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*Working to protect and restore Western Watersheds*

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### **Re: Taylor/Long Grazing Project Scoping**

Dear District Ranger:

Western Watersheds Project, Sequoia ForestKeeper and the Kern-Kaweah Chapter of the Sierra Club thank you for this opportunity to provide scoping comments for the **Taylor/Long Grazing Project** on Sequoia National Forest ("SNF"). The legal notice for the project was published in the Porterville Recorder on April 27, 2013 so these comments are timely.

Western Watersheds Project works to protect and conserve the public lands, wildlife and natural resources of the American West through education, scientific study, public policy initiatives, and litigation. Western Watersheds Project and its staff and members use and enjoy the public lands, including the lands at issue here, and its wildlife, cultural and natural resources for health, recreational, scientific, spiritual, educational, aesthetic, and other purposes. Western Watersheds Project has over 1,400 members nationwide.

Sequoia ForestKeeper is a non-profit conservation corporation whose mission is to protect and restore the ecosystems of the Southern Sierra Nevada including Sequoia National Forest through monitoring, enforcement, education, and litigation. Sequoia ForestKeeper and its nearly 800 members and supporters have vital interests in protection of wildlife and imperiled species that occur on the public lands in the Sequoia National Forest.

We have reviewed the Ranger District's Proposed Action and accompanying maps for the two meadows/pastures (Taylor and Long). Because of significant resource conflicts, we urge the Forest Service to make cancelling the permits for these allotments as the proposed action, as is allowed for under Public Law 108-7 §328.<sup>1</sup>

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<sup>1</sup> Available at: [http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108\\_cong\\_bills&docid=f:hj2enr.txt.pdf](http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=108_cong_bills&docid=f:hj2enr.txt.pdf)

The purpose of an Environmental Assessment (“EA”) is to provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (“EIS”) or issue a finding of no significant impact (“FONSI”). 40 C.F.R. § 1508.9. Under the National Environmental Policy Act (“NEPA”), the Forest Service cannot make conclusory assertions that an activity will not have an insignificant impact on the environment but must, instead, take a “hard look” at the potential impacts of a proposed action, and put forth a “convincing statement of reasons” that explains why the project will have no more than an insignificant impact on the environment. Please address the following issues for this proposed livestock grazing project so that the need for an Environmental Impact Statement can be determined.

### ***Purpose and Need for Action***

According to the scoping letter, the purpose and need is to consider reauthorization of livestock grazing on the Taylor/Long Allotment.

The Ranger District must first determine that these two meadows are suitable and capable for grazing. The Ranger District should also consider that the Forest has embarked on a revision of the 1988 Sequoia National Forest Land and Resource Management Plan (“Forest Plan” or “LRMP”) and that may include revised standards and guidelines.

The Ranger District also needs to revise the Allotment Management Plan (“AMP”) because there are some changes being proposed in grazing management. The existing and proposed AMPs should be provided and analyzed in the NEPA documents so that the effectiveness of the proposed changes can be determined.

### ***Capability and Suitability***

Capability, specific to grazing, is defined as lands accessible to livestock, producing forage or having inherent forage-producing capability, and able to withstand grazing on a sustained basis under reasonable management practices. By its very nature, capability changes with time so the Ranger District cannot rely on the capability and suitability determinations that were incorporated into the 1988 LRMP. A number of issues have come into play since 1988 including long-term drought, climate change, and proposed listing of some species under the Endangered Species Act. These must be factored into any suitability determination for any continued use of the allotment by livestock. The Ranger District needs to re-determine the capability and suitability of the allotments given current circumstances and needs to establish if sustained grazing is possible on these sensitive meadow habitats.

The Ranger District is also required to undertake a capability and suitability determination for all Management Indicator Species (“MIS”).

