

Demonstration of soil thickness and carbon (STC) method

- PI: Kathleen Lohse and Nicholas Patton
- Grant #: IGEM25-004
- Reporting Period: 7/1/24 -12/31/24



Summary of progress towards proposed milestones FY24

OBJ.	Tasks	Metric	Expected	Progress	Completed	Issues / Notes
1	A)	Submit IGEM-HERC proposal	Yes	Yes	✓	-
	B)	Hire specialist / technicians / volunteers	3	1 - 4 - 5	✓	Specialist starts in February
	C)	Obtain agreements / commitments for field area	5-6	6	✓	4 additional sites
		Acquire elevation datasets for field areas	5-6	6	✓	4 additional sites
		Select sites for soil pit excavation	55-66	100	✓	-
2	D)	Travel to field areas	5-6	6	✓	2 areas with replicates
		Excavate and sample soil pits	73-84	100	✓	-
		Collect soil samples	580-661	560		-
	E)	Register samples in SESAR2	580-661	560		https://app.geosamples.org/sample_group.php?group_id=422
		Process samples	580-661	442		-
		Analyze for carbon	580-661	250 in queue		310 remaining
		Produce publicly available, online datasets	NA	NA		
	F)	Evaluate STC model uncertainty	5-6	6	✓	
Generate high-resolution STC outputs		5-6	2	✓	For soil thickness	
3	G)	Develop visualization model	NA	NA		
		Document limitations and possible steps forward	Yes	Yes	✓	
		Produce client reports	5-6	6		Partial Reports
4	H)	Attend the 4-week I-Corps program	Yes	Yes	✓	
		Contact individuals for market research	1-5	17	✓	
		Develop a legal business structure	Yes	NA	_____	COI Management Plan
		Register business	NA	NA	_____	COI Management Plan
		Total number of future clients engaged	0-2	NA	_____	COI Management Plan

Summary of expenditures and budget performance FY24

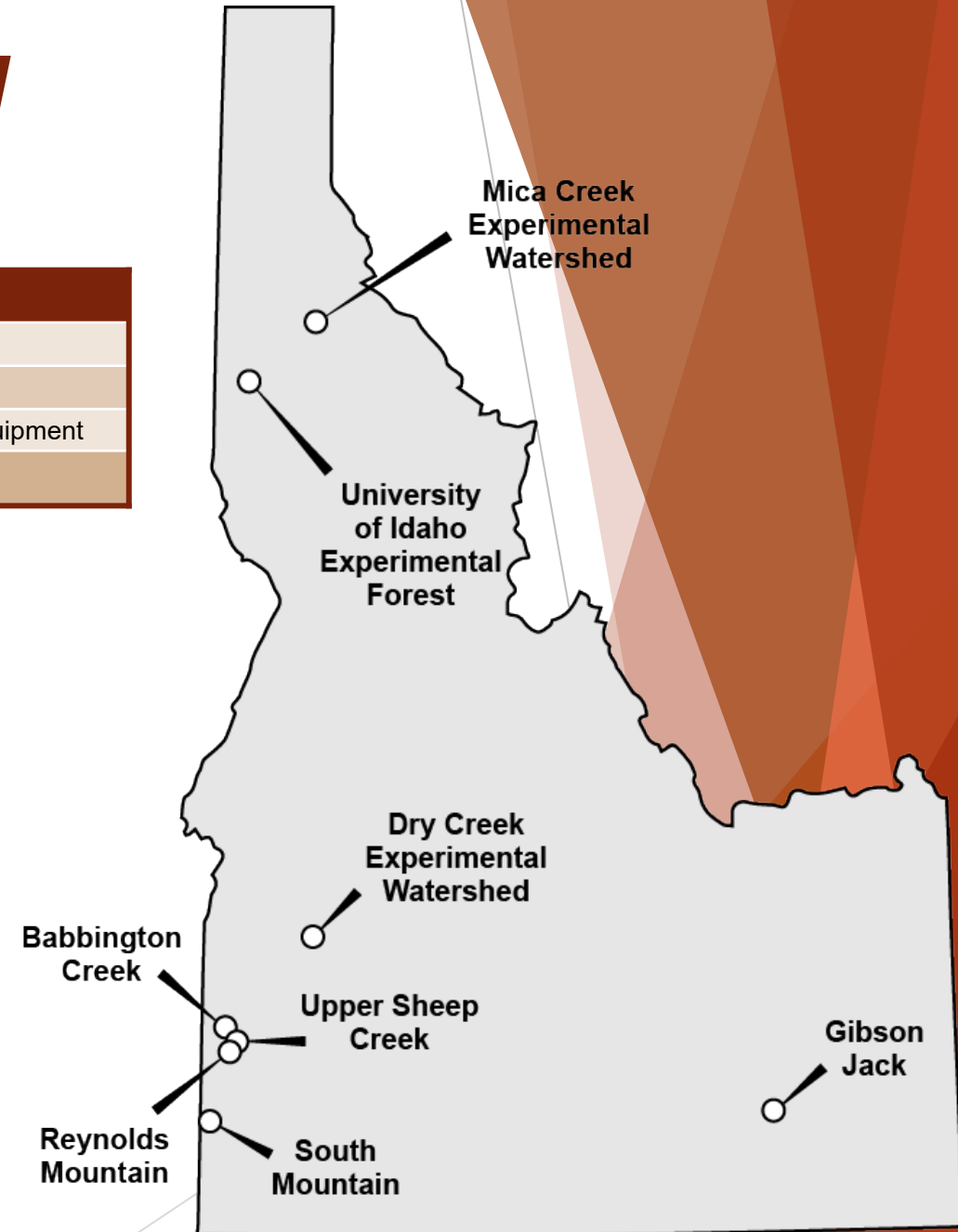
	Budgeted	Spent	+/-	Notes / Issues
Salary	\$139,807	\$48,503	\$5,000	Hiring delays
Travel	\$20,000	\$10,992	\$0	Additional field visits
Other direct cost	\$41,000	\$2000	\$2204	Lab delays: construction and broken equipment
TOTAL	\$200,807	\$61,495	\$7,204	

► Key Insights

- Spending is on track with expectations
- Major expenditures included:
 - Salary of PIs, Seasonal Techs and Research Specialist
 - Travel to and from Idaho Field Areas
 - Lab supplies, analyses and field equipment
 - Broken Soil Mill/Grinder

► Challenges/Changes

- Hiring delays
- Laboratory delays
- Travel to field areas
 - Weather
 - Hazards (air quality, heat, fire)
 - Personnel availability



Projection of work by the start of FY25

Example - Gibson Jack, Idaho

OBJ.	Tasks	Metric	Completed
1	A)	Submit IGEM-HERC proposal	✓
	B)	Hire specialist / technicians / volunteers	✓
	C)	Obtain agreements / commitments for field area	✓
		Acquire elevation datasets for field areas	✓
		Select sites for soil pit excavation	✓
2	D)	Travel to field areas	✓
		Excavate and sample soil pits	✓
		Collect soil samples	✓
	E)	Register samples in SESAR	✓
		Process samples	✓
		Analyze for carbon	✓
		Produce publicly available, online datasets	✓
	F)	Evaluate STC model uncertainty	✓
Generate high-resolution STC outputs		✓	
3	G)	Develop visualization model	✓
		Document limitations and possible steps forward	✓
		Produce client reports	✓
4	H)	Attend the 4-week I-Corps program	✓
		Contact individuals for market research	✓
		Develop a legal business structure	
		Register business	
		Total number of future clients engaged	

