

A photograph of a person riding a dark horse and leading a pack animal (possibly a mule or donkey) across a snowy mountain landscape. The snow is white with some red markings. The surrounding terrain is rocky and covered in green grass. The title text is overlaid on the snow.

Developing a Data-Driven Trail Competency Framework

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March 29, 2022

Outline

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Project Background





“I just don’t know where to find the volunteers that have the skills I need to get our Forest’s particular projects done.”

~ 2019 National Trail Survey



Need for Consistent, Accessible, High-Quality Trails Training

Our challenge is to develop or renew relationships between NGOs and the FLMAs which takes levels of coordination and leadership that has only begun to become established or coordinated.

Need for Trails Training



Surveys Conducted

- 2011 National Trail Training Needs Survey
- 2019 Active Strategies Market Research on the Trails Industry
- 2019-2021 Regional Training Needs Survey



Needs Identified

- 65.6% - Publicizing and promoting training opportunities
- 64.4% - Coordinating workshops and instructors for local host sponsorship
- 59.8% - Helping groups/agencies develop local training programs



Why Should We Care

- Growth in the need for trails is requiring a high level of consistent skills
- Persistent trail maintenance backlog on public lands requires a more sustainable trail system
- Retirement and aging out of existing trail skills require a pathway for the next generation of trail professionals

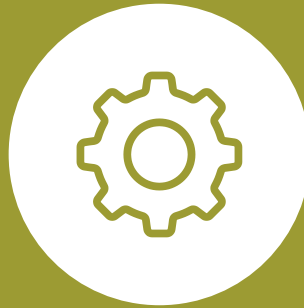
The Trail Skills Project Goals

**Our
emphasis
today**



Organize a Coalition of Partners

Shared leadership in developing, finalizing and managing the core competencies and building a shared community of practice web platform.




National Set of Core Competencies

A robust stakeholder outreach process including Federal land management agencies, NGOs, tribes and tribal organizations, and academia.



Align Trails Trainings Nationwide

Connecting all with trainings integrated with the agreed upon core competencies and delivered by skilled governmental, for-profit, and nonprofit providers.

A photograph of a snowmobile rider on a snowy trail. The rider is wearing a helmet and a dark jacket, and is riding a blue snowmobile with red skis. The trail is wide and covered in snow, with trees and a clear sky in the background. The text "Trail Competency Framework Project" is overlaid on the left side of the image.

