What are the specific effects of restoration treatments on the habitat of at-risk species and/or the habitat of species of collaborative concern across the CFLR project area?

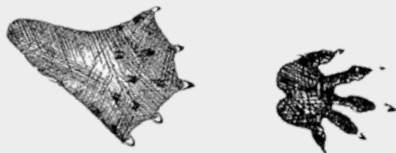| Intended monitoring:	Completed monitoring:
Summarize completed restoration activities.	Summarized accomplishments using Forest Service databases and 232 Partner interviews.
Convene 'specialist panel' to review restoration impacts on select wildlife habitat.	N/A - To begin on year 2 of data collection. Panel participants to be determined.
Implement forest plots to measure changes to habitat (stand structure): TPA, BA, % canopy cover, # snags, # dead top trees, and patchiness.	Installed 8 pre-treatment monitoring sites with 9 plots in each. Drone imagery was captured for 3 monitoring sites. Efforts underway to expand # of monitoring sites and use new techniques to measure stand structure via drone images.
Model habitat types across CFLRP using national and regional datasets.	N/A - Working to align national LANDFIRE data with SW specific vegetation maps for improved spatial and temporal accuracy.
Monitor riparian geomorphology and riparian vegetation utilizing photo points.	N/A - Riparian photo points have not been collated for CFLRP landscape.
Measure stream temperature and stream intermittency in relation to riparian treatments.	National database (NorWeST) has limited repeat, long-term data within CFLRP, and proximity of data loggers to treatments is unknown. Installed 4 temperature/intermittancy loggers and 2 game cameras measuring stream flow on one pilot stream reach.
-----	Mapped potential American beaver habitat within CFLRP using simplified Beaver Restoration Assessment Tool (BRAT).

Feb. 2024

2-3-2 Cohesive Strategy Partnership Multiparty Monitoring Update

for the Rio Chama Collaborative Forest Landscape Restoration Program

Species of collaborative concern:

Lewis' woodpecker
(Melanerpes lewis)

cutthroat trout
(Oncorhynchus clarkii pleuriticus; Oncorhynchus clarkii virginalis)

Wild bees

Abert's squirrel
(Sciurus aberti)

American beaver
(Castor canadensis)

Overview of results:

Reported Restoration Activities (10/01/22 – 09/30/23)	Forest Service	Non-Forest Service
Road Improvement	1 mi	-
Road Maintenance	88 mi	-
Terrestrial Wildlife Habitat Restoration	10,978 ac	250 ac
Stream Crossings Mitigated	-	-
Stream Habitat Enhanced	20 mi	1.4 mi
Water or Soil Resources Protected/Maintained/Improved	5,156 ac	-

Forest Service accomplishments gathered from COMPUTED, FACTS, ROADS, TIM, TRAILS, WIT and WORKPLAN (acronyms for various Forest Service databases) as reported by each National Forest.

Non-Forest Service accomplishments gathered via key informant interviews with individuals representing partner organizations working in the CFLRP.

Notes from the field:

Species of collaborative concern were determined in 2022 by the 2-3-2 Monitoring Committee and group of USFS Wildlife Biologists.

Reporting complexities led to some completed projects not being included in summary, and reported numbers do not necessarily represent beneficial effects for species of collaborative concern.

Many datasets (including vegetation maps, beaver habitat models, and riparian assessments) do not span the state line between NM and CO. Striking the balance between spatial consistency and best accuracy is an ongoing challenge.

Consider re-evaluation of species of collaborative concern and their habitat descriptions:
- Lewis' woodpecker and Abert's squirrel occupy similar habitats.
- The technical reports used to define Lewis' woodpecker and Abert's squirrel habitat are 15+ years old and drawn from lands adjacent to, but not within, CFLRP.
- Potential to select wildlife species that rely on different successional stages to monitor the trade-offs occurring? (i.e., open vs. closed stands)
- What wildlife monitoring efforts are already underway and can be built upon within CFLRP?
- Who are the wildlife monitoring "champions" within the 2-3-2 to help lead efforts?

Habitat Description	Monitoring Metric	Target Range	2023 Measure
American beaver: Riparian and wetland habitat with <20% slope and within 100m of deciduous vegetation	Miles of potential habitat	TBD – how to determine?	1,569 miles
Cutthroat trout: Small to moderately large, cold, clear, well-oxygenated streams	Maximum annual stream temperature	<77°F	TBD
Abert's squirrel: Mature ponderosa pine patches with abundant foraging (cone crops and above ground fungi) and interlocking crowns.	Acres of mature ponderosa pine	TBD – how to determine?	TBD – informed by R3 Analysis Framework Seral State modeling
	Average clump size	0.2-1.2 acres	TBD – informed by expanded drone imagery
	Average # of clumps	>9 per acre	
	Trees per acre	>8 TPA w/ 18-24" DBH >50 TPA w/ 12-18" DBH	18 TPA (*data from* 31 TPA *forest plots*)
Lewis' woodpecker: Ponderosa pine forest with diverse stand structure and age classes, and areas with mature cottonwoods.	Acres in each ponderosa age class	TBD – how to determine?	TBD – informed by R3 Analysis Framework Seral State modeling
	Snag density	TBD – how to determine?	3 snags/acre (*data from forest plots*)
	TPA with decay features	TBD – how to determine?	TBD – not measured in 2023
	Mature oak density	TBD – how to determine?	18 TPA (*data from forest plots*)
	Acres of mature cottonwood	TBD – how to determine?	TBD – informed by R3 Analysis Framework Seral State modeling
Wild bees: Focused on populations, habitat not defined.	-	-	-

Notes about habitat monitoring table:

- Potential beaver habitat modeled throughout CFLRP as perennial streams (USGS National Hydrography Dataset) with <20% slope (USGS Digital Elevation Model) and within 100m of deciduous vegetation (US EPA National Aquatic Resource Surveys and Natural Heritage NM Riparian Habitat Map).
- Maximum annual stream temperature based upon Zeigler et al. 2013 paper titled *Upper thermal tolerances of Rio Grande cutthroat trout under constant and fluctuating temperatures.*
- Abert's squirrel requirements based upon Speas and Holland 2005 technical report titled *Abert's Squirrel (Sciurus aberti) Species Assessment* - Prepared for the Grand Mesa, Uncompahgre, and Gunnison National Forest.
- Lewis' woodpecker requirements informed by Abele at el. 2004 technical report titled *Lewis's Woodpecker (Melanerpes lewis): a technical conservation assessment.*
- R3 Analysis Framework is a vegetation model developed by US Forest Service Region 3. Due to the differences in available data between Forest Service regions, efforts to align vegetation data for the model run are ongoing.
- Drone monitoring will be expanded in 2024, to include Structure from Motion image analysis (i.e., drone images can be analyzed to determine individual tree measurements and calculate patch sizes).

Table summarizes adaptive management (AM) watch-outs as defined in Edition 1 of the 232 Partnership Multiparty Monitoring plan. AM watch-outs were determined by the 232 Partnership at the February 2023 meeting in Taos, NM. Yellow boxes indicate the watch-out was met, or not measured, and should be considered for collaborative discussion.

AM Watch-out	Commentary
Less than 75% of planned projects achieved each year.	In FY23, all wildlife habitat targets 75%
Treatments do not appear to be benefitting selected species.	Baseline data only - no comparative data
Monitoring methodologies are misaligned with treatment types.	To be determined by annual review
Structural stage distributions move away from desired conditions.	Baseline data only - no comparative data
Conclusions oversimplify or generalize diverse landscape.	To be determined by annual review
Trends in landscape fragmentation moving away from desired conditions.	Landscape fragmentation not measured
New Threatened and Endangered species listing within the Rio Chama CFLR footprint.	No new T and E species listed in 2-3-2 landscape.
Stream temperature loggers indicate: • different story than state water data • increase in maximum seasonal stream temperatues • earlier peak temperature • increased days of intermittency	Baseline data only - no comparative data. Planning for expanded # of monitoring sites.
Repeat photos show: • significant change in geomorphology • increased presence of woody invasive species • absence of beaver activity • presence of livestock activity • OR taken at different points of hydrograph	No photo point standardization across CFLRP. Individual orgs/practitioners implement repeat photos with varying frequency and focus.

Monitoring Committee Recommendations and Takeaways
See recommendations on the "What are the specific effects of restoration treatments on populations of species of collaborative concern across the CFLR project area?" leaflet.

RIO CHAMA
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FOREST SERVICE U.S. DEPARTMENT OF AGRICULTURE

Forest Stewards Guild

Mountain Studies Institute
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