

BIG SPRINGS ALLOTMENT EVALUATION

**Achieving the Idaho Standards for Rangeland Health
And
Conformance with the Guidelines for Livestock Grazing Management**



Introduction

This document is an evaluation of Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management of the public lands administered by the Salmon Field Office (SFO) of the Bureau of Land Management (BLM) within the Big Springs Allotment.

This is the first in a series of documents, including the Big Springs Allotment Evaluation, and the appropriate National Environmental Policy Act (NEPA) documentation and subsequent Decision(s) that would change management where needed on the Big Springs Allotment.

This evaluation reports the condition and/or function of public land resources within the Big Springs Allotment to the authorized officer, the Salmon Field Manager. The authorized officer reviews the findings in this evaluation to determine whether the eight Standards for Rangeland Health are being met and whether current livestock management conforms to the Idaho Guidelines for Livestock Grazing Management.

The assessed condition/function of the Big Springs Allotment Evaluation will be used in the NEPA process. An environmental assessment (EA) will be written addressing all resource concerns identified within the Big Springs Allotment. If existing grazing management practices or levels of grazing use on the Big Springs Allotment are determined to be a significant factor in failing to achieve one or more of the eight Standards, the BLM is required by regulation (43 CFR 4180.1) to make grazing management adjustments.

Implementation of new management will begin following completion of the NEPA process, but full implementation of revised grazing plans, if needed, and/or range improvement projects associated with these plans may take several years. The new plans will be developed in consultation and coordination with the affected permittees, the agency having lands or managing resources within the area and other interested parties.

The Salmon Field Office completed a Resource Management Plan (RMP) in 1987 and amended that plan in 2001. The Lemhi RMP will provide program guidance in the SFO until replaced by a new Land Use Plan. The Lemhi Resource Area Ecological Site Inventory of 1983 provides documentation of rangeland conditions.

Background

The Big Springs Allotment is located in Lemhi County, Idaho and comprises 1,042 acres of public land. The allotment lies within Township 16 & 17 North and Ranges 24 & 25 East, Boise Meridian. This evaluation addresses land health conditions on BLM public lands only.

Elevations range from approximately 5,760 feet to 6,120 feet. Topography varies from stream drainage bottoms to steep mountain ravines and ridge tops with rocky outcrops. Slopes range from undulating to very steep. Average annual precipitation is 9 inches, most of which occurs in May and June as rain (Western Regional Climate Center, 2008). Soils in the Big Springs Allotment are predominantly clay loams and loams ranging from shallow to deep. These soils are affected by climate and parent material, and were formed primarily from alluvium.

Vegetation in the Big Springs Allotment reflects the diversity of ecological conditions across the landscape. The dominant plant communities and habitat types vary depending upon the soils,

precipitation, elevation, slope, and aspect. Vegetation includes wetland and riparian communities, drier upland sites, and forested habitats at higher elevations.

Livestock Grazing History

Livestock have grazed in the Lemhi valley since the 1860's, after the discovery of gold. Large bands of sheep and herds of cattle grazed the valley, often season long or until winter snows began to limit forage availability. The allotment was historically grazed with cattle and horses until 1985, when the AUMs allocated to horses were converted to cattle. The allotment only has one pasture and was named for the large spring complex known as Big Springs. The only water sources on the allotment are Big Springs and one additional undeveloped spring that provides limited water early in the season. Although cattle are permitted from June through August, grazing has generally occurred earlier in the season prior to July in order to maintain the condition of the spring complex.

The Big Springs Allotment is considered a *Maintain* (M) allotment, as categorized by the SFO based on resource values and opportunities for improvement, and currently does not have an Allotment Management Plan (AMP). The stocking rate is 7.2 acres/AUM, which is influenced by soils, vegetation type, topography, water availability, and local weather. The kind and class of livestock authorized to graze on the allotment is cattle (cow/calf pairs). The ecological conditions of the Big Springs Allotment are 701 acres (67%) in Fair condition, and 341 (33%) acres in Poor condition (Figure 1) (RMP, 2001).

Figure 1: Ecological conditions of the Big Springs Allotment (ESI, 1983).

Ecological Condition

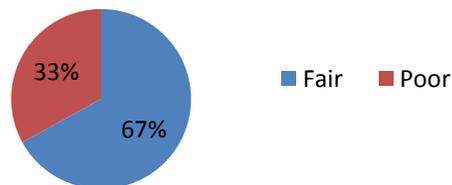


Table 1: The current permit/preference on the Big Springs Allotment:

No. Livestock/Kind	Dates	% Public Land	Permittee
48 Cattle	06/01 – 08/31	100	Scott and Eunice Tyler
Preference:	145 Active AUMs	0 Suspended AUMs	145 AUMs TOTAL

Table 2: The objectives for the number of AUMs for the Big Springs Allotment from the RMP, as well as the average actual grazing use on the allotment from 2002 to 2006 as reported by actual use booklets submitted by the permittees at the end of the grazing season.

AUMs from the RMP:		Average Actual Use for the previous 10 years:
RMP short-term objective: 148 AUMs		88 AUMs
RMP long-term objective: 163 AUMs		
RMP Active preference: 145 AUMs		

Process

This evaluation was completed in accordance with BLM regulations regarding Rangeland Health Standards. Rangeland Health Standards are described in detail in the *Idaho Standards for Rangeland Health and Guidelines for Livestock Grazing Management*. Standards are statements of physical and biological condition or degree of function required for healthy sustainable lands. Achieving or making significant progress towards these functions and conditions is required of all uses of public lands, as stated in 43 CFR 4180.1.

This evaluation will report condition and/or function for the following eight Idaho Standards for Rangeland Health:

- Standard 1: Watersheds
- Standard 2: Riparian and Wetland Areas
- Standard 3: Stream Channel/Floodplain
- Standard 4: Native Plant Communities
- Standard 5: Seedings
- Standard 6: Exotic Plant Communities, Other than Seedings
- Standard 7: Water Quality
- Standard 8: Threatened and Endangered Plants and Animals

Procedure to determine conformance with the standard(s):

The Big Springs Allotment was assessed according to Interagency Technical Reference 1734-6 “Interpreting Indicators of Rangeland Health.” This qualitative process evaluates 17 “indicators” to assess three interrelated components of rangeland health: soil/site stability, hydrological function, and biotic integrity. Trend monitoring data, existing inventories, field visits, and historical photographs are used by the ID team to assess condition and function. The Natural Resource Conservation Service (NRCS) has developed Ecological Site Descriptions based on specific soil types, precipitation zones and location. These describe various characteristics and attributes including the vegetative species and relative percentage each are expected to be present on the site. The ID team refers to these site descriptions while completing the Rangeland Health Assessment (RHA), which helps the ID team determine the departure from what is expected for the site assessed based upon soil/site stability, hydrologic function, and biotic integrity.

Rangeland Health Assessment Site Selection:

The site selected for the RHA was chosen based upon representative soil type and ecological sites of the allotment, and are representative of rangeland conditions occurring on the Big Springs Allotment. Digital mapping of ecological sites, soil types, distances to developed and

undeveloped water sources, and distances from sage grouse leks were also used by the ID team to examine potential sites to conduct the RHA. Soil type was determined by digging soil pits and comparing soils maps of the area, ensuring that the ID team collected data for the RHAs on soils representative of that portion of the allotment.

After examining the allotment, the interdisciplinary team selected one representative site for the RHA in the allotment. The RHA site was located within the Dawtonia soil of the Dawtonia-Custco association, which comprises 56% of the pasture and is the largest soil unit within the pasture. The ID team selected the site within the Wyoming big sagebrush/bluebunch wheatgrass (*Artemisia tridentata* spp. *wyomingensis*/*Pseudoroegneria spicata*) habitat type, which is the most frequently utilized by cattle due to proximity to water. The site within the Dawtonia-Custco association was chosen due to its approximation to a sage grouse lek, water, and distance to a fences and roads.

Standard 1 (Watersheds)

Standard doesn't apply

Evaluation and Information Sources (*required regardless of which box is checked*): Rangeland Health Assessments 06/17/2008 including visual observations, line-point intercept data, and soil stability tests (Field visits and project inspections throughout the allotment in 2008, and ID team meetings on 4/23/2008 and 10/29/2008).

Watersheds should provide proper infiltration, retention, and water release that are specific to the soil type, vegetation, climate, and landform in order for proper nutrient and hydrological cycling as well as energy flow, to occur.

No rills or water-flow patterns were present at the site. No gullies, wind-scoured areas, blowouts, or depositional areas occurred. The soil surface was resistant to erosion resulting from the vegetative, rock, and litter cover, and no surface loss or degradation was apparent. No compaction layer was present on the soil surface. Large woody litter was not moving far from its origin; however the slope on the site was not such that woody or fine litter would be expected to move far from the source. Plant community composition and distribution relative to infiltration was as expected for the site, with adequate composition of deep-rooted bunchgrasses and shrubs to increase snow accumulation and promote infiltration. The amount of fine litter and woody debris was as expected for the site. Bare ground was lower than expected for the site at 12%, compared to 50-60% expected, resulting from the amount of surface gravel and lichen.

Table 3. Hydrologic and soil and site stability indicators for watersheds on the Big Springs Allotment.

Hydrologic Function		Soil and Site Stability	
	Rating		Rating
Indicators:	Big Springs RHA	Indicators:	Big Springs RHA
Rills	<i>none to slight</i>	Rills	<i>none to slight</i>
Water-flow patterns	<i>none to slight</i>	Water-flow patterns	<i>none to slight</i>
Pedestals and/or terracettes	<i>none to slight</i>	Pedestals and/or terracettes	<i>none to slight</i>
Bare ground	<i>none to slight</i>	Bare ground	<i>none to slight</i>
Gullies	<i>none to slight</i>	Gullies	<i>none to slight</i>
Soil surface resistance to erosion	<i>none to slight</i>	Wind Scour	<i>none to slight</i>
Soil surface loss or degradation	<i>none to slight</i>	Litter movement	<i>none to slight</i>
Plant community composition and distribution relative to infiltration	<i>none to slight</i>	Soil surface resistance to erosion	<i>none to slight</i>
Compaction layer	<i>none to slight</i>	Soil surface loss or degradation	<i>none to slight</i>
Litter Amount	<i>none to slight</i>	Compaction layer	<i>none to slight</i>
Overall Ratings:	<i>none to slight</i>	Overall Ratings:	<i>none to slight</i>

The watershed within the Big Springs Allotment provides for water infiltration, retention, and release appropriate for the soils, vegetation, climate, and land forms present. No soil degradation or loss was evident, and infiltration was as expected due to the composition of deep rooted native bunchgrasses and shrubs.

1 <input checked="" type="checkbox"/> Meeting the Standard	4 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are significant factors
2 <input type="checkbox"/> Not Meeting the Standard, but making significant progress towards	
3 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are not significant factors	5 <input type="checkbox"/> Not Meeting the Standard, cause not determined

Standard 2 (Riparian Areas and Wetlands)

Standard doesn't apply

Evaluation and Information Sources (*required regardless of which box is checked*): Stream Condition Rating by drainage for the Salmon River (BLM 2001), ID team field visits and stream and spring assessments in 06/17/2008, and ID team meetings 4/23/2008 and 10/29/2008.

Riparian and wetland areas should be in properly functioning condition appropriate to the soil types, climate, geology, and landform to provide for proper nutrient and hydrologic cycling, as well as, energy flow. The ID team members evaluated undeveloped springs and used data from stream condition class ratings to determine the vigor, age-class distribution, and composition of riparian and wetland vegetation present on the allotment. Riparian and wetland vegetation should also control erosion, stabilize streambanks, provide shading, filter sediment, aid floodplain development, dissipate energy, delay flood water, and increase groundwater recharge.

Riparian/wetland habitat in the allotment is limited to a complex of springs which are tributaries to the lower end of Mill Creek and one upland spring in an upland draw. Additionally, there is 0.1 mile of lower Mill Creek on public land in a larger holding of private land. "Big Springs" is a large spring complex of approximately 35 acres. The complex is comprised of many different riparian and wetland species including beaked sedge (*Carex utriculata*), Nebraska sedge (*Carex nebraskensis*), brookgrass (*Catabrosa aquatica*), monkeyflower (*Mimulus guttatus*), multiple species of rushes (*Juncus*), and other riparian grasses. Riparian trees and shrubs that are also found include aspen (*Populus tremuloides*), booth willow (*Salix boothii*), geyer willow (*Salix geyeriana*), coyote willow (*Salix exigua*), and alder (*Alnus incana*).

All riparian species in these areas appeared to be healthy and were reproducing. Multiple age-classes of aspen were present throughout the complex, with many new aspen seedlings interspersed among older age-class stands. Several species of willows were identified with all age-classes represented. The herbaceous riparian species including sedges, rushes, and riparian grasses help stabilize the soils and banks along the springs and help maintain the integrity of the wetland soil characteristics within the spring complex. Impacts to the spring complex due to large ungulates (big game and livestock) are minimal and very little evidence of trampling or browsing of woody riparian species occurs. The other undeveloped spring supports very little woody riparian vegetation due to the ephemeral nature of the spring. Herbaceous riparian vegetation including sedges, rushes, and riparian grasses are reproducing, but are also limited in extent due to the ephemeral nature of the spring. Livestock grazing for several years has occurred prior to the hot season, which has helped maintain and improve the condition of the spring complex on the allotment.



2008-Big Springs Complex



2008- Big Springs main source

Overall, the condition of riparian vegetation on the allotment is very good, and the spring complex supports a diverse riparian community capable of maintaining the hydric soils and

wetland characteristics. Grazing management of the Big Springs Allotment for early season use helps maintain and improve the conditions of the riparian vegetation.

1 <input checked="" type="checkbox"/> Meeting the Standard	4 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are significant factors
2 <input type="checkbox"/> Not Meeting the Standard, but making significant progress towards	
3 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are not significant factors	5 <input type="checkbox"/> Not Meeting the Standard, cause not determined

Standard 3 (Stream Channel/Flood plain)

Standard doesn't apply

Evaluation and Information Sources (*required regardless of which box is checked*): Stream Condition Rating by drainage for the Salmon River (BLM 2001), ID team field visits 06/17/2008, and ID team meetings on 4/23/2008 and 10/29/2008.

Stream channels and floodplains should be properly functioning relative to the geomorphology and climate in order to provide proper nutrient and hydrologic cycling, and energy flow. Indicators that ID team members used to evaluate this standard include whether stream channels and floodplains dissipate energy and transport sediment, have access to floodplains, have limited compaction from human activities, and have stable streambanks.

Approximately 0.5 miles of spring-fed stream channels exist on the allotment. These channels are tributaries to Mill Creek on adjacent private land and are used for irrigation. The main spring in the 35-acre complex, Big Springs, is highly stabilized due to the extent of herbaceous and woody riparian species along the channel. The stream channel along Big Springs is properly functioning and possesses desirable stream bank characteristics.

About 0.1 mile of lower Mill Creek is in the allotment and rated as Functioning at-Risk condition with a static trend. This area contains many springs that form lower Mill Creek mostly on private land. The public land on this segment is grazed moderately and shows evidence of reduced woody riparian plants and some stream bank trampling, but is still dissipating energy, has access to its floodplain, has limited erosion and stable streambanks.

The allotment also has about 150 feet of the lower Walters Creek channel. The channel is intermittent mostly due to irrigation withdrawal upstream. This stream channel is relatively very small and historically was most likely intermittent/ephemeral. There is very little riparian vegetation in the channel due to lack of water.

Overall, the stream channel habitat in the allotment is functioning properly with high quality riparian vegetation and habitat conditions.

1 <input checked="" type="checkbox"/> Meeting the Standard	4 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are significant factors
2 <input type="checkbox"/> Not Meeting the Standard, but making significant progress towards	
3 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are not significant factors	5 <input type="checkbox"/> Not Meeting the Standard, cause not determined

Standard 4 (Native Plant Communities)

□ Standard doesn't apply

Evaluation and Information Sources (*required regardless of which box is checked*): Rangeland Health Assessments 06/17/2008 including visual observations, line-point intercept data, field visits throughout the allotment in 2008, and ID team meetings on 4/23/2008 and 10/29/2008.

Healthy, productive, and diverse native animal habitat and populations of native plants should be maintained or promoted that are appropriate to the soil types present on the Big Springs Allotment, and should provide for proper nutrient cycling, hydrologic cycling, and energy flow. Native plant communities were evaluated throughout the allotment based upon indicators of biotic integrity (Table 4) of the native plant communities present, which includes information from the RHA's completed in the Big Springs Allotment. The ID team evaluated upland health conditions in all native plant communities including sagebrush and grassland areas, forested areas, noxious weed and cheatgrass infestations, and special status plants occurring in the Big Springs Allotment. Special status plants will be discussed in detail under Standard 8: Threatened and Endangered Plants and Animals.

Approximately 77% of the allotment is comprised of soil complexes and associations that support various upland habitat types. Wyoming big sagebrush and bluebunch wheatgrass can be found throughout the allotment. The prominent herbaceous species throughout, which are cool season grasses and provide the understory vegetation in the sagebrush habitat types, included in these uplands are bluebunch wheatgrass and Sandberg bluegrass (*Poa secunda*). Forbs such as long leaf phlox (*Phlox longifolia*), cushion phlox (*Phlox hoodii*), Indian paintbrush (*Castilleja spp.*), buckwheat (*Eriogonum spp.*), tapertip hawkbeard (*Crepis acuminata*), and fleabane (*Erigeron spp.*) also occur in the sagebrush understory.

Uplands: The uplands are in good ecological condition and the overall rating for the native plant communities within the Big Springs Allotment was a *none to slight* departure from the conditions expected for the soil type and ecological sight (Table 4). No soil loss or degradation was occurring at the RHA site and no compaction layer was present. The order of functional structural groups at the RHA site was cool season bunchgrasses dominant over shrubs, shrubs dominant over forbs, and shallow rooted grasses subdominant to forbs, which was expected for the ecological site. The amount of coarse and fine litter on the site was as expected, with fine litter accumulation present under shrubs. Annual production was estimated at 380 lbs/acre, which is within the acceptable range for annual production in a normal year for the Wyoming sagebrush/bluebunch wheatgrass plant community. Plant mortality and decadence in perennial grasses and shrubs was not more than expected for the ecological site. All functional groups were visibly producing seeds, and seedlings were also present. Cover of biological crusts at the RHA site from the line-intercept data collected indicated that cover of biological crusts was 19%.

Table 4. The biotic integrity ratings for the nine indicators of rangeland health that is associated with plant health and function.

Biotic Integrity	
Indicators:	
Soil surface resistance to erosion	<i>none to slight</i>
Soil surface loss or degradation	<i>none to slight</i>
Compaction layer	<i>none to slight</i>
Functional/Structural Groups	<i>none to slight</i>
Plant Mortality/Decadence	<i>none to slight</i>
Litter Amount	<i>none to slight</i>
Annual Production	<i>none to slight</i>
Invasive plants	<i>none to slight</i>
Reproductive capability of perennial plants	<i>none to slight</i>
Overall Ratings:	<i>none to slight</i>

Noxious weeds and cheatgrass: No noxious weeds were identified on the allotment; however knapweed (*Centaurea maculosa*) is located on the adjacent private land. Cheatgrass was not found in the uplands, however in a disturbed area near Big Springs, a small patch of cheatgrass was found during the ID team allotment inspection.

Overall conditions of the native vegetation within the allotment are very good. Herbaceous species and shrubs are reproducing and generally vigorous throughout the allotment. Native plant communities within the allotment are promoting healthy upland conditions.

1 <input checked="" type="checkbox"/> Meeting the Standard	4 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are significant factors
2 <input type="checkbox"/> Not Meeting the Standard, but making significant progress towards	
3 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are not significant factors	5 <input type="checkbox"/> Not Meeting the Standard, cause not determined

Standard 5 (Seedings)

X Standard doesn't apply

1 <input type="checkbox"/> Meeting the Standard	4 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are significant factors
2 <input type="checkbox"/> Not Meeting the Standard, but making significant progress towards	
3 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are not significant factors	5 <input type="checkbox"/> Not Meeting the Standard, cause not determined

Standard 6 (Exotic Plant Communities, Other than Seedings) Standard doesn't apply

Evaluation and Information Sources (*required regardless of which box is checked*):

1 <input type="checkbox"/> Meeting the Standard	4 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are significant factors
2 <input type="checkbox"/> Not Meeting the Standard, but making significant progress towards	
3 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are not significant factors	5 <input type="checkbox"/> Not Meeting the Standard, cause not determined

Standard 7 (Water Quality)

Standard doesn't apply

Evaluation and Information Sources (*required regardless of which box is checked*): State of Idaho; Department of Environmental Quality “Lemhi River Watershed Assessment” and 303d stream list/Idaho 2002 305(B) Integrated Report (Final).

There are no streams in the Big Springs Allotment that are listed in the IDEQ Lemhi River Watershed TMDL or the 2002 305(B) Integrated Report (Final).

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3 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are not significant factors	5 <input type="checkbox"/> Not Meeting the Standard, cause not determined

Standard 8 (Threatened and Endangered Plants and Animals)

Standard doesn't apply

Evaluation and Information Sources (*required regardless of which box is checked*): Lemhi Resource Management Plan (1987), and Idaho Conservation Data Center (CDC) database. Rangeland Health Assessments including visual observations and line-point intercept data. Field visits were completed throughout the allotment in 2008.

Maintaining habitat that is suitable for viable populations of special status species, including threatened, endangered and BLM sensitive species is an important component of managing public lands. The ID team used several parameters to assess the existing and potential habitat of these species, including annual population monitoring of sensitive plant species, and field observations of fisheries and wildlife habitat and species presence.

The allotment provides habitat for various Special Status Species. Type 1 Special Status Species are those species that were listed as threatened or endangered, or were proposed or candidates for listing under the Endangered Species Act in 2003. Type 2 Special Status Species are species that are experiencing significant declines throughout their range with a high likelihood of being listed in the foreseeable future due to their rarity and/or significant endangerment factors. Type 3 Special Status Species are species that are experiencing significant declines in population or habitat and are in danger of regional or local extinctions in Idaho in the foreseeable future if factors contributing to their decline continue.

Type 1 Special Status wildlife species that have been documented on, or near, the Big Springs allotment include the gray wolf. Gray wolf sightings have increased in the area. No known dens or rendezvous sights are documented in the allotment. No wolf sightings have been recorded on the allotment, and it is completely surrounded by private land which decreases the possibility of wolves using the allotment.

The only Type 2 Special Status wildlife species that has been documented on the allotment is the pygmy rabbit. Surveys have found pygmy rabbits in the eastern side of the allotment. The vegetation on the allotment is as expected and provides suitable habitat for pygmy rabbits. Surveys have not documented sage grouse on the allotment. A sage grouse lek has been documented less than a mile from the western boundary of the allotment. Nesting may be occurring on the allotment, but has not been documented. The allotment provides habitat suitable to maintain the Special Status wildlife populations on the allotment.

Surveys and field visits in 2008 indicated that no Threatened, Endangered, or BLM Sensitive plant species are present in the allotment. Field surveys conducted by Idaho Department of Fish and Game have found no TES fish species in lower Mill Creek and tributaries including the Big Spring channel. The allotment does not provide habitat for ESA listed fish species.

1 <input checked="" type="checkbox"/> Meeting the Standard	4 <input type="checkbox"/> Not Meeting the Standard, current livestock grazing management practices are significant factors
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ID Team:

Tanya Thrift	Rangeland Management Specialist
Vince Guyer	Natural Resources Specialist (T&E)
Craig Nemeth	Supervisory Nat. Res. Spec.
Jude Trapani	Fisheries Biologist
Alexia Cochrane	Botanist
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