Trail Competency Framework Project

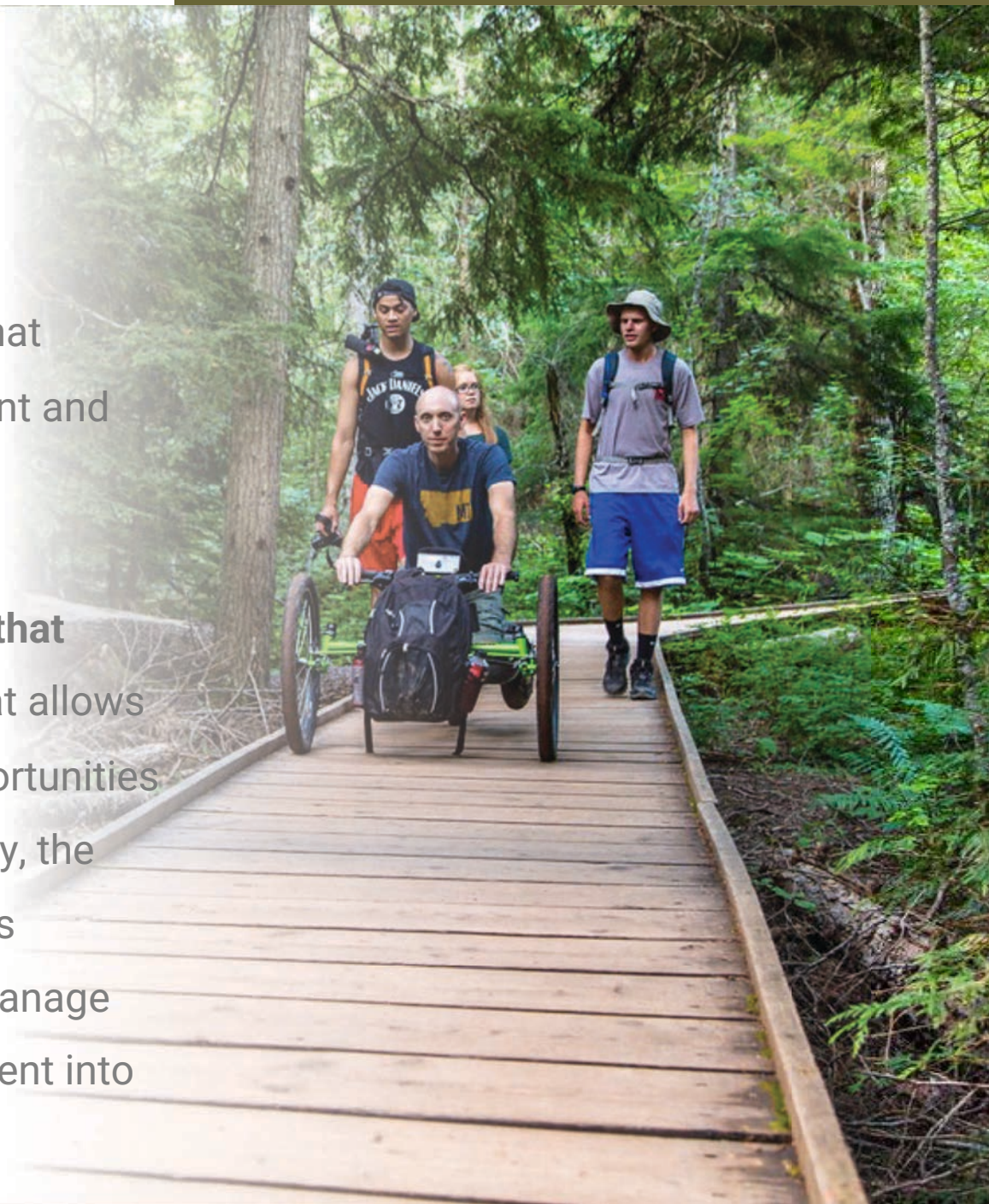
PURPOSE

This project sought to enhance professionalism as well as a higher level of skill for those working in trails through shared language around trail skills and expertise.

Our purpose was to develop a competency framework that would create opportunities to align, integrate and coordinate trail trainings nationwide; communicate needs for technical trail expertise; and increase the overall skill level of the trail workforce.

