

# Training the next generation of fire professionals to bridge research-management communities



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The Lake States Fire Science Consortium (LSFSC) is committed to ensuring that the best available science informs planning and management for fire-dependent ecosystems of the northern Lake States region. The LSFSC assists in identifying and filling knowledge gaps so that science informs practice, and vice-versa.

Unfortunately, for many local to regional fire management issues, few resources exist to bring managers and scientists together to solve these important issues.

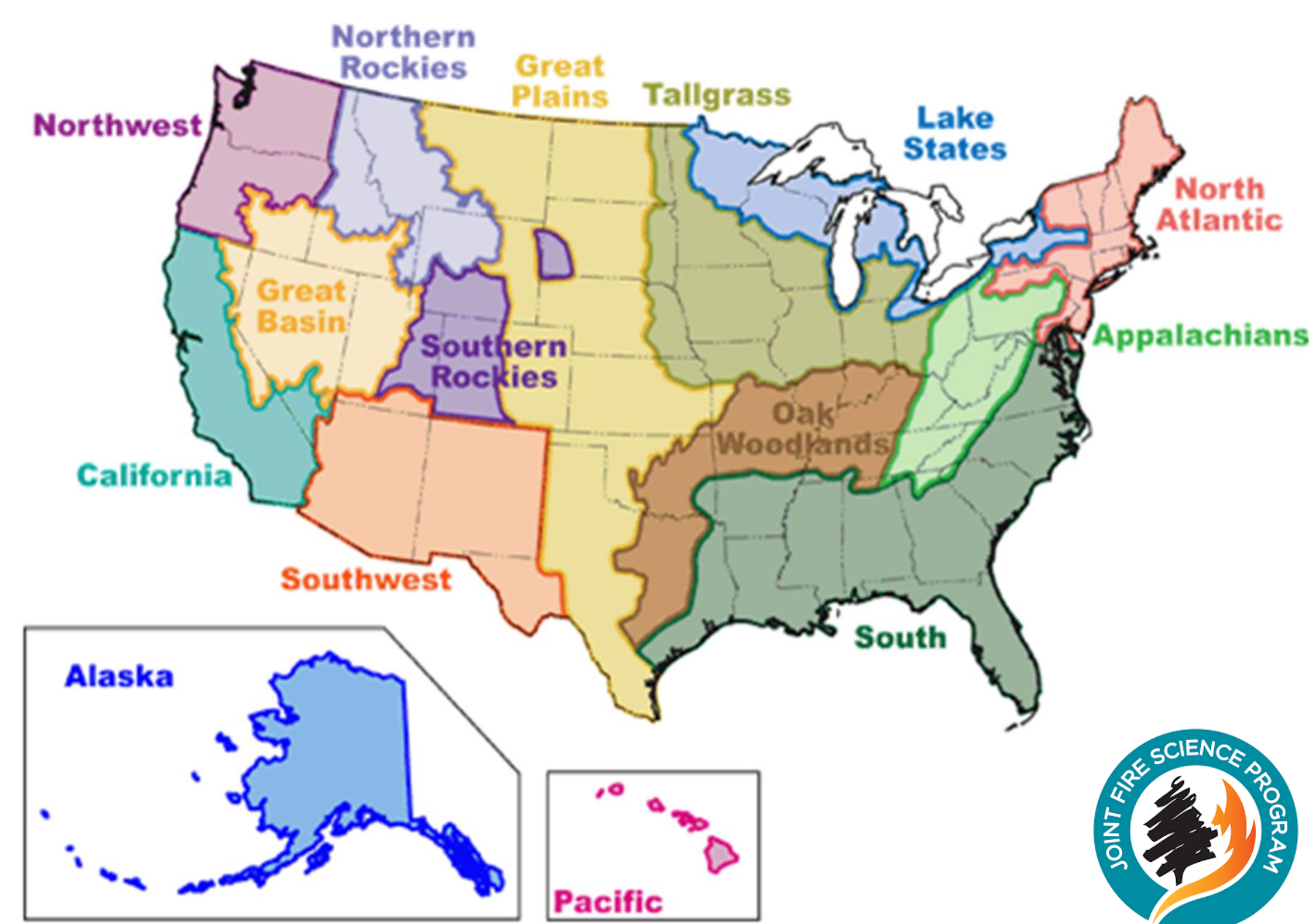
To enhance the opportunities for managers and scientists to work together, and to expose future professionals to opportunities for research-management collaborations, the LSFSC funds *student research internships that address regional fire science and management issues*. Internship projects are developed by joint manager-scientist teams. This program provides unique training opportunities that help prepare the next generation of fire professionals to bridge fire research and management perspectives.

## Who we are

The Lake States Fire Science Consortium (LSFSC) is one of 15 regional Fire Science Exchanges in North America, supported by the Joint Fire Science Program.

## Our mission

The LSFSC mission is to accelerate the awareness, understanding, and adoption of wildland fire science information by federal, tribal, state, local, and private stakeholders across the Lake States from Minnesota to New York, and the adjacent Canadian provinces of Ontario and Manitoba.



## Program accomplishments

The LSFSC internship program has supported:

- ❖ 2 to 3 internships annually between 2013 to 2019
- ❖ 16 internships total
- ❖ 11 new partnerships between fire researchers & fire managers
- ❖ 5 continuing projects\*

Projects funded to date represent:

- ❖ Diverse topics including fire history, traditional ecological knowledge, species responses to fire, and using fire to restore ecosystems
- ❖ Ecosystem types ranging from open barrens to closed-canopy forests

\*Priority is given to new partnerships

Successful proposals addressed one or both of the following criteria:

- *Facilitate development of a new or emerging cooperative project between research and management in the area of fire ecology and/or application; and/or*
- *Create a unique training experience for the intern that will enable that person to more easily work across traditional boundaries impeding integration of fire research and management in the Lake States region.*

## Project profiles

Sample responses from program participants:

- **Student:** "This was a valuable experience because it brought everything that I have learned in school together... it encompassed so many ecological areas, we worked in different types of stands, and collected data that can be used to help make better decisions for the future."
- **Tribal organization:** Identified benefits including "enhancing trust as well as shared governance & goals" between tribal & agency partners for managing culturally important species.
- **Agency:** "Today [the student] works as a Forester for [a] National Forest and is interested in graduate studies. [The student] recently contacted me about how to go back to graduate school & remain a FS employee."

Teams present project results via LSFSC webinars, which are archived & publicly available on our website.

<p><b>2013</b> Topic: Application of prescribed fire &amp; herbicide to reduce <i>Carex pensylvanica</i> Partners: • Grand Valley State University • Manistee National Forest Habitat: Dry sand prairie</p>	<p><b>2013</b> Topic: Mapping post-fire jack pine regeneration to inform management for Kirtland's warbler Partners: • Wayne State University • Huron &amp; Manistee National Forests Habitat: Jack pine forest</p>	<p><b>2013</b> Topic: Fire impacts on mercury concentrations in fish from Minnesota Lakes: management implications Partners: • University of Minnesota • Superior National Forest • USDA FS Northern Research Station Habitat: Northern lakes</p>	<p><b>2014</b> Topic: Restoring barrens &amp; northern dry forests in Northeastern Wisconsin Partners: • UW-Stephens Point • USDA FS Northern Research Station (WI, MN) Habitat: pine barrens and dry northern forests</p>	<p><b>2014</b> Topic: Evaluating the "spring dip" in foliar moisture, and relationship to crown fire potential Partners: • UW-Stephens Point • Wisconsin DNR • USDA FS Rocky Mountain Research Station Habitat: jack &amp; red pine forests</p>	<p><b>2015</b> Topic: Pollinator, plant diversity, &amp; fuel load response to restoration Partners: • USDA FS Northern Research Station • Chequamegon-Nicolet NF Habitat: pine barrens and dry northern forests</p>
<p><b>2015</b> Topic: Historical lens to evaluate changes in forest structure &amp; fire adaptation of Great Lakes Nat. Parks Partners: • UW-Madison • NPS Great Lakes Inventory &amp; Monitoring Network Habitat: Many forest types at eight NP units, using GLO &amp; recent monitoring data</p>	<p><b>2016</b> Topic: The role of seed banks in restoring degraded pine barrens Partners: • Chequamegon-Nicolet NF • USDA FS Northern Research Station Habitat: Pine barrens</p>		<p><b>2016</b> Topic: Contrasting plant communities between remnant &amp; restored barrens Partners: • USDA FS Northern Research Station • UW-Madison Habitat: Pine barrens &amp; dry northern forests</p>	<p><b>2017</b> Topic: Prescribed burning to improve management for brushland-dependent bird species; burn seasonality Partners: • University of Minnesota • Minnesota DNR Habitat: Lowland brushland</p>	
<p><b>2017</b> Topic: Research &amp; monitoring to inform management of Chryxus Arctic butterfly, an indicator of barrens quality Partners: • Chequamegon-Nicolet NF • Northland College • USDA FS Northern Research Station Habitat: Pine barrens</p>	<p><b>2017</b> Topic: Dendrochronology to understand the historic fire regime at Cloquet, MN Partners: • UW-Platteville • University of Minnesota • Cloquet Forestry Center Habitat: Red pine forest</p>	<p><b>2018</b> Topic: Burn seasonality; wildlife habitat in brushland vegetation Partners: • University of Minnesota • UMN Center for Forest Ecol. • Minnesota DNR Habitat: Brushland</p>	<p><b>2018</b> Topic: Fire restoration effects on culturally important species: lowbush &amp; velvetleaf blueberry Partners: • Leech Lake Band of Ojibwe • Chippewa NF • USDA FS Northern Research Station Habitat: Pine woodland</p>	<p><b>2019</b> Topic: Plant functional traits as indicators of restoration success after prescribed fire Partners: • Northland College • Michigan State University • Chequamegon-Nicolet NF Habitat: Pine barrens</p>	<p><b>2019</b> Topic: Integrating climate, soil &amp; hydrological monitoring with ecological assessment after prescribed burns Partners: • Leech Lake Band of Ojibwe • Leech Lake Tribal College • Chippewa NF • USDA FS Northern Res. Station Habitat: Pine woodland</p>

## Outcomes & next steps

This program has advanced partnerships and knowledge that will not only help improve management of fire-dependent ecosystems locally, but also provide training to the next generation of wildland fire professionals in skills for communicating across researcher and manager communities.

Applications accepted annually in early December. See <http://lakestatesfiresci.net> for information.

Thanks to the Joint Fire Science Program, and to Consortium partners:

