Spruce Beetle Epidemic Aspen Decline Management Response (SBEADMR) Community Report

Fiscal Year 2024

History of SBEADMR and Adaptive Management Group (AMG)

In the Grand Mesa, Uncompahgre and Gunnison (GMUG) National Forests, approximately 40 percent of Engelmann spruce and aspen forests have been affected by insects and disease over the past decade. The Spruce Beetle Aspen Decline Management Response (SBEADMR) Environmental Impact Statement (EIS) was created to address a decade of disturbance issues and improve forest health for roughly 120,000 acres on the GMUG.

The purpose of SBEADMR is three-fold: minimize threats from falling, dead trees and better manage wildfires (safety); improve the resiliency of stands at risk to insects and disease (resiliency); and treat affected stands via recovery of salvageable timber and re-establishment of desired forest conditions (recovery).

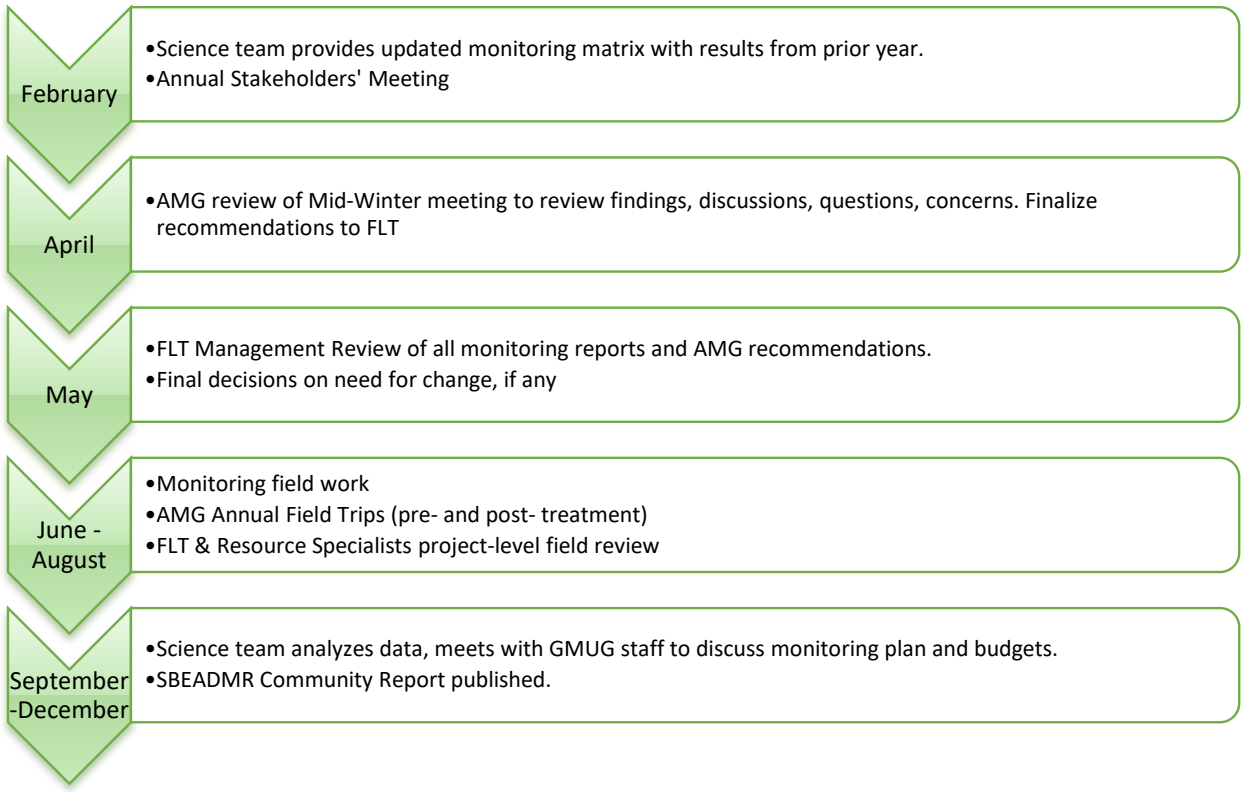
The SBEADMR Adaptive Management Group circles up at a pre-treatment review field trip for the Big Park Timber sale, August 2019

Launched by the GMUG in 2016, SBEADMR is designed to allow a more nimble "adaptive management" response to rapidly changing forest conditions associated with insect and disease outbreaks than is typically possible under U.S. Forest Service's (USFS) planning process. Conventional planning processes for forest treatments like timber harvesting can take years to complete. Although insect and disease outbreaks are part of natural disturbance cycles, the epidemic level outbreaks occurring over the last decade have produced significant mortality in the time it can take to complete the planning and analysis process for a forest treatment. Given the rapid rates of changes on forest landscapes, resiliency treatments frequently need to be redesigned into salvage treatments, a process that traditionally would require restarting the entire planning process. SBEADMR avoids this problem by using an adaptive management approach that allows the USFS to designate large swaths of land as priority treatment areas and then target specific stands of trees on an annual basis, based on current conditions.

While this novel approach provided flexibility for management response, it also generated concerns from local stakeholders because of the lack of specificity about the proposed projects and the areas that would be treated. Moreover, stakeholders wanted to see more science-driven management decisions and had concerns about the impacts of temporary logging roads, disruption to recreational users, impacts on wildlife and lack of public input on specific projects. To address these concerns the USFS agreed to fund an independent science advisory team to help identify treatment

locations and inform the adaptive approach and management decision making. The GMUG also supported stakeholders' interest in convening a community based collaborative working group, which later evolved into the SBEADMR Adaptive Management Group (AMG).

The AMG is a citizen-based working group composed of individuals representing diverse local and regional interests and perspectives. Members are self-selected by stakeholder category except for the community at-large representatives, who are appointed by their respective county commissioners. Stakeholder categories include county commissioners, forestry processors, forestry loggers, conservation groups, water resources, recreation, wildlife and fish, education, Colorado State Forest Service and at-large members. The primary purpose of the AMG is to assist the GMUG in applying the adaptive management framework over a multi-year timeframe in accordance with the SBEADMR Record of Decision.



An overview of a typical year of engagement in the SBEADMR adaptive management process

The goals of the AMG are to:

- Provide comments on proposed treatment sites.
- Help with articulating monitoring questions.
- Participate in post-treatment evaluations.
- Review monitoring to make recommendations for adaptive management for future projects.
- Anticipate local roadblocks that may arise and work to resolve them.
- Strive for consensus of diverse interests on recommendations submitted to the GMUG.

In addition, the AMG appointed a Monitoring Committee to identify, organize, observe and monitor the following:

- Community understanding and engagement.
- Socio-economic data and impacts.
- Collaborative adaptive management process and outcomes.
- Tracking science studies and monitoring efforts.

The AMG also works directly with the SBEADMR Science Team to determine questions that need to be answered using the best available science. Comprised of researchers with expertise in forest ecology, silviculture, wildlife biology and natural resource socioeconomics, the Science Team designs rigorous studies and collects and analyzes data. The results of these scientific studies can then be used to guide management policies and projects on the ground.

SBEADMR Science Team Updates

The Science Team presented the 2023 monitoring results at the February 2024 SBEADMR Annual Meeting. Presentation summaries are listed below by project title.

Impacts of spruce bark beetle and subsequent salvage in Engelmann spruce and Engelmann spruce-aspen forests of the Gunnison National Forest on forest structure and tree regeneration.

Lead: Dr. Mike Battaglia, US Forest Service Rocky Mountain Research Station

Background

A major concern raised by stakeholders in the initial stages of SBEADMR was the impact of spruce beetle and salvage treatments on forest regeneration. Would salvage treatments have a detrimental impact on existing advanced regeneration (i.e. seedlings and saplings) in spruce-dominated stands? To address this concern and improve understanding of the legacies of previous management in spruce beetle-affected stands on current forests, in 2015 and 2016 the science team established 117 forest inventory plots in spruce and spruce-aspen forests in the Gunnison Basin on the GMUG National Forest. Forty-five plots are "intensive" plots and are subject to repeat sample. The 2023 resampling effort is the last measurement currently planned for these 'intensive' plots.

2023 Monitoring

Variables measured in 2023 include tree regeneration, regeneration survival, and seed production. In addition, field crews collected temperature data from sensors placed below ground, ground-level and above-ground.

2023 Results

The 2023 remeasurements of intensive monitoring plots indicate both the spruce-dominated and spruce/aspen mixed stands continue to recruit a mix of new aspen and Engelmann spruce seedlings. In fact, in the spruce/aspen stands, aspen recruitment is exceeding spruce recruitment (except in previously harvested areas). Standing dead trees are limited in the salvage units compared to the unmanaged and previously harvested stands.

In spruce stands, spruce overstory and seedling survival is similar across salvage and unsalvaged units. Spruce sapling survival is lower in salvage units compared to unsalvaged units. In spruce-aspen stands, there are no apparent differences in survival across treatment types.