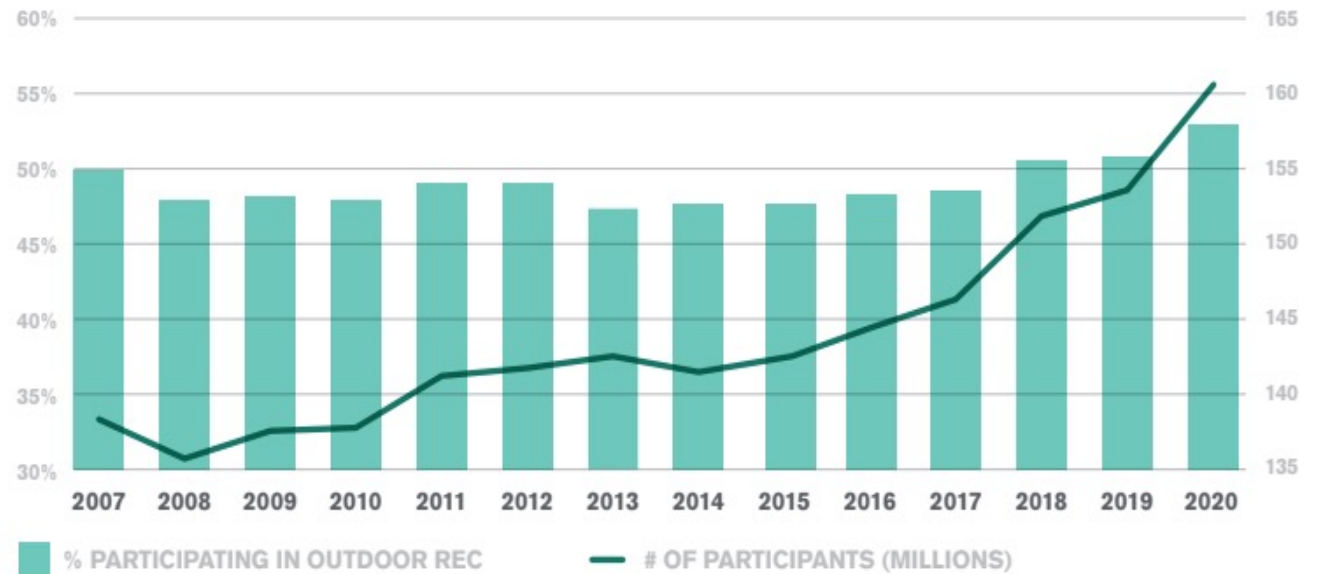
Our Goals

Following a multiyear process that includes stakeholder engagement and information gathering, the **Trail Competency Framework will be presented on a shared website that features a Trail Skills Finder** that allows users to search for training opportunities by core competency. Additionally, the initiative will identify a Trail Skills Partnership Coalition that will manage the competencies and web content into the future.



Why now?

Outdoor Participation is growing



2021 Outdoor Participation Trends Report (2021). Outdoor Foundation. <https://outdoorindustry.org/wp-content/uploads/2015/03/2021-Outdoor-Participation-Trends-Report.pdf>



Why now?

Great American Outdoors Act

- Up to \$1.6 billion invested annually for deferred maintenance projects on public lands & at tribal schools
- Support of tens of thousands of jobs
- Seeking to improve public access and visitor experiences

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Project Team





Met Consistently in 2021 & 2022

Drafted initial Core Competencies and definitions, provided structure, led Expert Outreach, and oversaw process.

Future Initiatives

Guide the development of the web platform (Trail Skills Finder).

NATIONAL TRAIL TRAINING CORE COMPETENCY TEAM

Representation from

- **American Trails**
- **Bureau of Land Management**
- **Eppley Institute for Parks and Public Lands**
- **Federal Highway Administration**
- **National Park Service**
- **Professional TrailBuilders Association**
- **Trailhead Consultants**
- **United States Forest Service**



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Research Design

Eppley's Competency Development Work

Applied, evidence-based work in furthering the professionalism of parks and recreation through competency-based management



- Identified competencies for park, recreation, and public lands managers that would be applicable internationally
- Resulted in two parks and recreation certificate programs, wherein park professionals can earn an international certification



- The research-based set of facility manager competencies were based on industry standards that were tailored to fit NPS
- Resulted in an NPS Facility Manager Leaders Program which was the first DOI program to win the federal Deming Award



- Developed and extensively reviewed by an interagency team in 2006
- Competencies can be used by each agency to identify training gaps and to guide development and delivery of training courses to bridge gaps

Study Design

Employing a Modified Delphi study design to develop and validate this set of core competencies, the study adopted a two-phase approach.



Phase 1: Draft Competency Statements

Drafted competency statements from existing literature in the field and the input of the project team members.



Phase 2: Online Feedback

Employed an online survey. This survey sought feedback on several measures per competency:

- Level of consensus (seeking 90%)
- Agreement for each skill level. More than 500 participants were recruited through expert referral & snowball sampling.



Determining Consensus



Consensus Standards

Research suggests that minimum consensus levels can be set as low as majority consensus or up to and exceeding 70% agreement (Keeney et al., 2011).



90% Threshold

With this context, the project team chose 90% agreement. This higher threshold was selected to provide further validation to the resulting competency framework

Persona Levels

ENTRY



- A competent crew member or volunteer
- Does trail work periodically
- Proficient with hand tools and can perform needed maintenance
- Understands basic feature-level planning (e.g., causes of erosion, where to put drainage structures)
- Trained on trail and tool safety

FULL PERFORMANCE



- Has all abilities of Entry level
- Does trail work on a regular basis
- Expert in hand tool use and can train others on proper tool use, safety, and maintenance
- Able to lead a crew
- Understands user and natural trail impacts
- Can perform field assessments of trails and make recommendations
- Has skills in trails-related project management

EXPERT



- Has all abilities of Full Performance level
- Is a career professional in land management and/or planning
- Expert in trail assessment, planning, and design
- Able to manage permitting and bidding processes
- Has specialized skills in some areas needed for trail planning or construction (e.g., NEPA, machine operations, stonework)

Survey Snapshot

	Competency rating				
	<u>Not</u> a trail competency	Entry	Full Performance	Expert	I lack the expertise to rate this item
A. Construction Specifications. Understand and apply common construction specifications/trail management objectives such as corridor height/width, tread width, cross/outslope, protrusions, obstacles, and compaction.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Results

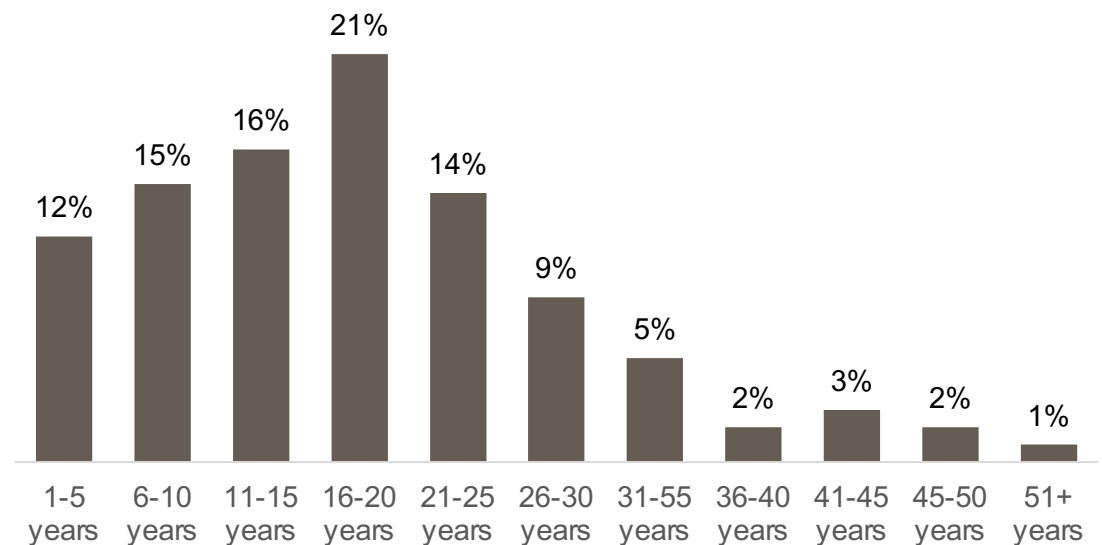


Survey Respondents Profile

Survey Respondents by Institutional Category

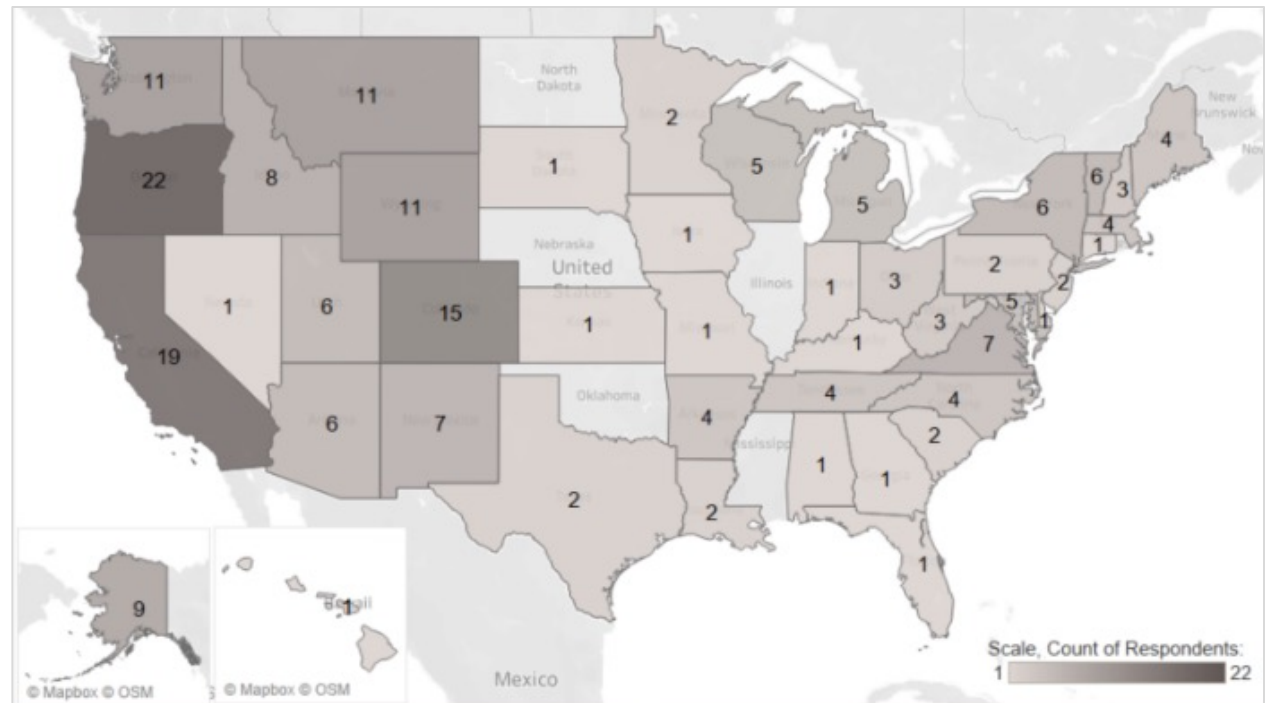
Respondent Institution or Organization	Count	% of Total
Federal	87	40%
BLM (12, 5%)		
NPS (29, 13%)		
USFS (46, 21%)		
State System	23	10%
Private	70	32%
Nonprofit	29	13%
Local, County, Higher Education & Other	11	5%
Grand Total	220	100%

Study Participants by Years of Trail Experience



Survey Respondents Profile (continued)

U.S. State of Respondents



Competency Framework

























1. Trail Construction
2. Trail Maintenance
3. Project Preparation
4. Project Planning & Design
5. Project & Crew Management
6. Program Administration & Leadership

Construction Specifications
Program Budgeting
Communications
Contract Administration
Education and Public Outreach
Funding/Grants
Inspections/Monitoring
Partnership and Collaboration
Policy/Directives/Law
Visitor Use Management and Monitoring
Agreement Development

Example: Trail Maintenance

Trail Maintenance Competency	Entry	Full Performance	Expert
A. Maintenance Specifications. Understand and apply common maintenance specifications/trail management objectives such as corridor height/width, tread width, cross/outslope, protrusions, obstacles, and water management techniques.	●	●	●
B. Inventory & Assessment. Demonstrate ability to assess trail conditions, identify causes of trail degradation (e.g., water, grades, soil conditions, users, and/or use patterns), and appropriate actions to address the deficiencies.	○	●	●
C. Corridor Clearing: Power tools. Safely use chainsaws and other power tools in trail development and maintenance and resource management.	◐	●	●
D. Corridor clearing: Hand tools. Use hand tools to safely remove small standing trees, hazard trees, fallen logs, brush, vegetation, rocks, or other impediments to trail tread construction to the specified trail corridor width and height.	●	●	●
E. Tread Maintenance - Hand tools. Restore trail to its designed specifications for tread width, cross/outslope, protrusions, and obstacles using hand tools.	●	●	●
F. Tread Maintenance - Mechanized Equipment. Restore trail to its designed specifications for tread width, cross/outslope, protrusions, and obstacles using mechanized equipment (e.g., compactors, mini-excavator, skid steer, trail dozer).	○	●	●
G. Drainage Features/Water Management. Construct/restore trail drainage features that decrease erosion, (e.g., knicks, grade dips, grade reversals, berms, ditches, and sheet drains).	◐	●	●

Example: Project Planning and Design

Project Planning & Design Competency	Entry	Full Performance	Expert
A. Project Cost Estimation. Ability to determine cost of project construction, maintenance and related oversight, permitting and planning (including tools, consumables, volunteer and staff time, equipment, materials), locating sources of professional and technical assistance, and evaluating contract proposals.			
B. Implementation Plan. Accurately interpret specifications, construction process notes, and construction documents to develop an implementation plan based on available labor and funding.			
C. Trail Specifications. Identify trail elements (i.e., tread material, width, height, grades, and structures) that are appropriate for the intended use, resource conditions, budget, and stewardship capacity.			
D. Design. Delineate the trail alignment, width, height, grade and structures appropriate to the intended trail use.			
E. Trail Plans. Transfer field-delineated trail design (location, alignment, structures), along with construction process, materials, notes, special conditions into a document that will guide the trail development process.			
F. Interpretation. Identify specific interpretive and educational opportunities on trails to contextualize the visitor experience (e.g., history, habitats, scenery, flora/fauna), and make recommendations for interpretive method.			
G. Permitting. Ensure compliance with applicable permitting requirements including (but not limited to): National Environmental Protection Act (NEPA), Section 106 of the Antiquities Act, the Historic Preservation Act, National Pollutant Discharge Elimination System (NPDES), local and regional permitting, water/wetland crossings, environmental review compliance, etc.			
H. Universal Design/ADA Accessibility. Use universal design principles, the Americans with Disabilities Act, and the Architectural Barriers Act accessibility standards to design, layout, and lead construction of accessible trail and trail facilities.			

Revised List of Specialty Competencies

Specialty Group	Suggested Specialty Competency	
Original	<ul style="list-style-type: none"> • MTB-optimized trails • Bike Parks and trails • Blasting • Bridge Design/Construction; Boardwalk Design/Construction • Data/GIS/Mapping • Horsemanship, Packing & Stock Management • Paved Trails • Rigging/Highlining • Road to Trail Conversion • Stonework • Turn Development (Climbing turn, Switchbacks) • Technical Trail Features (TTF) • Viewing Platforms • Water Trail Put-in/Take-out • Equestrian Trail • OHV Trail 	
Relocated		
Additions		

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Next Steps





TrailSkills.org

Shared Community of Practice Website

American Trails will lead in the development of a shared community of practice virtual space in which all of the trails community can be excited to fully engage and support into the future. The home for this new initiative will be "www.TrailSkills.org" and will be managed and maintained by American Trails, with the support of the full trails community. Key elements of this platform include: A universally agreed upon set of **Trail Training Core Competencies**, a **Trail Skills Finder** for connecting individuals and organizations, and a **Training Calendar and Resource Center**.

<https://www.youtube.com/watch?v=wJhw4q2iof0>

Use Cases

We seek to identify shared language around trail skills and expertise, which we hope will:

Develop a Common Language

Identify Training Gaps

Describe Opportunities & Evaluate Applicants

Design Trainings

Professional Development Tool

Identified Career Pathways into Trails

Next Steps

Launching the
TrailSkills.org
website

Defining
competencies by
persona level

Developing
descriptions for each
specialty skill



Conclusion & *Thank You!*

To receive...

- ✓ A copy of the full report
- ✓ A notification when TrailSkills.org launches
- ✓ More information about how to get involved

Fill out this form:

