are best guesses from SFEC records.

Revenue	FY12	FY13	FY14	FY15	FY16	FY17	FY18 Expected
Membership dues	\$47,250	\$47,500	\$41,000	\$41,000	\$39,000	\$41,500	\$41,500
Program revenue	\$34,510	\$22,888	\$26,325	\$31,692	\$40,487	\$32,107	\$33,000
Grants & other (offsetting s&f only)	\$20,500	\$14,000	\$9,500	\$22,080	\$27,000	\$22,700	\$25,000
UMN contributions	\$38,000	\$38,000	\$40,000	\$74,712	\$76,582	\$81,246	\$81,246
Total Revenue	\$140,260	\$122,388	\$116,825	\$169,485	\$183,069	\$177,553	\$180,746

Expenses	FY12	FY13	FY14	FY15	FY16	FY17	FY18 Expected
SFEC staff salary & fringe	\$(128,000)	\$(128,000)	\$(130,000)	\$(147,640)	\$(136,049)	\$(133,128)	\$(144,335)
Program delivery expenses	\$(20,000)	\$(20,000)	\$(16,000)	\$(16,295)	\$(18,485)	\$(22,084)	\$(18,000)
Other (postage, printing, etc)	\$(4,500)	\$(4,500)	\$(3,500)	\$(5,109)	\$(6,200)	\$(5,860)	\$(5,000)
Total Expenses	\$(152,500)	\$(152,500)	\$(149,500)	\$(169,044)	\$(160,734)	\$(161,072)	\$(167,335)

