Overview Map

Yellow Jacket / Flodine Park:
Section 106 Programmatic Agreement

Introduction

1. Introductions: BLM Staff

2. History of the allotments

3. History of NEPA and permits

4. Current Permit Status of the Allotment

5. NEPA (Land Health)/NHPA Processes

6. NHPA: "Protection of Historic Properties" (36 CFR 800)
   a. Identify Cultural Resources
   b. Assess the Effects from Undertakings
   c. Resolve the Effects
   d. Allows for Alternative Processes (Programmatic Agreement)

7. Participants: Signatories, Invited Signatories, Tribal Nations, Concurring Parties
8. PA Steps: Inventory, Evaluation, Resolution
9. Timeline

Schedule

Dates	Task
Dec 17, 2020: COMPLETE	Kickoff Zoom for Programmatic Agreement (PA): ▪ Discuss scope and review process/schedule ▪ Discuss what order to work on sections ▪ Discuss current model and process for confirming the model (solicit members for technical working group?)
Dec 22, 2021-May 31, 2021 (22 Weeks): COMPLETE	<u>PA Version #1</u> (BLM Draft). <u>Participants:</u> Signatories Only ▪ Review standard language, Preamble, Sensitive Info, Curation, Professional Qualification, Other Federal Law, Emergency Actions, Admin Provisions ▪ Draft 1c to signatories for finalization
May 31, 2021 – August 18, 2023 (115 Weeks): COMPLETE	<u>PA Version #2.</u> <u>Participants:</u> Signatories, Invited Signatories ▪ <u>Grazing and Cultural Resources Field Visit(s):</u> April-June 2022 (w/Concurring Parties) ▪ Livestock use and alternatives refinement ▪ GIS Modelling Tool development (BLM/SHPO) ▪ Identification of Historic Properties ▪ Concurring Party Review and Comments
August 18 – January 26, 2024 (23 Weeks):	<u>PA Version #3.</u> <u>Participants:</u> Signatories, Invited Signatories ▪ Historic Properties Management Plan ▪ Evaluating Historic Properties, ▪ Assessment of Effects ▪ Resolution of Adverse Effects ▪ Monitoring and Reporting ▪ Post-Review Discoveries ▪ Professional Qualifications and Standards ▪ <u>Cultural Resources Field Visit(s):</u> State Range Meeting (10/24/2023)
January 26, 2024-March 8, 2024 (6 Weeks)	<u>PA Version #4.</u> <u>Participants:</u> Signatories, Invited Signatories, and Concurring Parties ▪ Review of complete Draft PA ▪ <u>Virtual or In Person Presentation</u> ▪ <u>Virtual or In Person Meeting</u>
March 11-15, 2024	<u>Sign PA.</u> <u>Participants:</u> Signatories, Invited Signatories, and Concurring Parties

Reasonable and Good Faith Effort

REASONABLE

- Logically designed
- Not excessive or inadequate
- Varying for different types of effects

GOOD FAITH

- Fully implemented
- Appropriate to the nature and scale of the undertaking

36 CFR § 800.4(b)(1)

Identification Effort

May include:

- Background research
- Consultation
- Oral history interviews
- Sample field investigation
- Field survey
- Results of past studies or previous evaluations*

Revaluated as appropriate to consider passage of time, changing perceptions of significance, or incomplete prior evaluations

36 CFR § 800.4(b)(1)

800.13 Post-review discoveries

- A RGFE does not require 100% identification!
- Designed to address situations where:
  - New historic properties are discovered
  - Unanticipated effects on known historic properties are found
- Can follow terms of existing PA, other Section 106 agreement, or generic process under regulations
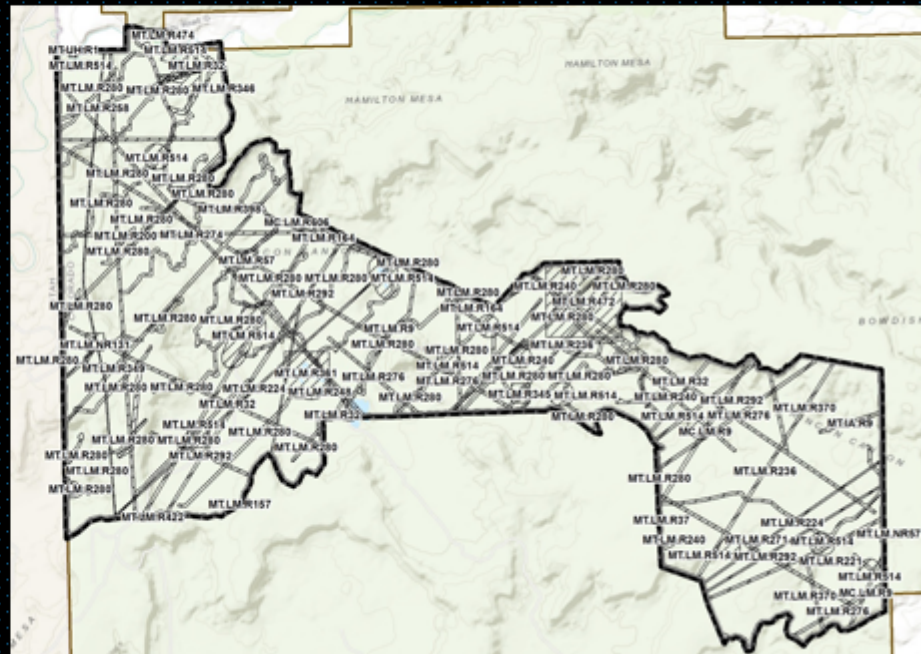
REVIEW: Location Modeling and Sensitivity Assessment

Yellow Jacket: Archaeological CONTEXT

The literature review of previous inventory projects found:

- 3,046 acres covering 35.2 percent of the allotment (8,664 acres) have been intensively inventoried (Class III).

- Sample size for the population is robust, with a Relative Standard Error (95% confidence level) of ±1.46%.

- 146 cultural sites have been previously recorded in the allotment (31 / sq. mile surveyed).

- 111 cultural sites were assessed for their eligibility for listing on the National Register of Historic Places. Of these, 73 percent (n=81) were considered eligible and 27 percent (n=31) were not. The remaining 35 resources have not been assessed for their NRHP eligibility (e.g. "needs data").

- The sites recorded were associated with Paleoindian, Archaic, Ancestral Puebloan, Ute, Navajo and Euro-American occupations.

- No traditional cultural properties or sacred sites have been identified, though numerous Puebloan habitation sites with the likelihood of containing human burials and associated funerary objects of significance to modern tribal groups are present in abundance.

IDENTIFICATION: Nature and Location of Historic Properties

Brief Review: Historic Property Location Modeling and Sensitivity Assessment

REVIEW: Location Modeling and Sensitivity Assessment

Flodine Park: Archaeological CONTEXT

- 38 intensive pedestrian archaeological surveys have been conducted within the allotment, covering 23.6 percent (1,447 acres) of the total area (6,128 acres).

- Sample size for the population is robust, with a Relative Standard Error (95% confidence level) of ±2.3%.

- 120 cultural sites have been recorded in the allotment (53.1 per square mile)

- 66 of these resources are assessed for their eligibility for listing on the National Register of Historic Places. Of these, 73 percent (n=48) were considered eligible and 27 percent (n=18) were not eligible. The other 54 resources are listed as either "needs data" or no assessment was given on the site forms.

- Sites recorded within the allotment are associated with Paleoindian, Archaic, Ancestral Puebloan, Ute, Navajo and Euro-American occupations.

- No traditional cultural properties or sacred sites have been identified, though Puebloan habitation sites with the likelihood of containing human burials and associated funerary objects of significance to modern tribal groups are present in abundance.

REVIEW: Location Modeling and Sensitivity Assessment

Table 3. Frequency of Historic Properties within Colorado and the APE.

Location	Acres Inventoried	Cultural Sites Located	% of Resources assessed as Eligible for the NRHP	Frequency (Acres per Historic Property)	Density (# of Historic Properties per Square Mile)
Colorado	297,013	8,197	14%	264.7	2
Yellow Jacket Allotment	3,046	146	73%	28.6	22
Flodine Park Allotment	1,447	120	74%	16.5	39

Table 5. Sensitive Historic Property types and livestock impacts in the Yellow Jacket Allotment.

Standing Architecture	Livestock Impacts (%)	Rock Art	Livestock Impacts (%)	Rock Shelter	Livestock Impacts (%)
35	15 (43%)	11	3 (27%)	35	14 (40%)

Table 15. Sensitive Historic Property types and livestock impacts in the Flodine Park Allotment.

Standing Architecture	Livestock Impacts (%)	Rock Art	Livestock Impacts (%)	Rock Shelter	Livestock Impacts (%)
11	8 (62%)	5	4 (80%)	10	8 (80%)

REVIEW: Location Modeling and Sensitivity Assessment

REVIEW: Location Modeling and Sensitivity Assessment

In order to determine the presence and distribution of sensitive historic properties within the allotments, the association of sensitive historic properties with **vegetation, soils, geology and aspect** were each statistically analyzed using GIS layers from Colorado BLM State Reference Data
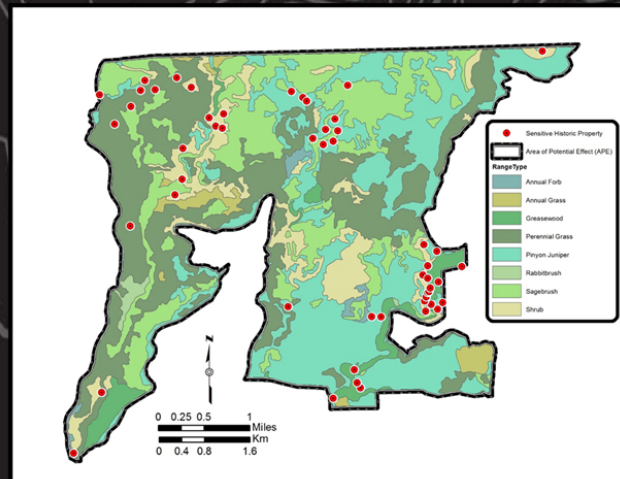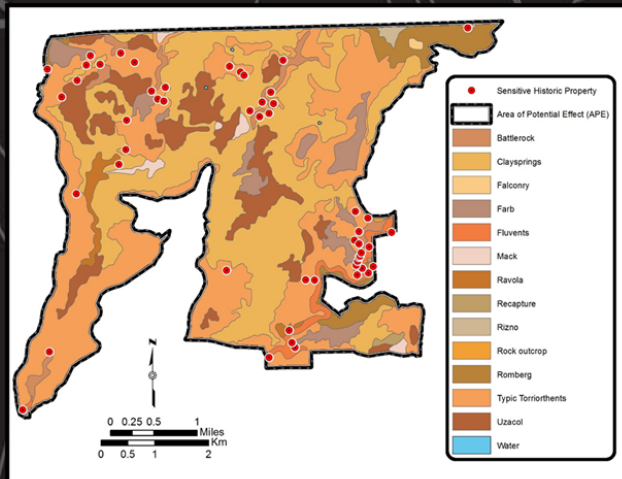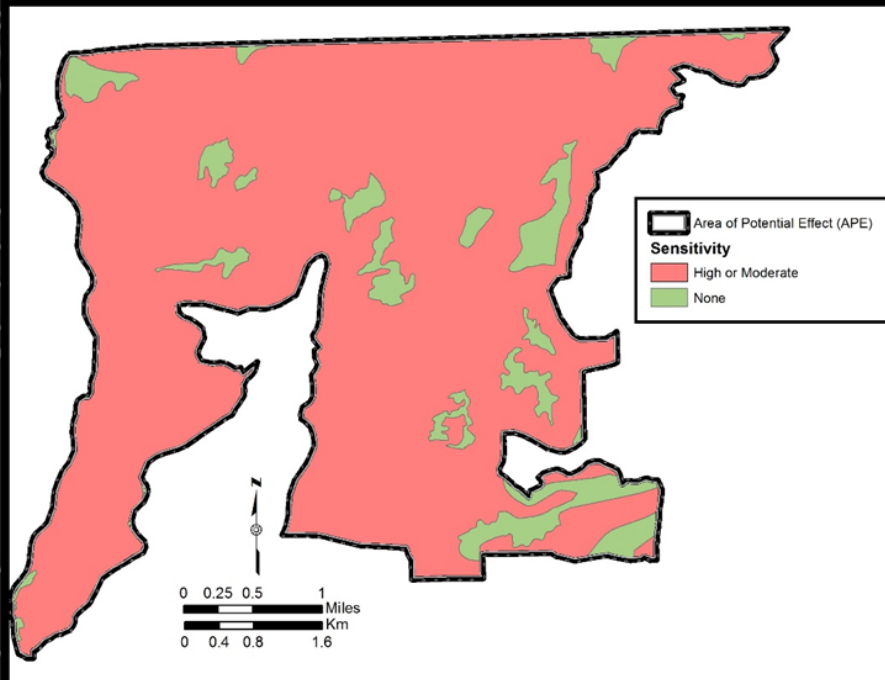
Table 6. Sensitive Historic Properties and directional aspect in the Yellow Jacket Allotment.

Directional Aspect	Proportion of Allotment (Acres and %)	# of Surveyed acres by Aspect	Relative Standard Error of Survey Sample (95% confidence level)	Expected Frequency	Observed Frequency of Sensitive HPs in Aspect	Observed% of Sensitive HPs By Aspect	# of surveyed acres per sensitive HP	
North	691.04 (8%)	217	±5.64%	4.16	3	5.8%	72.3	
Northeast	500.17 (5.8%)	180.5	±5.97%	3.01	3	5.8%	60.2	
East	961 (11.1%)	315.3	±4.63%	5.77	10	19.2%	31.5	Chi Square = 6.67
Southeast	1294.29 (14.9%)	436.7	±3.9%	7.75	8	15.4%	54.6	
South	1373.91 (15.9%)	531.6	±3.4%	8.27	11	21.2%	48.3	Significance Level = 0.46
Southwest	1288.39 (14.9%)	501.3	±3.5%	7.75	7	13.5%	71.6	
West	1353.98 (15.6%)	499	±3.56%	8.11	4	7.7%	124.75	
Northwest	1186.85 (13.7%)	363.3	±4.38%	7.12	6	11.5%	60.55	
Flat	0.05 (0.0%)	0.1	N/A	0.00	0	0	x	
	100.0%				52		Median = 1 sensitive site per 60.4 surveyed acres	52

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REVIEW: Location Modeling and Sensitivity Assessment

Sensitive Historic Property Analysis


Environmental zones lacking sensitive historic properties (green; 9%) within the Yellow Jacket Allotment.
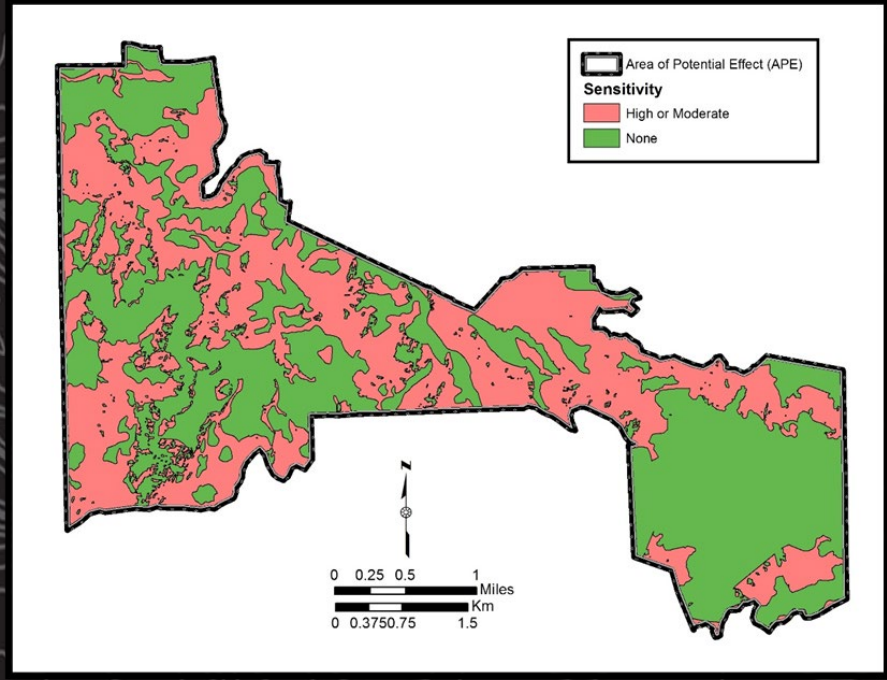
Environmental zones lacking sensitive historic properties (green; 52%) within the Flodine Park.

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REFINEMENT: Location Modeling

Initial Frequency Model Refined using Results of Previous Inventory and State-wide Frequency Analysis. Three Sensitivity Categories (High, Medium, None) Identified
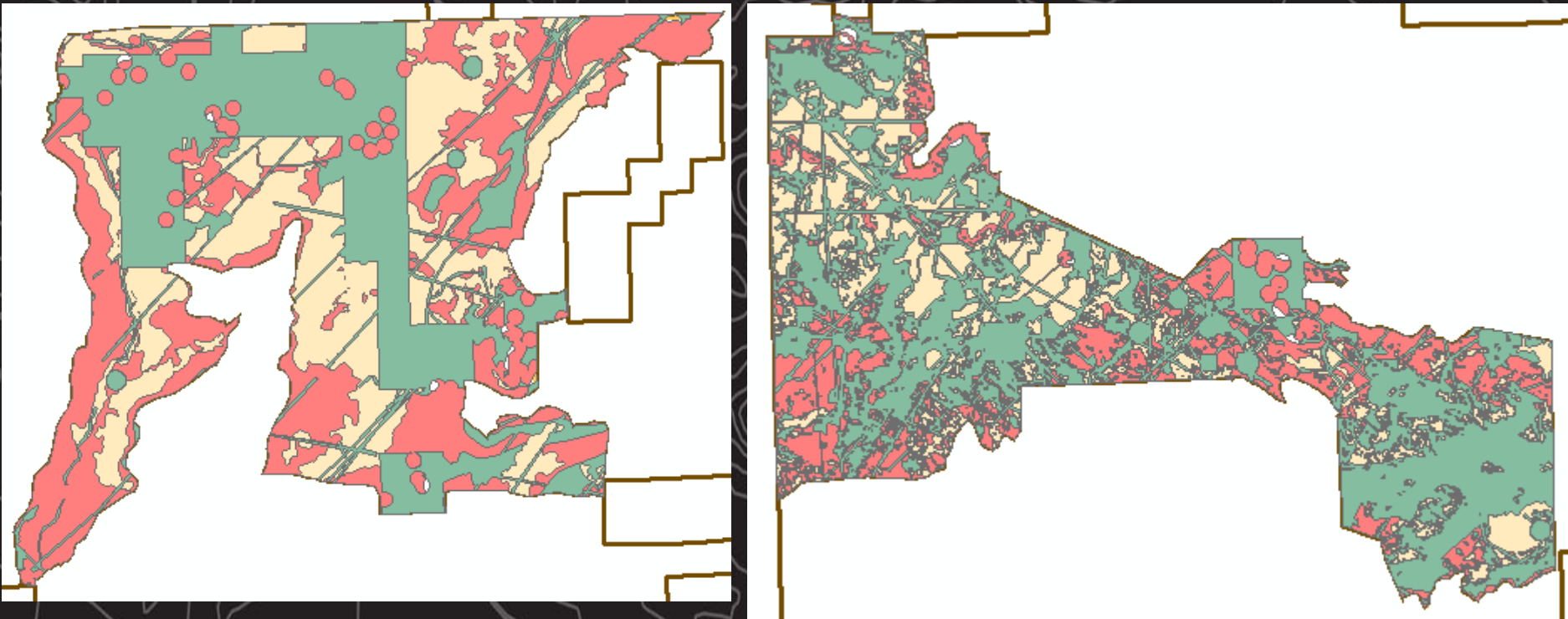
None (Green; no sensitive historic properties)

Medium (Yellow; 1 sensitive HP / >198.5<330.8 acres)

High (Red; 1 sensitive HP / <198.5 acres)

Refinement of the Proposed Federal Undertaking

- Magnitude and nature of the undertaking

- Nature and extent of potential effects on historic properties

Conceptual Use Pattern Mapping

Utilization patterns (use zones) may result from a number of factors that either alone or in combination cause foraging animals to concentrate in specific areas or to spread out over larger areas." BLM Tech Ref 1734-3

Conceptual Use Pattern Mapping

1. **Identify Known Livestock Concentration Areas**
   - Stock Ponds and Reservoirs
   - Other water sources McElmo Creek and Yellow Jacket Creek
   - Remove Reservoirs that have never functioned or likely never functioned
   - Remove Reservoirs that conflict with Sensitive Historic Properties
2. **Identify "Non-Capable" Areas**
   - Areas of 60% Slope or greater (Holechek et.al)
   - Areas that due to natural barriers (Cliffs) or Man-made barriers are inaccessible to cattle
   - More Strict than the RMP (better GIS data)
3. **Buffer Concentration Areas**
   - Based on use levels as distance from water increases (Holechek et.al)
4. **Combine the Data: Concentration areas and Non-Capable areas**
   - GIS exercise
5. **Assign Projected Use levels**
   - Based on maximum use levels from CANM RMP
6. **Test the Concept- Applied Use Pattern Mapping**
   - Adjacent allotments with similar stocking levels and season of use

Conceptual Use Pattern Mapping
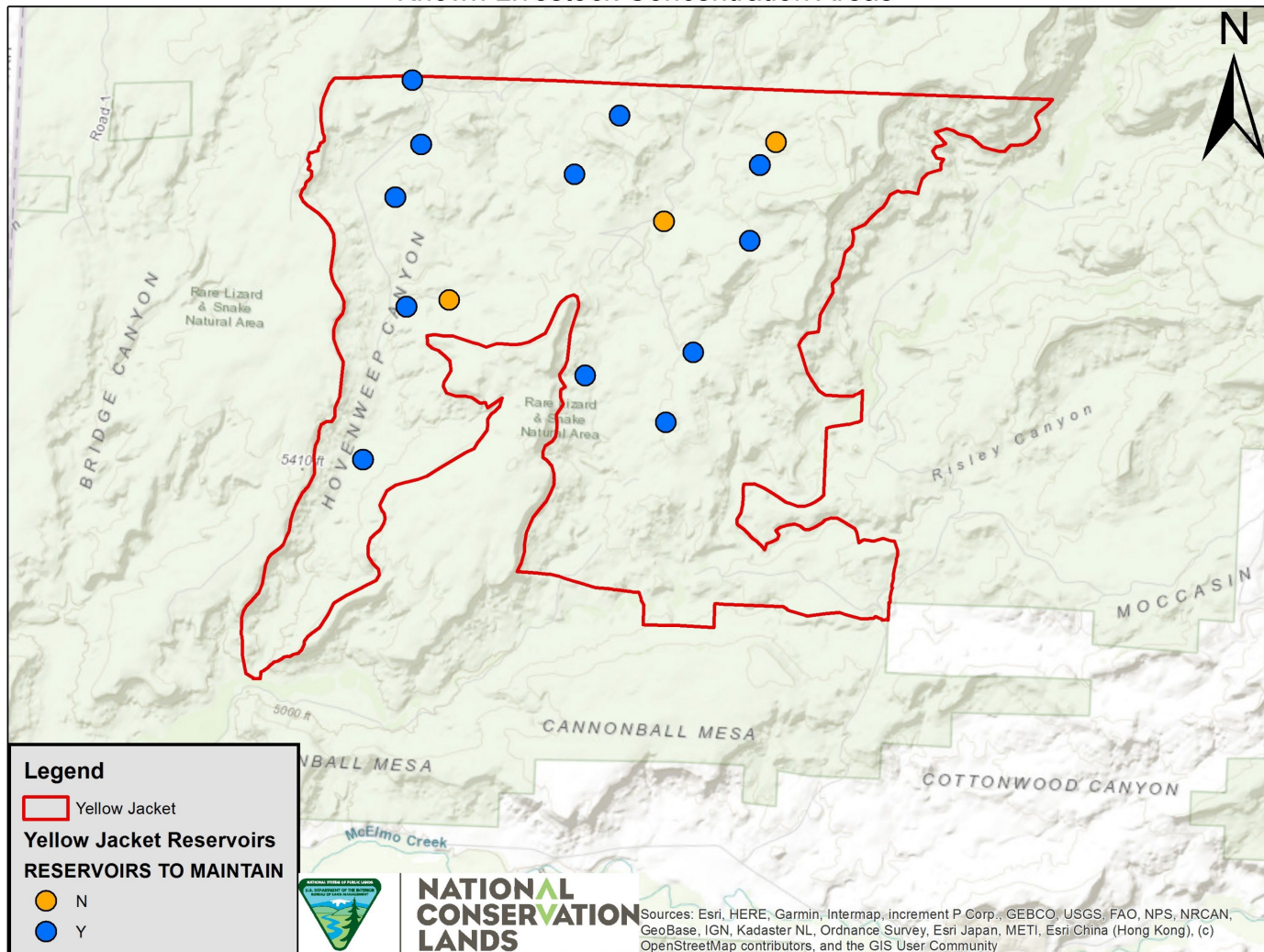# 1. Known Livestock Concentration Areas

Flodine Park
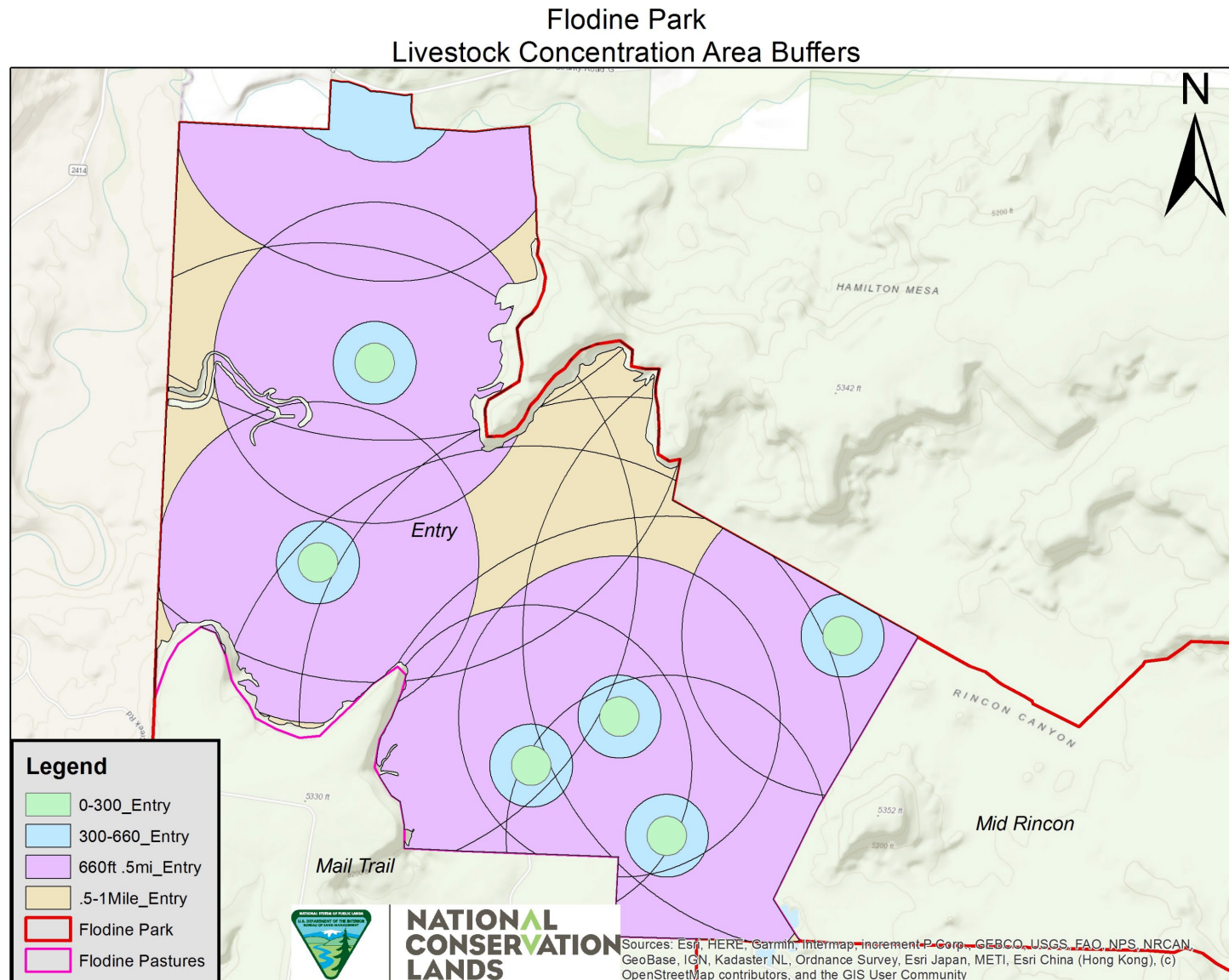Known Livestock Concentration Areas

Conceptual Use Pattern Mapping
1. Known Livestock Concentration Areas
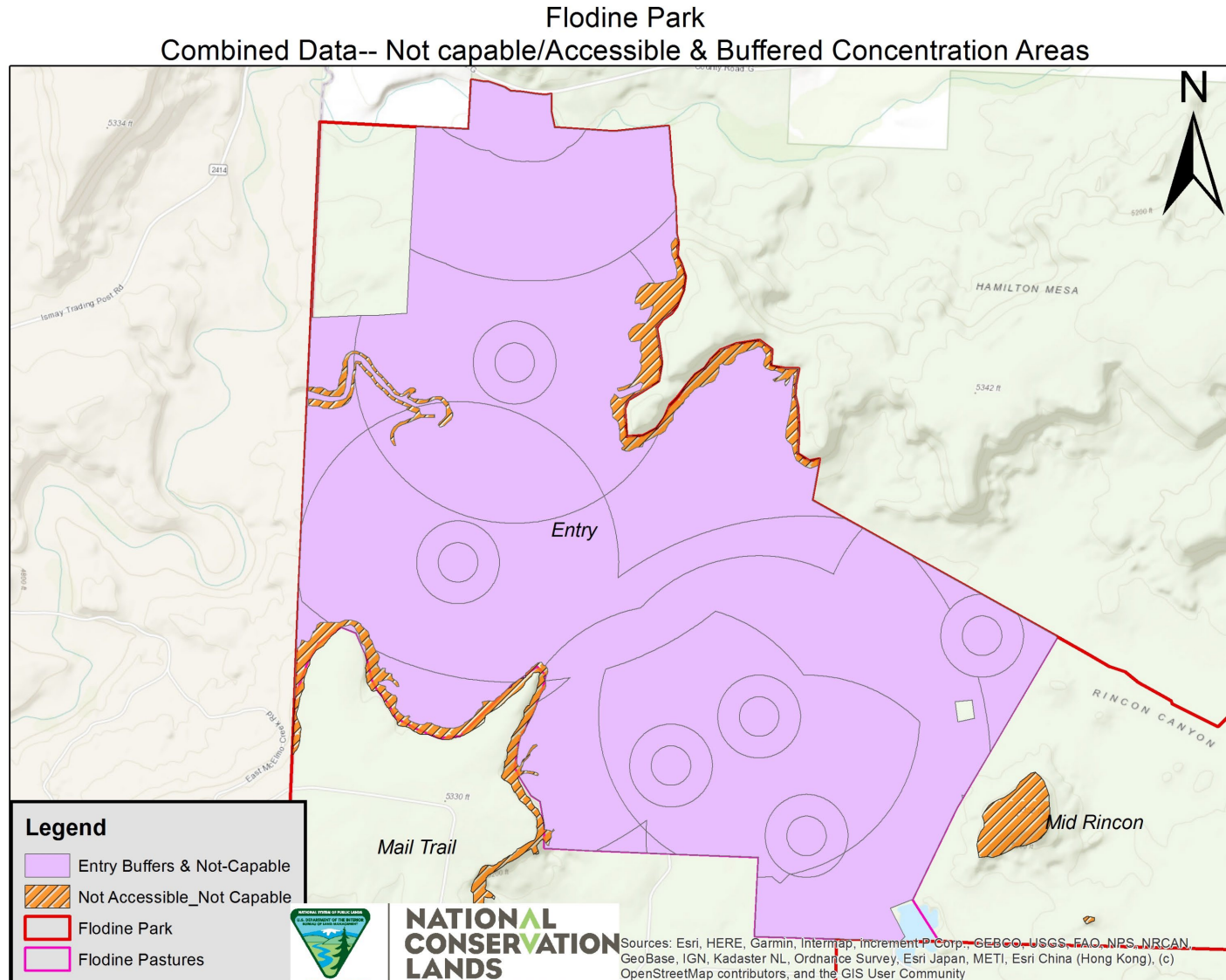

Yellow Jacket
Known Livestock Concentration Areas

Legend

Yellow Jacket

Yellow Jacket Reservoirs
RESERVOIRS TO MAINTAIN
- N
- Y

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

5/2022

Flodine Park
Livestock Concentration Area Buffers

Flodine Park
Combined Data-- Not capable/Accessible & Buffered Concentration Areas

Legend

- Entry Buffers & Not-Capable
- Not Accessible_Not Capable
- Flodine Park
- Flodine Pastures

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

5/2022

Flodine Park
Predicted Use Levels

Yellow Jacket
Predicted Use Levels

Use Pattern Mapping
6. Test the Concept

Conceptual Use Pattern Mapping to
Applied Use Pattern Mapping

1. Adjacent Allotments
    a. Similar Stocking Rates
    b. Same Season of use

2. Measure Utilization
    a. Calibration Transects (Take Measurements)
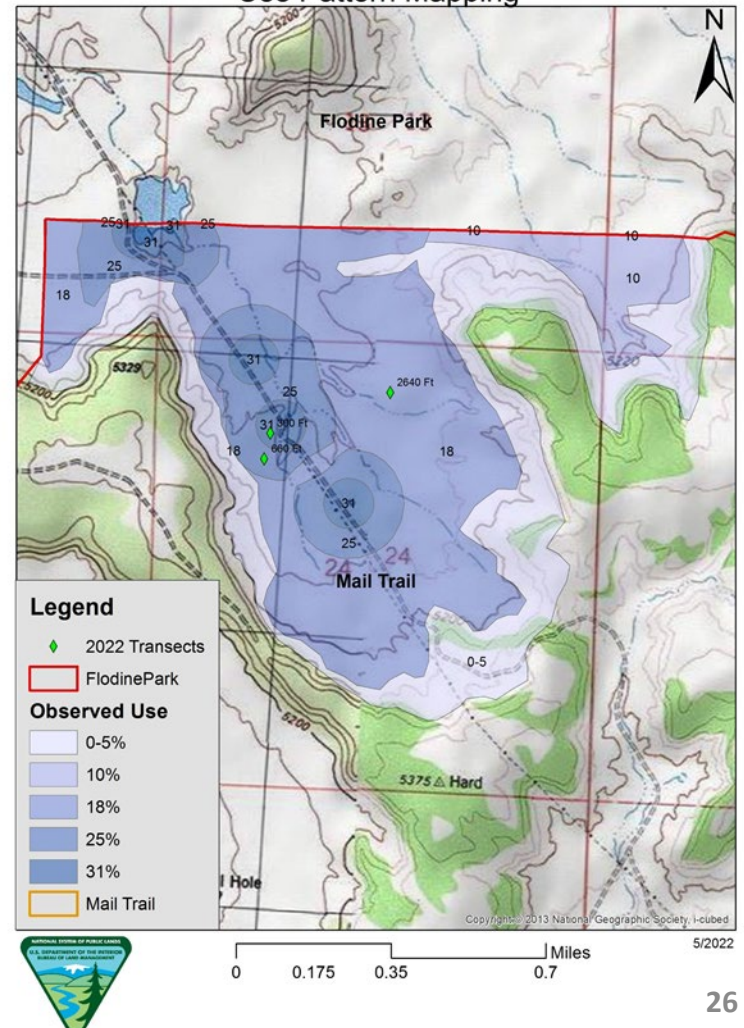   b. Transverse the Pasture

3. Map the results

Mail Trail Mesa 65 Head   December 27 – March 2

Mail Trail Mesa- Rincon
Use Pattern Mapping
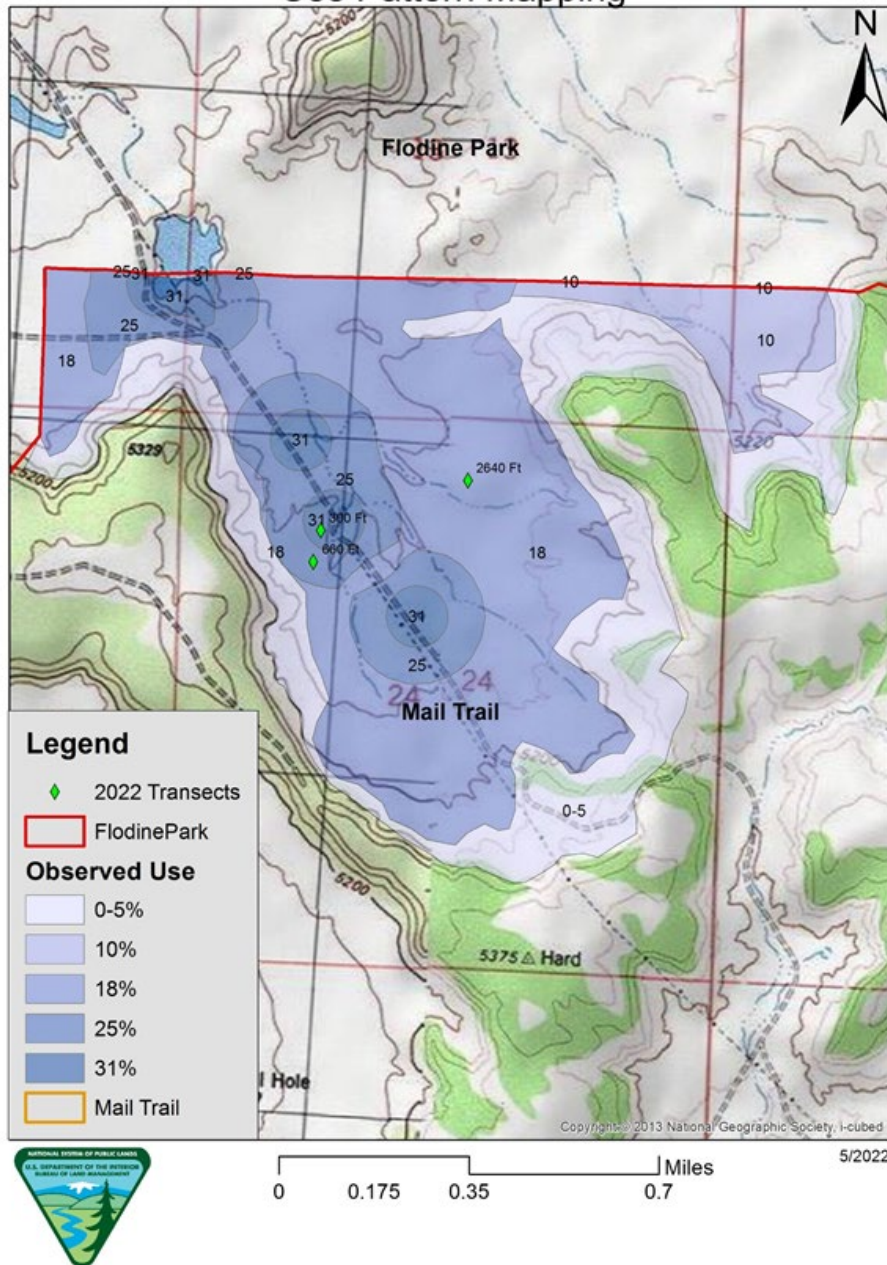
Use Pattern Mapping
6. Test the Results

- Mail Trail Mesa

- 65 Head

- December 27 – March 2

Conceptual Use Pattern Mapping

Assumptions and Limitations

1. Conceptual process will need monitoring and field verification of actual use.
2. Other "concentration areas" incl. Fences, shade seeking areas and sun seeking areas cannot be known until cattle on the allotments.
3. Stocking rates would be similar to adjacent allotments (where use has been measured or mapped)
4. Livestock use preferences based on vegetation or other factors for these allotments are based on professional knowledge.
5. Moving cattle between pastures would occur on existing roads or trails.
6. How might livestock management change these predictions? (Cattle + Human factor)

Conceptual Use Pattern Mapping

Assumptions and Limitations (cont.)

7. Breaking the rules of livestock utilization measurements. Rule: do not take use measurements near manmade watering locations that do not represent overall use.

8. Unknown Livestock behavior as they learn how to use the allotments.

7. Model overestimates use; which overestimates the potential risks and gives the benefit of the doubt to the resource(s).

IDENTIFICATION: Proposed Additional Inventory Methodology

REASONABLE

- Logically designed
- Not excessive or inadequate
- Varying for different types of effects

GOOD FAITH

- Fully implemented
- Appropriate to the nature and scale of the undertaking

36 CFR § 800.4(b)(1)

Guiding principle behind our effort was Risk Management:

-**Recognize that the BLM's mission of Multiple Use, Sustained yield is about balancing competing interests and managing risks to multiple resources**

-Recognize that additional information on livestock behavior and Sensitive Historic Property location is needed to better *ANTICIPATE, MINIMIZE, AND MANAGE RISK while still allowing for uses permitted under the Presidential Proclamation*

Proposed Inventory Methodology for the *Additional* Identification of Historic Properties

IDENTIFICATION: Proposed Additional Inventory Methodology
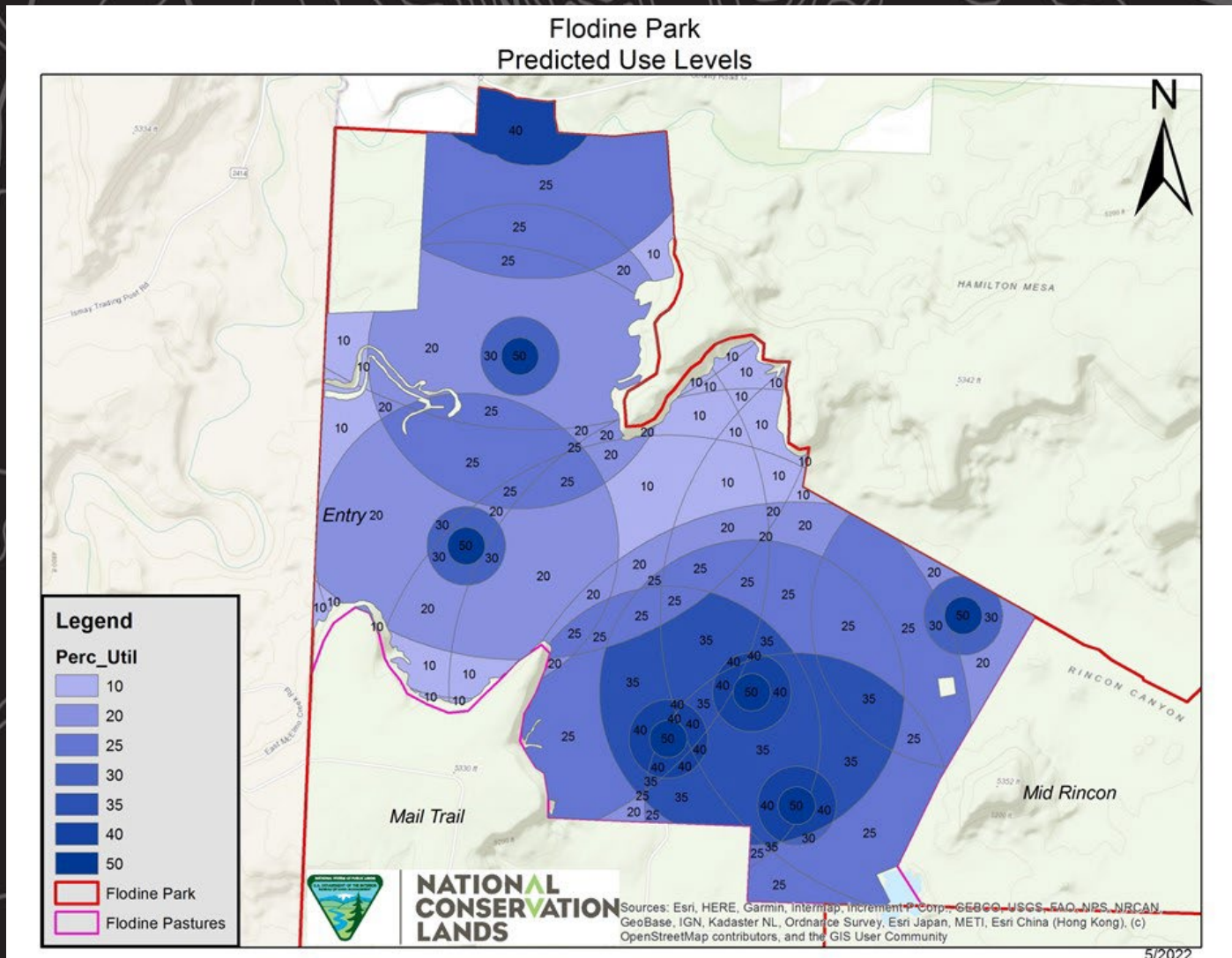
Inventory Framework:

Intensity of survey and monitoring should be determined by a combination of cultural sensitivity and probable livestock utilization.
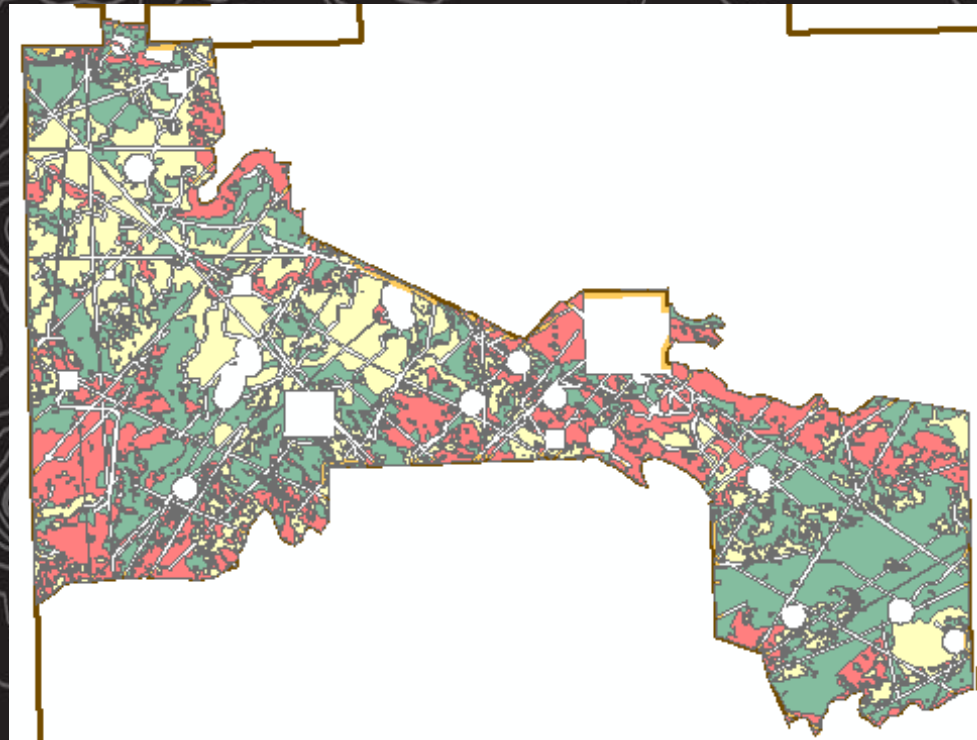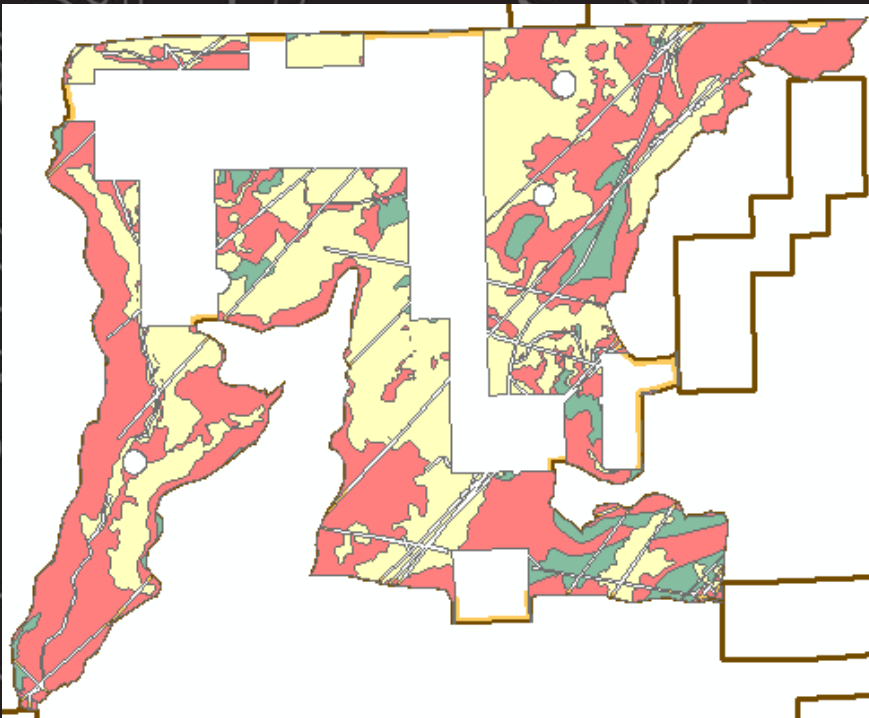
For example:

Percent Utilization (%)	Cultural Sensitivity
10	
20	None (Green; no sensitive historic properties)
25	
30	Medium (1 sensitive HP / >198.5<330.8 acres)
35	
40	High (1 sensitive HP / <198.5 acres)
50	

IDENTIFICATION: Proposed Additional Inventory Methodology

Three Sensitivity Categories (High, Medium, None) Identified
Previously Surveyed Areas Removed

None (Green; no sensitive historic properties)

Medium (Yellow; 1 sensitive HP / >198.5<330.8 acres)

High (Red; 1 sensitive HP / <198.5 acres)

IDENTIFICATION: Proposed Additional Inventory Methodology

Recommended Survey Sampling Levels
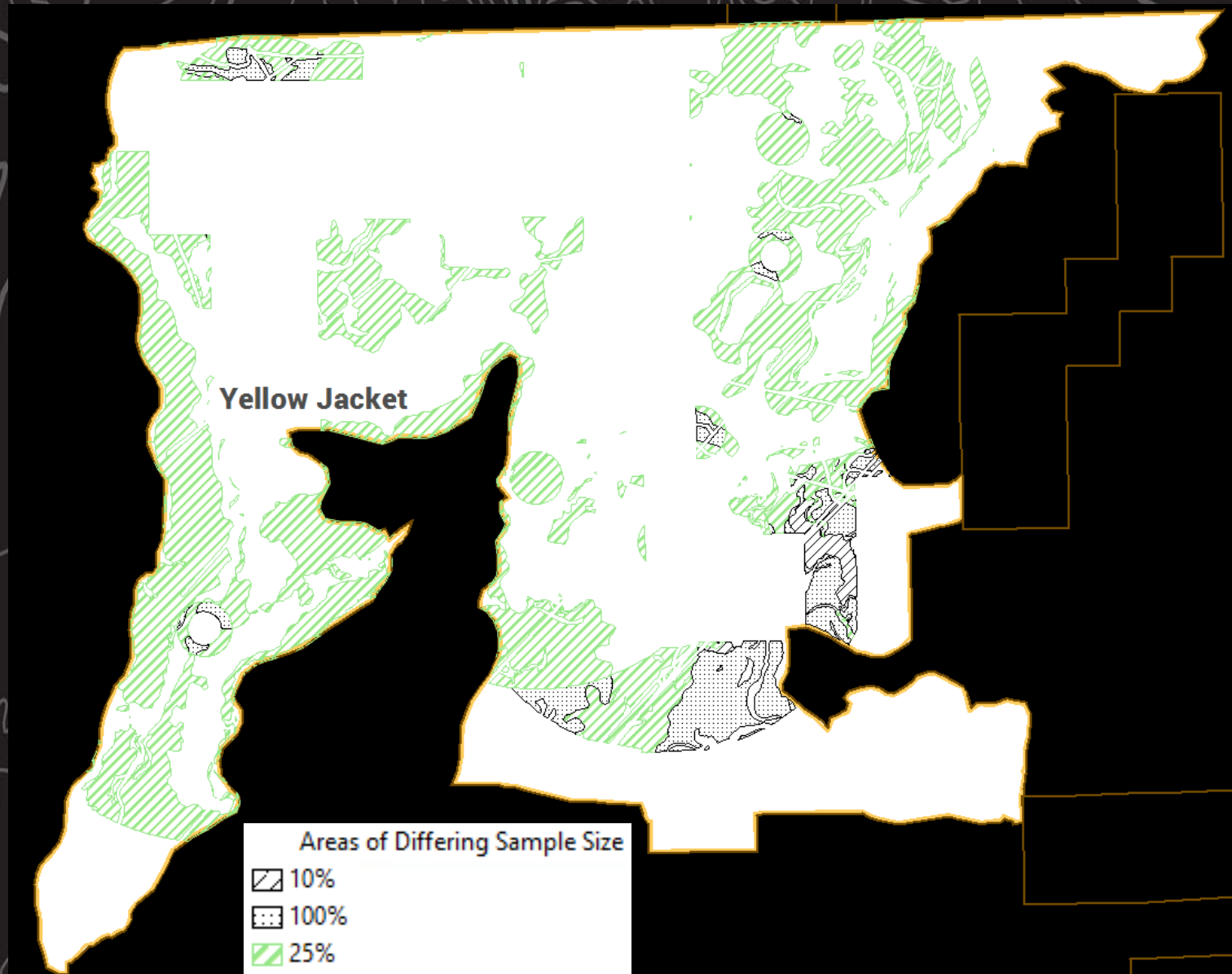
<u>Cultural Sensitivity</u>

High = 100% Survey if ≥30% utilization

      = 25% sample if ≤ 29% utilization
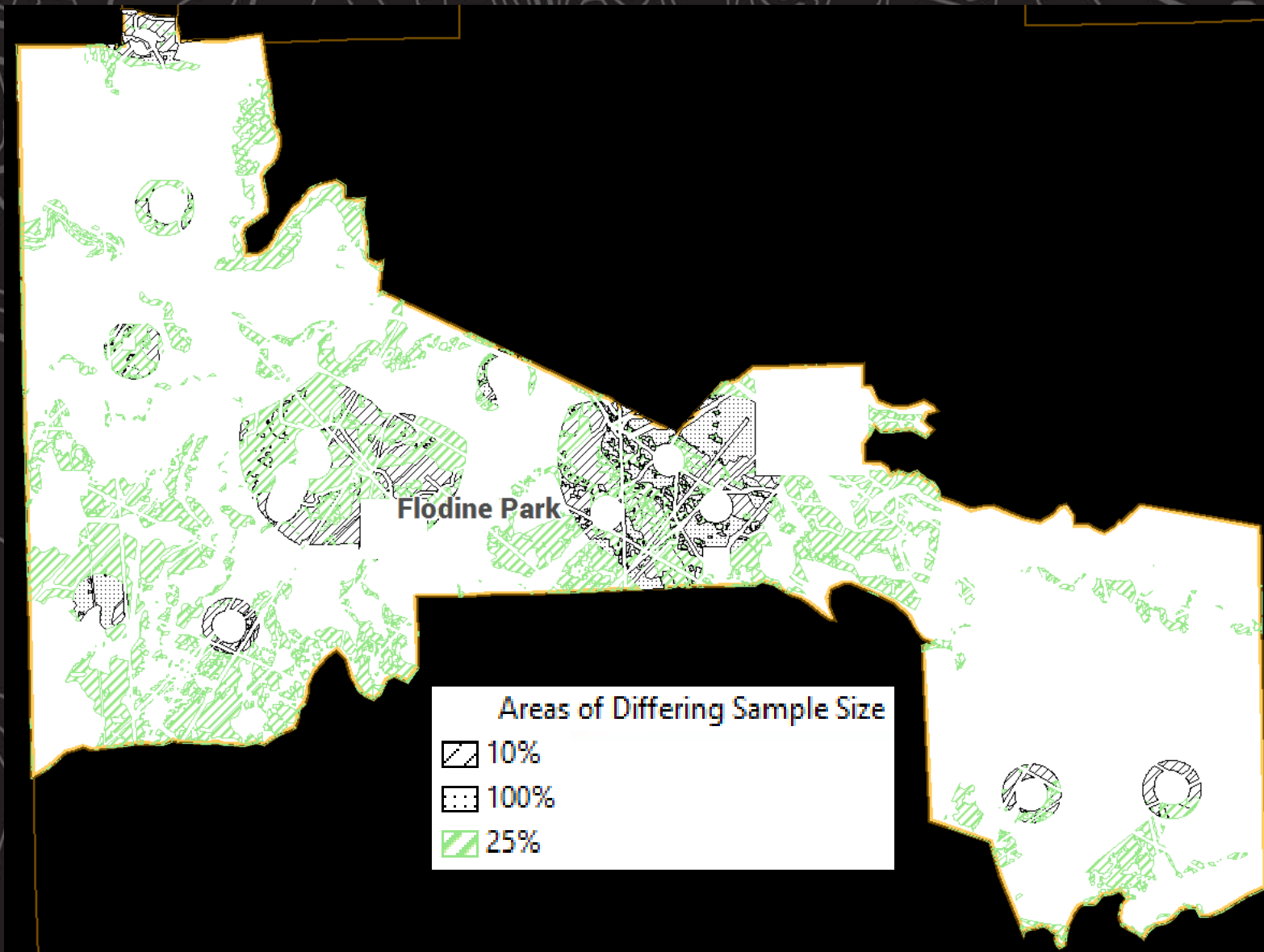
Medium = 25% sample if ≥30% utilization

None − 10% sample if ≥30% utilization (Control)

Yellow Jacket

Areas of Differing Sample Size
- 10%
- 100%
- 25%

Flodine Park

Areas of Differing Sample Size
- 10%
- 100%
- 25%

IDENTIFICATION: Proposed Additional Inventory Methodology

Pasture	Allotment	Total Acres	Total Acres of Green Area over 30% Utilization to be Surveyed (10% Sample)	Total Acres of Yellow Area over 30% Utilization to be Surveyed (25% Sample)	Total Acres of Red Area Under 30% Utilization to be Surveyed (25% Sample)	Total Acres of Red Area over 30% Utilization to be Surveyed (100% Sample)	Total Acres Proposed to be surveyed	% Proposed for Survey
The Rest	YJ	7271	4.65	59.4	256.9	247.1	568.05	7.8%
Lower Hovenweep	YJ	1153	0	2.8	120	10.2	133	11.5%
Entry	FP	2376	14.5	43.9	36.5	10.9	105.8	4.5%
Rincon	FP	1229	10.5	21.3	45.1	115.9	192.8	15.7%
Mail Trail	FP	1062	1.4	0	73.6	24	99	9.3%
Horn Toad	FP	1492	3	2.7	18.4	0.4	24.5	1.6%
Totals		14582					1123.15	7.7%

Note that this Targeted Inventory would be *in addition* to the 24% of the Flodine Park allotment (1,447 acres) that has already been intensively surveyed for cultural sites and the 35% of the Yellow Jacket allotment (3,046 acres) that has been intensively surveyed for cultural sites. While this only adds another 7% to our inventory total, the models suggest that this will account for the majority of all sensitive historic properties.

Assessment:
National Register **Eligibility** and **Assessment** of Potential Impacts

EVALUATION

➤ **The BLM will apply the National Register criteria to evaluate the historic significance and integrity of all historic properties identified within the inventoried area and for those previously recorded elsewhere within the APE**

➤ **BLM will ASSESS likelihood of <u>potential impacts</u> from proposed grazing and assess each previously recorded and newly recorded historic property for Livestock Sensitivity**

➤ **In consultation with Tribal Nations and SHPO**

RESOLUTION:
Minimization, Avoidance, and Mitigation

Minimization Measures:

➤ Reduction of livestock **numbers**

➤ Changes to **seasonality** of use

➤ Livestock Species **Alternatives** (cattle, sheep, mixed)

RESOLUTION:
Minimization, Avoidance, and Mitigation

Avoidance Measures:
- ➤ Wire Fencing
- ➤ Brush Fencing
- ➤ Worm or Pole Fencing
- ➤ GPS Collar-based Virtual Fencing
- ➤ Shepherding
- ➤ Water and/or mineral placement

RESOLUTION:
Minimization, Avoidance, and **Mitigation**

Mitigation Measures:

➢ Data recovery

➢ Offsite or Alternative Mitigation:

- Architectural and rock art documentation (HABS, HAER, HAL)

- Public interpretation, e.g. creation of K-12 school curriculum

- Assisting in the development of Tribal or community historic preservation plans

- Presentation of new data, syntheses and analyses of previously collected data

- Monitoring of ungrazed areas (researchers);

- Research and analysis of assumptions around site sensitivity,

- Demonstration of public benefit

- Other proactive grazing studies and partnerships

EAST ELEVATION

SCALE: 3/8" = 1'-0"

FEET 0 1 2 3 4

METERS 0 .5 1
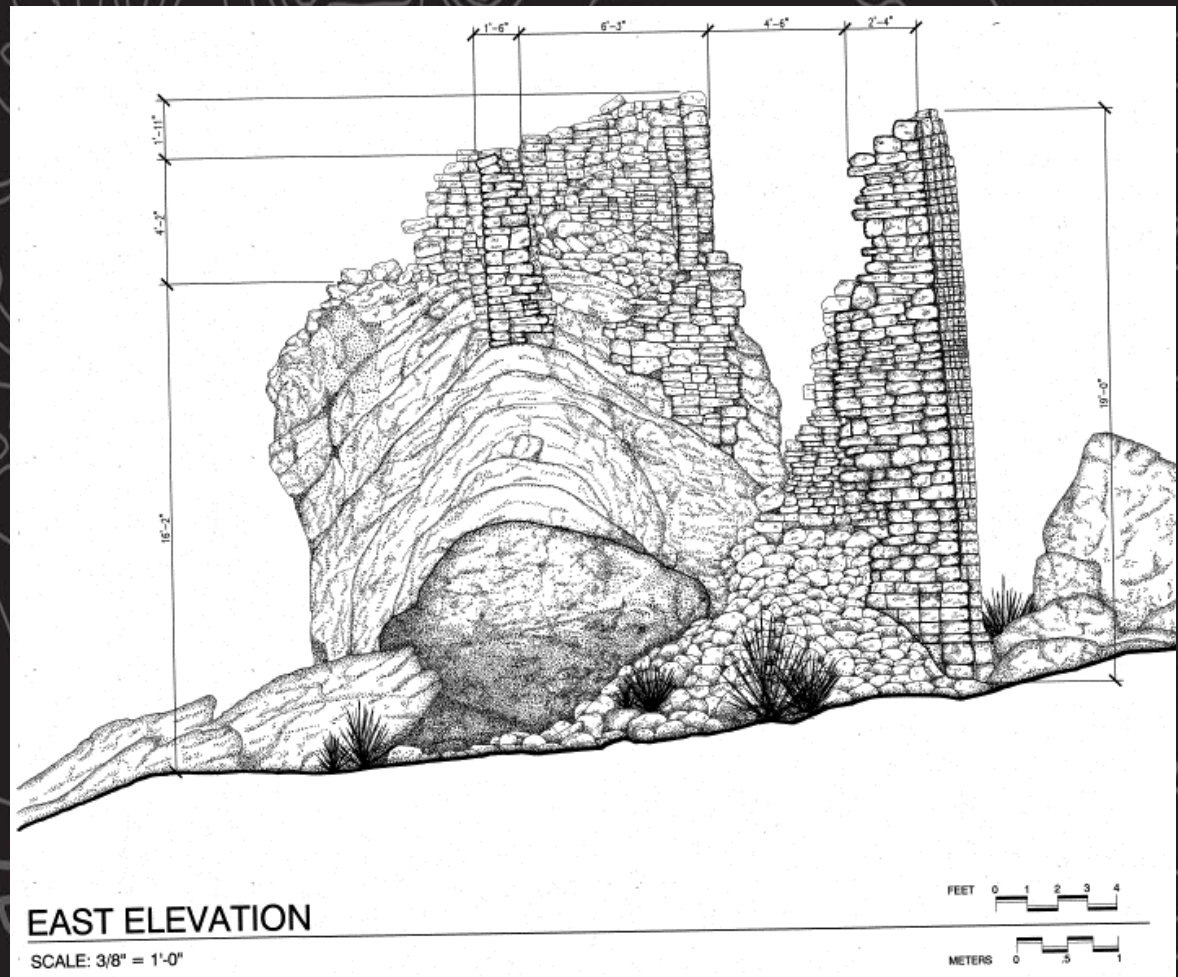
MONITORING and ADAPTIVE MANAGEMENT

Cultural Resources Monitoring: The allotment monitoring plan will include, but is not limited to:

1. Monitoring of cultural resources to <u>verify</u> the Sensitive Historic Property Model

2. Monitoring of cultural resource <u>condition</u>.

3. Recurring monitoring of site- specific <u>resolution</u> measures

4. Recurring monitoring of historic property conditions, of both <u>targeted and randomly</u> selected sites

5. Targeted monitoring of <u>livestock impacts</u> within areas of predicted High, Medium, and Low sensitive historic property frequency using associated environmental variables
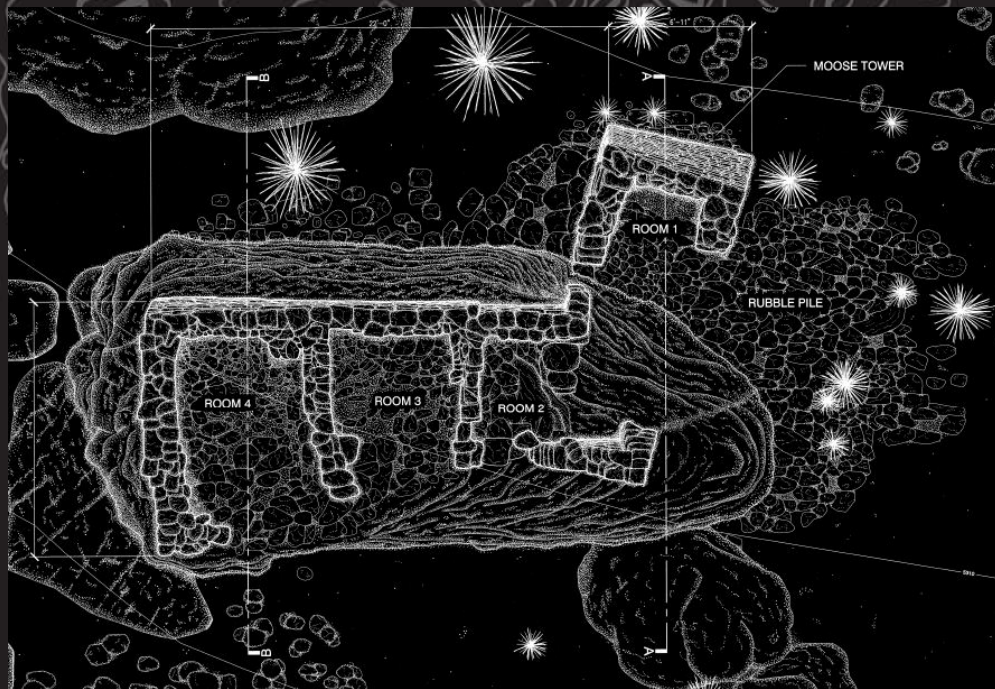
MONITORING and ADAPTIVE MANAGEMENT:

Livestock Utilization Monitoring

Will include , but will not be limited to:

1. Use of the **BLM Technical Reference 1734-3**, (Utilization Studies and Residual Measurements) to verify the **accuracy** of the "Livestock Utilization Model" developed as part of this programmatic agreement.

2. Collected livestock monitoring data will reflect prescribed **Utilization zones** from concentration areas (High, Moderate, Moderate/Low, Low & Low-None) to assess **Risk Management assumptions**

3. **Fence Line Monitoring**: will be conducted along boundary and interior fences to assess if they are concentrating livestock trailing. If cattle trailing impacts are identified along fences, additional cultural resources inventory, assessment and resolution may be identified and required.

4. Livestock Use **Resolution Effectiveness** Monitoring: If livestock grazing resolution measures are prescribed to address potential impacts to sensitive historic properties, BLM will conduct recurring monitoring to assess the effectiveness of these measures in mitigating the impact of livestock grazing on existing cultural resources.

Schedule: Next Steps

February 9, 2024–March 29, 2024 (7 Weeks)	<u>PA Version #4</u>. Participants: Signatories, Invited Signatories, and Concurring Parties • 30 Day Review of complete Draft PA • <u>Virtual or In Person Presentation w/i 30 Review Period</u> • <u>PA Finalization</u>
March 30- April 12, 2024	<u>Sign PA</u>. Participants: Signatories, Invited Signatories, and Concurring Parties

Yellow Jacket / Flodine Park:
Section 106 Programmatic Agreement