### ***Consistency with the Federal, regional, State, and local land use plans, policies and controls***

The President’s Council on Environmental Quality (CEQ) NEPA implementing regulations require that any possible conflicts between the proposed action and the objectives of any other Federal, regional, State, and local land use plans, policies and controls for the area

concerned be reviewed and analyzed [CEQ - Regulations for Implementing NEPA Sec. 1502.16 and Sec. 1506.2(d)]. The Ranger District therefore needs to evaluate the goals and objectives for each alternative in the environmental consequences section for their compatibility with all the controlling agreements and plans. The Forest must ensure the proposed action is based on best available science and complies with the Forest Plan, the NFMA, the Clean Water Act, the Endangered Species Act, the Wilderness Act, and the National Historic Preservation Act, as well as other state and federal laws concerning public lands.

### ***Desired Future Condition***

The desired conditions for range management under the 1988 Forest Plan require that the forest: Maintain or enhance the productivity of all forest ranges through adequate protection of the soil, water, and vegetation resources (1988 Forest Plan, pg. 4-3). The NEPA documentation should include maps showing soils, vegetation communities, and all springs, special aquatic features, and riparian areas.

### ***Monitoring***

The NEPA documents should explain the results of prior and proposed monitoring efforts on the allotment. Quantitative data from reading the trend plots should be tabulated so that fluctuations in species composition at plot locations can be discerned. The plot locations are in mesic areas. Because these mesic sites are not representative of the wet meadow areas where cattle may concentrate during summer, please provide results of monitoring of representative wet meadow sites that are grazed by livestock.

Reliance on utilization monitoring is inadequate to determine impacts to the full suite of plant and animal species, wilderness values, cultural resources, and other resources present in the project area. The NEPA documents should explicitly explain the entire suite of implementation and effectiveness monitoring activities that will be used by the Forest for this project and provide specific schedules for those monitoring actions.

### ***Alternatives***

The NEPA implementing regulations refers to the selection and review of alternatives as “the heart” of the environmental review [§ 1502.14]. Comparison of the alternatives will help “sharply defining the issues and providing a clear basis for choice among options by the decision maker and the public.” The regulations provide clear guidelines on how to select alternatives:

- (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
- (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
- (d) Include the alternative of no action.

- (e) Identify the agency's preferred alternative or alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference.
- (f) Include appropriate mitigation measures not already included in the proposed action or alternatives.

NEPA requires that an agency “succinctly describe the environment of the area(s) to be affected or created by the alternatives under consideration.” [40 C.F.R. § 1502.15] Without a stable and detailed description of the baseline environmental conditions there is nothing with which to compare the alternatives considered in the EA. Therefore, in order to make an informed decision in deciding whether to authorize livestock grazing on these allotments that complies with NEPA, the Ranger District must compare the proposed action with current management (which provides the existing baseline conditions) and no action (i.e. “no grazing”). The Forest should also consider two additional Alternatives: (A) Closure of Taylor Pasture to livestock to protect meadow habitat to benefit mountain yellow legged frogs and other resources; and, (B) a modified proposed action that excludes any grazing in the riparian area enclosure that would be created as part of the corral replacement on Taylor.

### ***Current Management & Actual Use***

According to the scoping letter, 80 cow/calf pairs are authorized to graze June 16-September 30 on Taylor and/or Long Meadows depending on readiness.

Region 5 monitoring records indicate that the Forest “Reduced livestock numbers to meet forage conditions” frequently over the last 10 years. Thus, the results of monitoring during those reductions may not be representative of what happens when cattle are turned out at the fully-permitted level.

Therefore, in order to properly inform the process, the NEPA documents should describe how current grazing management has been implemented. This requires documentation of actual use of the two pastures including all recent reductions in annual authorized use that have been made in response to resource conditions; actual turn-out dates for the two pastures over the last permit period; and documentation of all range developments and their condition including fences, corrals, water developments, and use of supplements. Please provide maps of livestock concentration and high/moderate use areas on the allotment.