Interpretation

In 2023, remeasurement of a subset of the initial assessment plots allowed us to look at trends over the past 5 to 8 years. Due to the spruce beetle killing the majority of pole and sawtimber sized spruce trees, in both unmanaged and previously harvested stands, live Basal Area is low. Much of the live Basal area is found within the pole and sapling sized classes and is increasing. When looking at the number of trees, most of the live trees are dominated by saplings and seedling size classes. We continue to observe suitable seedling establishment in both treatments; however, species composition of seedlings differs. Unmanaged stands are a mix of spruce and aspen, while the previously managed stands are dominated by spruce. As expected, most of the tree mortality was found in the pole and sawtimber size classes of

the spruce, ranging from 59 to 89%, however the majority of standing dead is found in the sapling size class. [did most of the poles and sawtimber fall down already?]

Overall, both the unmanaged and previously managed stands are dominated by trees <5 inch dbh of Engelmann spruce and Aspen. Live tree density of these stands indicates suitable stocking. Both stands have high levels of sapling- and pole-sized mortality that will continue to contribute to coarse woody fuel loads.

In spruce dominated stands, the survival of spruce >5 inch dbh continues to be good with similar height and diameter growth among the different treatments. Spruce saplings (<5 inch dbh) did see a decrease in survival compared to the unmanaged and previously harvested stands. These saplings also grew slower in height, but diameter growth was similar. The spruce seedlings continue to survive and growth with similar values across the treatments. Inference for the aspen response was limited due to small sample size.

In spruce-aspen dominated stands, the survival of both overstory spruce and aspen continues to be good across all treatments. Spruce overstory survival and dbh growth was lower in the unmanaged stands, but the height growth was fastest. Spruce saplings continue to have similar survival and dbh growth, but height growth was slowest in the salvaged units. Spruce seedlings still surviving well with similar height growth among the treatments.

The aspen overstory has good and similar survival across treatments with similar height growth, but dbh growth slower in the salvaged stands. Aspen saplings continue to have good survival with similar dbh growth among treatments, but higher height growth in the salvaged treatments. Aspen seedlings are also doing well, with substantial height and dbh growth in the salvaged areas.

Adaptive Management

The GMUG's Annual Management Reviews consider input from AMG recommendations, GMUG resource specialists, SBEADMR Science Team and other relevant research in order to make adaptive management decisions for the design and implementation of SBEADMR projects. Management Reviews are conducted by the GMUG Forest Leadership Team (FLT) who make final decisions on changes to SBEADMR implementation. The following changes were made in 2024.

FY 2024 SBEADMR Treatment Checklist Changes

In FY24 design feature SP-4 regarding slash piles was updated based on AMG recommendations after discussion at the Rainbow timber sale post-treatment review with GMUG staff. This design feature specifies the location and dimensions of slash piles. During the field trip there was recognition that in some cases the quantity of slash may necessitate a slightly larger pile that is currently allowed by the design feature, so it was modified to allow for flexibility in footprint size subject to approval by Forest Service Representative.

Other Changes

The AMG made several recommendations to GMUG FLT during the spring management review process. They recommended that the GMUG use SBEADMR PTAs to create strategic fuel breaks, where appropriate, along POD lines to harden control features for safe and effective response. They also recommended that the GMUG continue to reuse landing sites at timber sales as much as possible. Full text of AMG recommendations and FLT response can be found in the Adaptive Implementation Annual Report for 2024.

Log deck on the Big Willow Good Neighbor Authority timber sale

SBEADMR Timber and Fuels Treatments
Projects Awarded from Fiscal Year 2016 through Fiscal Year 2024

Sale Name	FY Awarded	Resource Zone*	Treatment Type	Acres Treated	Volume Produced (CCF)	Miles of Temporary Road	Treatment Status
Horse Mountain	2016	North	Resiliency	110	1,449	1.4	Complete
Cathedral	2017	East	Salvage	640	13,497	10	Complete
Nutras	2017	East	Salvage	210	5,835	1.8	Complete
Pauline	2017	East	Salvage	1,874	18,615	9.7	Complete
Skeleton	2017	East	Salvage	610	12,777	8.4	Complete
Willow Mesa	2017	East	Salvage	440	5,800	6.4	Complete
Moore Knots	2017	North	Sanitation	15	70	0	Complete
Little Cone	2017	West	Resiliency	86	1,775	0	Complete
Cooler	2018	East	Salvage	244	2,167	1.4	Complete
Divide Salvage	2018	East	Salvage	160	2,545	1	Complete
Last Tree	2018	East	Salvage	466	6,270	3.7	Complete
Millswitch	2018	East	Salvage	885	18,516	2.6	Active
Quill	2018	East	Salvage	569	6,708	4.4	Complete
Sargents Mesa	2018	East	Salvage	1,468	14,195	9.7	Complete
Crane	2018	North	Resiliency	475	8,552	1.6	Complete
High Mesa	2018	West	Salvage	320	13,178	3	Complete
Big Willow	2019	East	Salvage	2177	41,224	12	Complete
Buffalo Forks	2019	East	Salvage/ Resiliency	100	1,442	0	Sold
Ridgestock	2019	East	Salvage	1,300	28,858	12	Complete
Sage Park	2019	East	Salvage	14	130	0	Complete
Jackson	2019	West	Salvage/ Resiliency	321	10,789	3.03	Complete
Telski	2019	West	Resiliency	50	500	0	Complete
Overland	2020	North	Resiliency	701	18,761	4	Complete
Hubbard	2020	North	Resiliency	896	16,114	7.2	Complete
Rainbow	2020	East	Resiliency	956	5,418	5.6	Complete
Grouse Glade	2020	West	Resiliency	20	111	0	Complete
Big Park	2020	West	Salvage/Resiliency	1,056	16,145	1	Active
Big Creek	2021	North	Resiliency	309	2,902	3.72	Complete
Kannah	2021	North	Resiliency	345	2791	3.63	Complete
Kitson	2021	North	Salvage	21	228	0.7	Complete

Sale Name	FY Awarded	Resource Zone*	Treatment Type	Acres Treated	Volume Produced (CCF)	Miles of Temporary Road	Treatment Status
Lost 80	2021	North	Salvage	22	103	0	Sold
Muddy Aspen	2021	North	Aspen	159	4,524	0	Complete
Sweaty	2021	North	Resiliency	184	1,832	1.07	Active
Antelope	2021	East	Resiliency	1,258	7,680		Sold
Little Cone GNA	2021	West	Resiliency	86	1,895	0	Complete
Lone Craver	2021	West	Resiliency	545	14,142		Sold
Telski Forest Health	2021	West	Resiliency	12	746	0	Sold
Boston Peak	2022	East	Resiliency	1,010	12,984		Sold
Groundhog	2022	West	Resiliency	170	1,974		Sold
Leon	2023	North	Resiliency	668	2,584		Sold
Atkinson	2023	North	Resiliency	624	3,558		Sold
Mesa Creek	2023	North	Fuels Reduction	170	0	0	Complete
Main Mesa Leftovers	2024	North	Resiliency	417	6,112	2.37	Active
Black Mesa Leftovers	2024	North	Resiliency	28	120	0	Sold
Totals				***22,191***	***335,616***	***121.42***	

*****Resource Zones: East = Gunnison Ranger District, North = Grand Valley and Paonia Districts, West = Ouray and Norwood Ranger Districts

Contact Information

GMUG NF Supervisor's Office Staff:

Jay Gatlin, Acting Renewable Resource Staff Officer - jennifer.gatlin@usda.gov
Carlyn Perovich, Ecologist - carlyn.perovich@usda.gov
Autumn Serna, Acting Timber Program Manager – autumn.serna@usda.gov

For information about specific treatments contact your USFS District Timber Management Assistant:

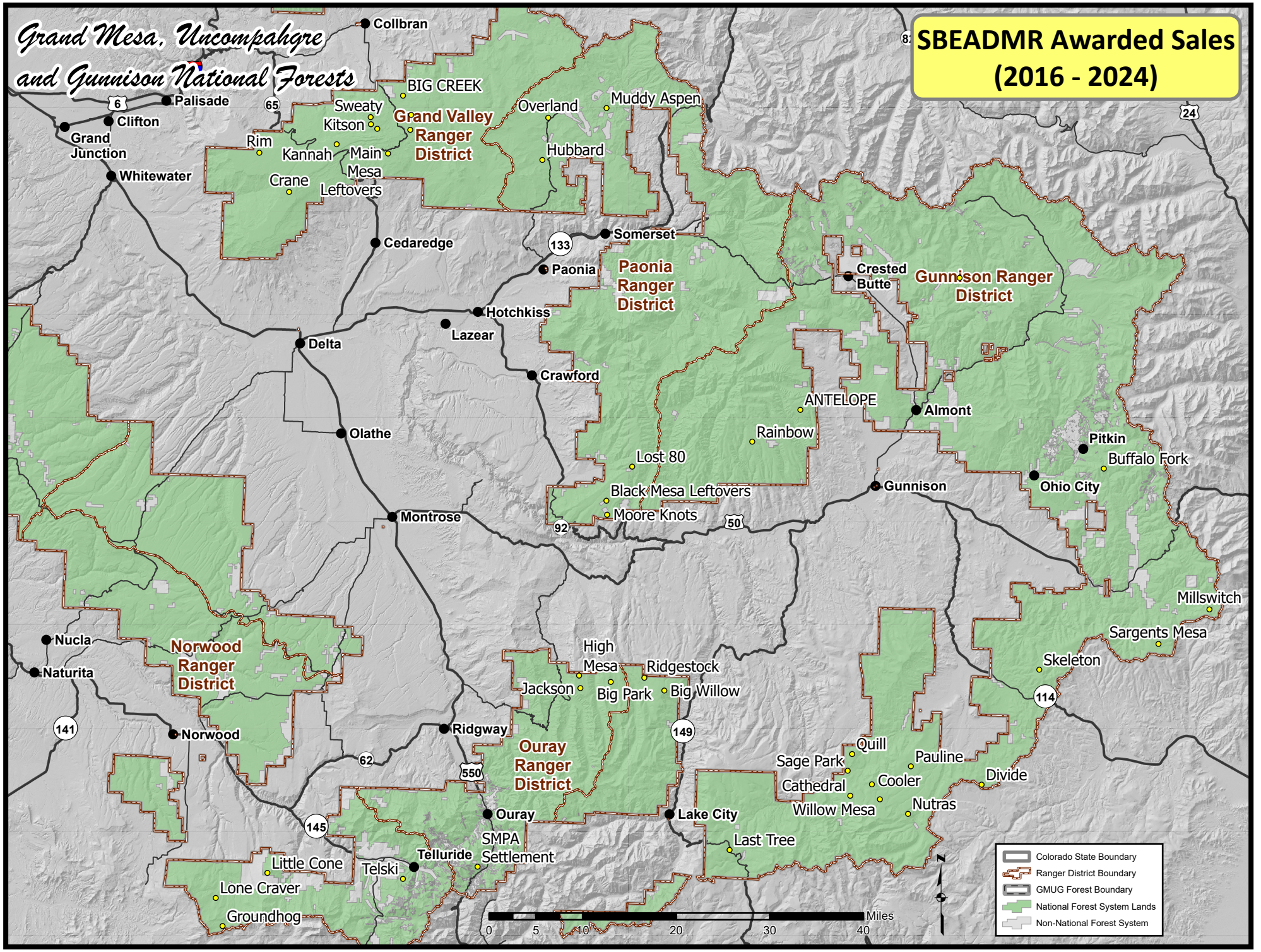
East Zone (Gunnison Ranger District) – Lauren Rupiper, lauren.rupiper@usda.gov
North Zone (Grand Valley and Paonia Ranger Districts) – Christie LaDue, christie.ladue@usda.gov
West Zone (Norwood and Ouray Ranger Districts) – Wes Bice, wesley.bice@usda.gov

SBEADMR websites

Overview, Current Meeting Information, and Archives:
https://cfri.colostate.edu/projects/sbeadmr/

GMUG SBEADMR Implementation (current FY only):
https://www.fs.usda.gov/detail/gmug/landmanagement/resourcemanagement/?cid=fseprd497061
Story Map and Online Comment Platform

SBEADMR Facilitator
Briget Eastep, beastep@western.edu


Grand Mesa, Uncompahgre and Gunnison National Forests
SBEADMR Awarded Sales (2016 - 2024)
Collbran
BIG CREEK
Palisade
Clifton
Grand Junction
Whitewater
Sweaty
Kitson
Rim
Kannah
Main
Mesa
Crane
Leftovers
Grand Valley Ranger District
Overland
Muddy Aspen
Hubbard
Cedaredge
Somerset
Paonia
Paonia Ranger District
Crested Butte
Gunnison Ranger District
Hotchkiss
Lazear
Delta
Crawford
Olathe
ANTELOPE
Almont
Rainbow
Pitkin
Buffalo Fork
Lost 80
Ohio City
Black Mesa Leftovers
Gunnison
Moore Knots
Montrose
Millswitch
Sargents Mesa
Nucla
Naturita
Norwood Ranger District
High Mesa
Ridgestock
Skeleton
Jackson
Big Park
Big Willow
Norwood
Ridgway
Quill
Pauline
Sage Park
Divide
Cathedral
Cooler
Ouray Ranger District
Willow Mesa
Nutras
Ouray
Lake City
SMPA Settlement
Last Tree
Telluride
Telski
Little Cone
Lone Craver
Groundhog
Colorado State Boundary
Ranger District Boundary
GMUG Forest Boundary
National Forest System Lands
Non-National Forest System
Miles
0 5 10 20 30 40