

Hypothesis: Ground squirrel territorial behavior is responsible for the appearance of the patterned ground in the Lost River Valley.



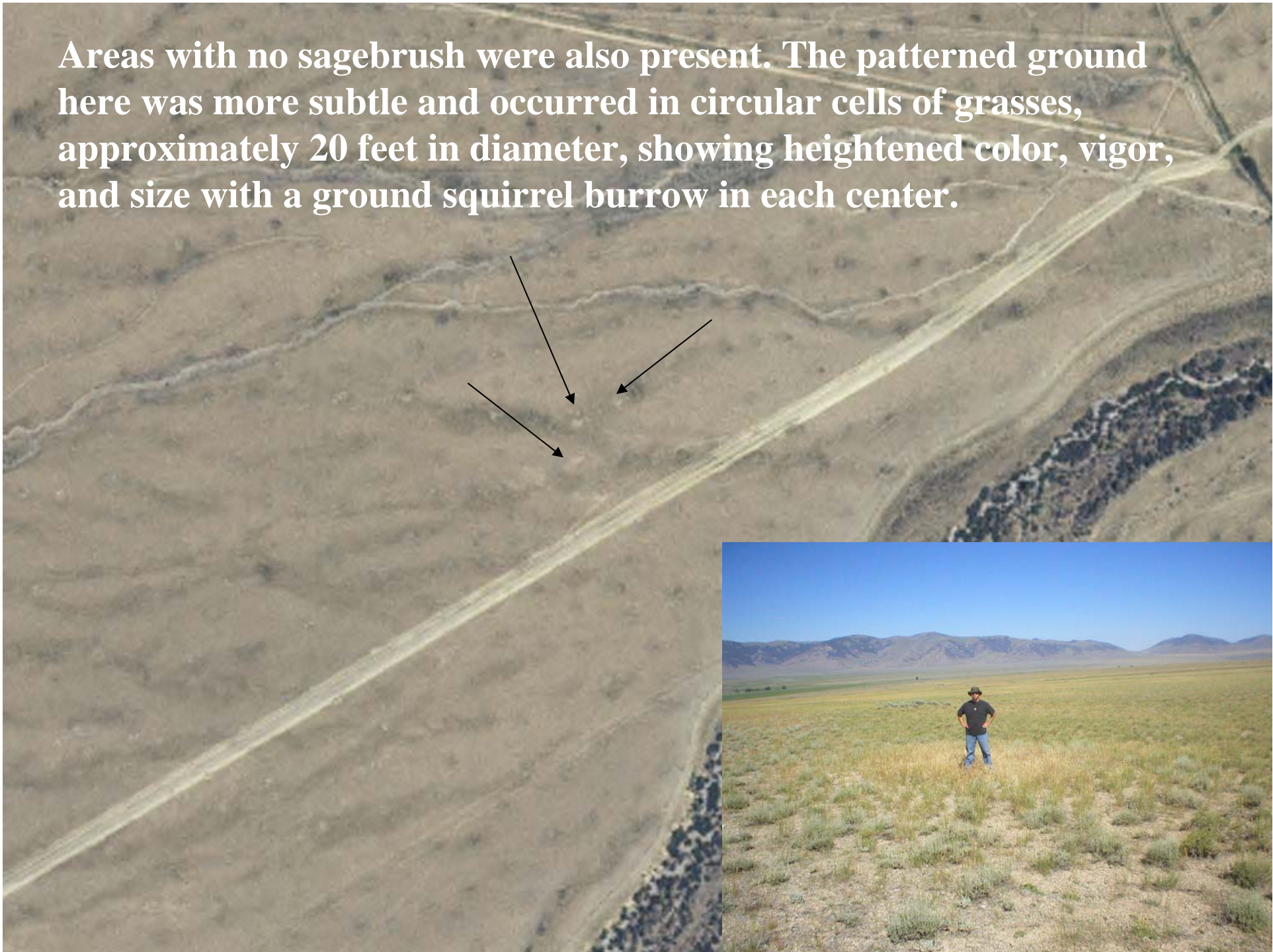


Patterned ground in the Lost River Valley is typified by roughly circular and regularly spaced colonies of sagebrush showing increased height, vigor, and productivity.

Colonies are roughly 20 feet in diameter and the sagebrush may be up to 2.5 times taller than the sagebrush outside the colonies.



Areas with no sagebrush were also present. The patterned ground here was more subtle and occurred in circular cells of grasses, approximately 20 feet in diameter, showing heightened color, vigor, and size with a ground squirrel burrow in each center.





The study area included colonies off of the Birch Springs and Double Springs roads.



Mounding and active transport of materials appears to be happening in the center of these sagebrush and grass colonies.

Another example of mounding and transport.



In all sagebrush colonies examined, ground squirrel burrows were present



This sagebrush colony demonstrates the nature of the transport and mounding occurring.



We believe ground squirrel burrows contribute aeration, increased hydration, and fecal material to the soils of these colonies, increasing the productivity and size of the plants.





The Egg or the Chicken?

It seems that the spatial distribution of patterned ground plant colonies is regulated by territorial behavior of the ground squirrels. Very few burrows were found outside the colonies. Of 20 sagebrush colonies examined, all had ground squirrel burrows present in the center of the colony. Only 3 small, isolated squirrel burrows were found outside of these sagebrush circles. The presence of the burrows facilitates plant productivity.

Conclusions

- Larger, regularly spaced sagebrush and grasses exist in circular colonies of approximately 20 feet in diameter.
- Each colony is separated by approximately 250 feet.
- Ground squirrel burrows are present in the center of each colony and are very infrequent between colonies.
- Ground squirrel burrows appear to hydrate, aerate, and fertilize the ground where the plant colonies develop.
- The burrows are spaced as a function of ground squirrel territoriality.
- It seems that ground squirrels are the agents of the peculiar mounding and transporting of alluvial material producing patterned ground in the Lost River Valley.