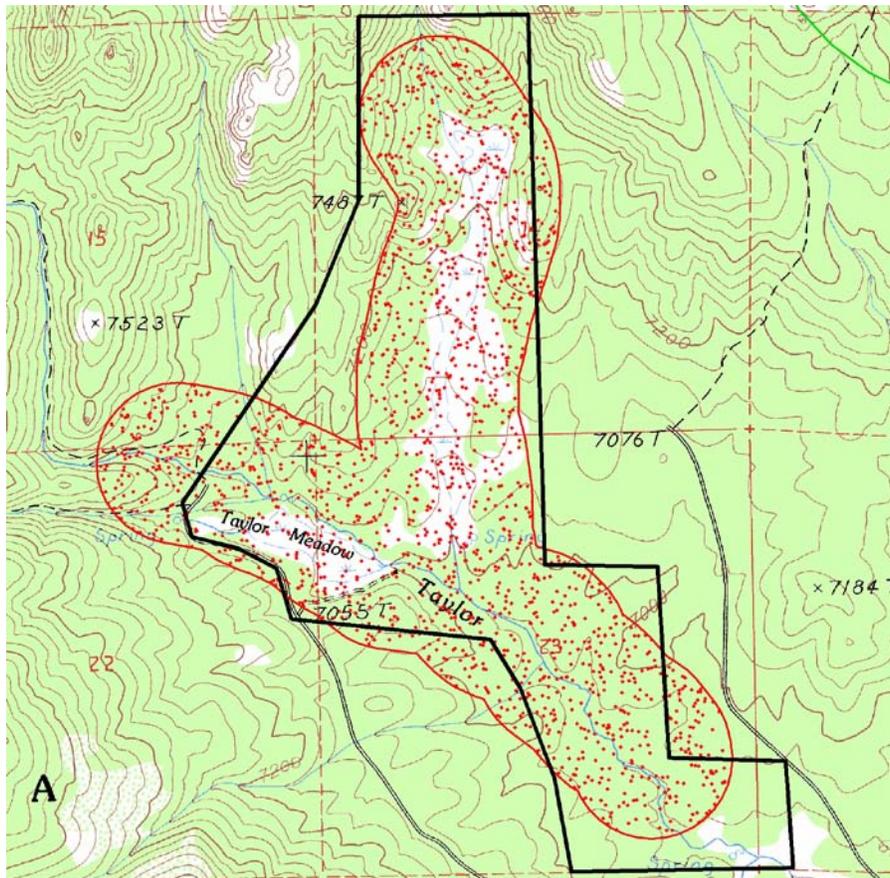
### ***Proposed Action***

The proposed action should be described in the NEPA documents with sufficient detail to understand what is being proposed and why it being proposed. For example, the Ranger District is proposing moving the eastern boundary fence on Long Meadow to increase the amount of mesic pasture. The Ranger District claims this because the fence is difficult to maintain because of snow load. Please provide documentation to support this claim and documentation that shows snow load is not an issue with the proposed fences at Taylor Meadow. We suspect there is another reason entirely for moving the Long Meadow boundary fence – to increase the amount of mesic area in the allotment to facilitate earlier turnout of cattle in wetter years.

The EA should include maps of the proposed constructions on Taylor Meadow and justifications for the enclosure dimensions. The NEPA documents should explain the basis for determining the size of this enclosure, how adequate the level of protection will be, and the direct, indirect and cumulative impacts of fencing off these small areas on wildlife and vegetation including the potential impacts of displaced cattle on adjacent resources. Please explain what is meant by “to control seasons of use for the riparian area” which is listed as a justification for the proposed fence since only summer grazing is authorized on the allotment.

### ***Rare, Listed and Sensitive Species***

The California Department of Fish and Wildlife’s California Natural Diversity Database identifies the entire Taylor meadow complex as habitat for *Rana muscosa* (CNDDDB 2013). The USFWS now refers to the frogs in the area as the Northern Distinct Population Segment (“DPS”) of the Mountain Yellow-Legged Frog. After many years of candidate status, the USFWS has proposed that the taxon be listed as endangered under the Endangered Species Act (USFWS, 2013<sup>2</sup>). The map below shows the California Department of Fish and Wildlife polygon for the Taylor Meadow *R. muscosa* occurrence (red) layered on a map of Taylor Allotment (black).



<sup>2</sup> USFWS, 2013. Endangered and Threatened Wildlife and Plants; Endangered Status for the Sierra Nevada Yellow-Legged Frog and the Northern Distinct Population Segment of the Mountain Yellow-Legged Frog, and Threatened Status for the Yosemite Toad; Proposed Rule. Federal Register. April 25, 2013. 78(80): 24472-24514. Online at: <http://www.gpo.gov/fdsys/pkg/FR-2013-04-25/pdf/2013-09600.pdf>

Recent estimates indicate that mountain yellow-legged frog populations are extirpated from 94% of historically known sites (Vredenburg *et al.*, 2007<sup>3</sup>). The remaining occurrences of the Sierra Nevada frogs are scattered, fragmented and isolated, making them vulnerable to further declines and local extirpations. Mountain yellow-legged frogs occur in two geographically disjunct populations that the FWS currently refers to as the Northern and the Southern California DPS. The Southern California DPS was listed as endangered in 2002. The Northern DPS was proposed in 2013 (USFWS, 2013).

The direct, indirect and cumulative effects of livestock grazing on the frog may be multiple. The Forest should address the following threats/factors in its NEPA analysis: direct trampling of individual adult frogs, eggs, larvae and froglets; alterations in local hydrology; reduced cover; cattle movement between meadows may transmit infective pathogens such as *Batrachochytrium dendrobatidis* (Derlet *et al.*, 2010<sup>4</sup>) between ponds. Indirect impacts include “nutrification” of waters by bovine fecal contamination and localized decreases in water quality. Water quality is a particularly important consideration for mountain yellow-legged frog conservation because the species has a lengthy larval period of one to four years (Bradford, 1983<sup>5</sup>; Vredenburg *et al.*, 2007). Metabolic wastes from cattle may impact water quality, decrease EPT<sup>6</sup> richness, and lower EPT ratios (Resh and Grodhaus, 1983<sup>7</sup>). Thus cattle excreta deposited in meadows, streams and waters may alter the invertebrate population, change the range of prey items available and change the nutritional quality of the frogs’ diets.

The California Natural Diversity Database also includes an occurrence of the wolverine, *Gulo gulo*, at Long Meadow. The USFWS has proposed listing wolverines occurring in the contiguous United States as a threatened species (USFWS 2013b<sup>8</sup>). Livestock impact wolverines by degrading their habitat, and by changing natural plant compositions to increase unpalatable or less digestible plants in the community which can affect wolverines negatively because of a reduced natural prey base throughout the year.<sup>9</sup> Small mammal abundance, species richness, and diversity are greater on ungrazed than grazed sites (for example see Moser and

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<sup>3</sup> Vredenburg, V. T., Bingham, R., Knapp, R., Morgan, J. A. T., Moritz, C., and Wake, D. 2007 Concordant molecular and phenotypic data delineate new taxonomy and conservation priorities for the endangered mountain yellow-legged frog. *J. Zool.*, 271: 361-374.

<sup>4</sup> Derlet, R. W., Goldman, C. and Connor, M. J. 2010. Reducing the Impact of Summer Cattle Grazing on Water Quality in the Sierra Nevada Mountains of California: A Proposal. *Journal of Water and Health*. 8(2): 326-333.

<sup>5</sup> Bradford, D. F. 1983. Winterkill, oxygen relations, and energy metabolism of a submerged dormant amphibian, *Rana muscosa*. *Ecology* 64 (5): 1171–83.

<sup>6</sup> The EPT Index is named for three orders of aquatic insects that are common in the benthic macroinvertebrate community: *Ephemeroptera* (mayflies), *Plecoptera* (stoneflies), and *Trichoptera* (caddisflies).

<sup>7</sup> Resh, V. H. and Grodhaus, G. 1983. Aquatic insects in urban environments. Pages 247-276 *In: Urban Entomology: Interdisciplinary Perspectives*. G.W. Frankie and C.S. Koehler, editors. Praeger Publishers, New York.

<sup>8</sup> USFWS. 2013b. Endangered and Threatened Wildlife and Plants; Threatened Status for the Distinct Population Segment of the North American Wolverine Occurring in the Contiguous United States; Establishment of a Nonessential Experimental Population of the North American Wolverine in Colorado, Wyoming, and New Mexico; Proposed Rules. *Federal Register* February 4, 2013, 78(23): 7864-7890. Online at: <http://www.gpo.gov/fdsys/pkg/FR-2013-02-04/pdf/2013-01478.pdf>

<sup>9</sup> Group of Experts on Conservation of Large Carnivores. 2000. Action Plan for the conservation of Wolverines (*Gulo gulo*) in Europe. Page 24. On-line at: <https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=1391890&SecMode=1&DocId=1459520&Usage=2>

Witmer, 2000<sup>10</sup>). Maintaining large and well-distributed herds of ungulates, especially mule deer and elk, may be an effective management tool in wolverine habitat (Beauvais and Johnson, 2004<sup>11</sup>). The activities of the USDA Wildlife Services Agency, which is often called in to control coyotes and other species that are attracted to livestock on public lands, are known to result in wolverine take. In 2010, a wolverine died after being trapped in a Wildlife Services' leg-hold trap in Payette National Forest in Idaho.<sup>12</sup> This was the third wolverine captured in agency traps since 2004.

The project area provides important habitat for other wildlife. In order to ensure compliance with NEPA, the Forest Service should provide baseline documentation of the species present in the project area so that the site-specific effects of the proposed action and alternatives can be evaluated. The Forest Service must ensure that adequate safeguards are in place to protect wildlife and their habitats, and that any impacts are adequately mitigated.

There are a number of rare plants found in the project area and much of the allotment consists of sensitive, wet meadow habitats. Plants are susceptible to being eaten by cattle, trampling by cattle, and by cattle modification of habitat and local hydrology. In order to evaluate the on-the-ground situation, field surveys following established plant survey protocols are requisite. Surveys for the plants and plant communities should follow California Native Plant Society ("CNPS") and CDFW floristic survey guidelines<sup>13</sup> and should be documented as recommended by CNPS<sup>14</sup> and California Botanical Society policy guidelines. The full floral inventory of all species encountered in the surveys should be documented.

Vegetation mapping needs to occur at a large enough scale to be useful for evaluating grazing impacts. Vegetation mapping should be at such a scale to provide an accurate accounting of riparian, meadow and other unique areas and adjacent habitat types that will be directly or indirectly affected by the proposed action. A half-acre minimum mapping unit size is recommended, such as has been used for other projects. Habitat classification should follow CNPS' Manual of California Vegetation<sup>15</sup> and follow the Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities<sup>16</sup>.

Results from repeat surveys should be provided in order to evaluate the existing project area conditions. Due to unpredictable precipitation, arid-adapted organisms have evolved to survive in these harsh conditions and if surveys are performed at inappropriate times or year or in

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<sup>10</sup> Moser, B. W. and Witmer, G. W. 2000. The effects of elk and cattle foraging on the vegetation, birds, and small mammals of the Bridge Creek Wildlife Area, Oregon. *International Biodeterioration & Biodegradation*. 45(3-4): 151-157.

<sup>11</sup> Beauvais, G. P. and Johnson, L. 2004. Species Assessment For Wolverine (*Gulo gulo*) in Wyoming. 47 pp. On line at: <http://www.blm.gov/pgdata/etc/medialib/blm/ny/wildlife/animal-assessmnts.Par.90309.File.dat/Wolverine.pdf>

<sup>12</sup> The killing agency: Wildlife Services' brutal methods leave a trail of animal death. *Sacramento Bee*, April 28, 2003. Available at: <http://www.sacbee.com/2012/04/28/4450678/the-killing-agency-wildlife-services.html#storylink=cpy>

<sup>13</sup> <http://www.cnps.org/cnps/rareplants/inventory/guidelines.php> and [http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols\\_for\\_Surveying\\_and\\_Evaluating\\_Impacts.pdf](http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf)

<sup>14</sup> <http://www.cnps.org/cnps/archive/collecting.php>

<sup>15</sup> [http://www.cnps.org/cnps/vegetation/manual\\_2ed.php](http://www.cnps.org/cnps/vegetation/manual_2ed.php)

<sup>16</sup> [http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols\\_for\\_Surveying\\_and\\_Evaluating\\_Impacts.pdf](http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/Protocols_for_Surveying_and_Evaluating_Impacts.pdf)

particularly dry years many plants that are in fact on-site may not be apparent during single season surveys.

In order to comply with NEPA, the Forest Service needs to perform a **site-specific** review and analysis of the effects of the proposed action and alternatives on all sensitive plant and animal species that occur in the project action area. The Forest Service must ensure that adequate safeguards are in place to protect these species and communities and that any impacts are adequately mitigated.

### ***Riparian Areas, Springs, and Meadows***

The entire allotment consists of two meadows. At least one, and possibly both, is habitat for mountain yellow-legged frogs. Therefore, the 2004 SNFPA Riparian S&G #115 applies and the Ranger District needs to complete a Stream Condition Inventory:

#### *Standards and Guidelines Associated with RCO #4 115:*

As appropriate, assess and document aquatic conditions following the Regional Stream Condition Inventory protocol prior to implementing ground disturbing activities within suitable habitat for California red-legged frog, Cascades frog, Yosemite toad, foothill and mountain yellow-legged frogs, and northern leopard frog.  
2004 SNFPA ROD at 65.

The NEPA documents should include maps showing all riparian areas, springs, wet and dry meadows, and other special aquatic features, and developed waters.

### ***Cumulative Watershed Effects & Soils***

The Forest should conduct a cumulative watershed effects (“CWE”) analysis for the watersheds in the project area and should present this data in the NEPA documents. Please also disclose the percent of equivalent roaded acres in the watershed, the threshold of concern, the natural suitability index, and how the allotments (combined with both past and anticipated future projects on both private and public land) will impact these key indices. Please also discuss the measures that will be taken to eliminate or reduce these effects. Describe the condition of the watersheds in terms of CWE, ownership patterns, land disturbance history, sensitive habitat, and other issues. In addition, please disclose when, and how many, surveys have been conducted in these watersheds and whether or not these field surveys suggested upgrading the risk of cumulative watershed effects in the affected watersheds. We also request that you consider the cumulative impacts of past, present, and future projects (including those on private land) within these watersheds and discuss ways to minimize or eliminate these impacts.

Livestock grazing in high elevation settings raises both local and regional water quality issues. Cattle grazing on both federal and non-federal lands in the Sierra Nevada pose a threat to the overall water quality (Derlet *et al.*, 2010). Manure from cattle is washed into lakes and streams or directly deposited into bodies of water. This pollutes the watershed by introducing harmful microorganisms, and also provides rate-limiting substances such as phosphates and nitrates that stimulate algae overgrowth. This may directly impact sensitive aquatic species such as fish and anuran larvae. Purifying the water after it flows downstream to be fit for domestic use is

become increasingly more costly, and compounded by increasing surface water temperatures, and potential for poisonous toxins released by algae blooms. Please consider these direct, indirect and cumulative impacts to water quality in the NEPA documents.

Primary grazing on erosive soils of up to 40% slope can lead to massive erosion and sediment flows into streams, which will harm the fisheries habitats, fish, and aquatic invertebrates in these habitats. The environmental review should consider grazing impacts to all soils on the allotments whether these are in primary, secondary, or incidental use areas.

### ***Cultural Resources***

Livestock grazing may have profound harmful impacts to archeological resources and cultural sites (Broadhead, 1999<sup>17</sup>; Osborn *et al.*, 1987<sup>18</sup>). Livestock, especially cattle, are known to impact archeological and cultural sites through a number of mechanisms including mechanical or physical impacts such as trampling, wallowing, and rubbing, dislodging and crushing artifacts; chemical impacts resulting from urine and feces; and, erosion impacts.

The NEPA analysis should explain how much of the project area has been surveyed for cultural resources, review the existing inventory of cultural resources, and analyze the effects of each alternative on these. It should identify specific modifications to grazing management that will avoid and protect any irreplaceable resources, and provide specific monitoring protocols and time-tables. It should explain how LRMP direction has been implemented in the project area.

### ***Invasive Species***

Livestock grazing may change the composition, function and structure of upland native plant communities, disrupt the process of succession, and alter fire regimes. The NEPA documents must include a current inventory of invasive species and noxious weeds on the allotment, surrounding area, and the prior locations of the cattle that are trucked onto the allotment. The effects of the proposed action and each alternative on the spread and establishment of noxious weeds must be fully analyzed. The cumulative impacts of past, current and future cattle grazing on the spread and establishment of invasive species must be fully analyzed. The environmental assessment should fully review these impacts and analyze the relationship between domestic livestock grazing and fire risk on these allotments.

### ***Inventoried Roadless Areas***

Part of Taylor lies within the Domeland Addition inventoried roadless area (“IRA”). Federal appeal courts have recently upheld both the 2001 Roadless Rule and the 2006 State Petitions Rule.

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<sup>17</sup> Broadhead, W. 1999. Cattle, Control, and Conservation. *Cultural Resource Management*, 22: 31-32.

<sup>18</sup> Osborn, A., Vetter, S., Hartley, R., Walsh, L. and Brown, J. 1987. Impacts of Domestic Livestock Grazing on the Archeological Resources of Capitol Reef National Park, Utah, pp. 1-136: Midwest Archeological Center Occasional Studies in Anthropology.

The Forest must take a hard look at the effects of the proposed action and other alternatives on the Inventoried Roadless Area's roadless character and wilderness values. The analysis should evaluate the impacts of any proposed construction as well as impacts from future livestock use. Please note that "roadless character" as defined in the Roadless Rule (36 CFR § 294.11) includes:

- (1) Quality of undisturbed soil, water, and air;
- (2) Diversity of plant and animal communities;
- (3) Habitat for threatened, endangered, proposed, candidate, and sensitive species and for those species dependent on large, undisturbed areas of land;
- (4) Primitive, semi-primitive nonmotorized and semi-primitive motorized classes of dispersed recreation;
- (5) Natural appearing landscapes with high scenic values;
- (6) Traditional cultural properties and sacred sites;
- (7) Other locally identified unique characteristics.

The Forest Service should review and explain its management guidelines for this IRA and explain how each alternative reviewed in the NEPA documents is compatible with maintaining roadless area qualities and values.

### ***Recreation***

According to the scoping letter, there have been conflicts with recreational users and livestock or livestock infrastructure. Please explain this in the NEPA documents. The EA should consider the impacts of livestock, fences and other equipment associated with livestock production on human recreation and recreational experiences. This includes impairment of the visual and esthetic experience, water quality issues, fear of encounters by hikers, and disturbance of wildlife and wildlife viewing by the presence of domestic livestock and range improvements, and impacts to hunting.

### ***Climate Change***

As with the rest of the planet, land and habitats on Sequoia National Forest are undergoing adaptation to climate change, which will affect the distribution and diversity of the species on the landscape<sup>19</sup>. In the western United States, both the frequency of heavy precipitation events and the frequency of periods of drought have increased over the past century (Christensen *et al.*, Regional Climate Projections, IPCC Fourth Assessment<sup>20</sup>).

The Forest Service must evaluate the proposed decision in the context of climate change as both a baseline issue and a cumulative impact to the resources. Including such an analysis is required by the Forest Service's own policy. See U.S. Forest Service, Climate Change Considerations in Project Level NEPA Analysis, memorandum from Forest Service Chief Abigail Kimbell dated January 13, 2009 ("*This document provides initial Forest Service*

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<sup>19</sup> <http://www.epa.gov/wed/pages/projects/globalclimatechange/Vegetationredistribution.pdf>

<sup>20</sup> <http://www.ipcc.ch/pdf/assessment-report/ar4/wg1/ar4-wg1-chapter11.pdf>

*guidance on how to consider climate change in project-level National Environmental Policy Act (NEPA) analysis and documentation.”)*

The livestock sector contributes a larger share of carbon emissions than does transport (Steinfeld *et al.*, 2010<sup>21</sup>). The environmental analysis should document the expected greenhouse gas emissions from the project for each alternative over the ten-year life of the permit, and the contribution this project will make to overall greenhouse gas emissions on Sequoia National Forest that contribute to global warming.

The NEPA documents should review the changes that are likely to occur in the project area due to global climate change over the 10-year period of the proposed permit. While uncertainties remain regarding the timing and extent of impacts from climate change, modeling indicates that on average, California will likely experience higher temperatures in all seasons; longer dry periods; heavy precipitation events; more frequent droughts; and increased wildfire risk. These changes will affect the landscape of project area, especially riparian and water resources and the species that depend on them as well as the amount and availability of forage. Landscapes that are less fragmented provide greater opportunity for species to shift ranges without being blocked (Opdam and Wascher, 2004<sup>22</sup>). Fragmentation of the landscape through vegetation removal or grazing infrastructure such as fencing exacerbates the challenges that species are already dealing with in trying to adapt to a changing climatic regime. Removing or reducing livestock would both alleviate a widely recognized and long-term stressor and make these public lands less susceptible to the effects of climate change (Beschta *et al.*, 2012<sup>23</sup>).

### ***Economic Analysis***

The NEPA analysis should consider the contribution that recreational uses of these lands make to the economic and social wellbeing of people by providing opportunities for economic diversity for communities that depend on range resources (FSM 2202.14).

The Ranger District should consider the economic benefit of eliminating livestock grazing to the local community and to the many citizens of southern California who recreate in the area. The economic analysis should include considering the benefits to the local community of having unimpaired wilderness quality lands and water with improved hunting and recreational opportunities that would be engendered by the removal of cattle and range developments. The forage consumed by livestock should be valued in terms of the value of deer and other wildlife species that are displaced, and the loss of important revenue generating hunting and wildlife watching opportunities (USFWS *et al.*, 2011<sup>24</sup>).

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<sup>21</sup> Steinfeld, H., Gerber, P., Wassenaar, T., Castel, V., Rosales, M., de Haan, C. 2006. Livestock's long shadow Environmental issues and options. 390 pp. Food and Agriculture Organization of the United Nations. Online at: <ftp://ftp.fao.org/docrep/fao/010/a0701e/a0701e00.pdf>

<sup>22</sup> Opdam, O. and Wascher, D. 2004. Climate change meets habitat fragmentation: linking landscape and biogeographical scale levels in research and conservation. *Biological Conservation*, 117: 285-29.

<sup>23</sup> Beschta, R. L., DellaSala, D. A., Donahue, D. L., Rhodes, J. J., Karr, J. R. O'Brien, M. H., Fleischner, T. L. and Deacon-Williams, C. 2012. Adapting to climate change on western public lands: addressing the impacts of domestic, wild and feral ungulates. *Environmental Management*, DOI 10.1007/s00267-012-9964-9

<sup>24</sup> U.S. Department of the Interior, U.S. Fish and Wildlife Service, and U.S. Department of Commerce, U.S. Census Bureau. 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. 122 pp. including app.

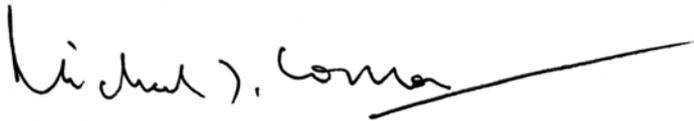
## *Cumulative Impacts*

The Ranger District needs to consider the cumulative impacts of all grazing allotments and other projects on the Sequoia National Forest on all sensitive resources, so that it can analyze the contribution that this grazing allotment projects makes to these cumulative impacts. This must be done so that all the sensitive resources in the project area are protected against the impacts of incremental grazing decisions.

Please keep Western Watersheds Project, Sequoia ForestKeeper and the Kern-Kaweah Chapter of the Sierra Club informed of all further substantive stages in the NEPA process for this action and document in the record our involvement as members of the “interested public” for this and related projects. Also, we request that the Ranger District post copies of the various specialist’s reports on the District webpage as these become available.

Thank you again for this opportunity to assist the Forest Service by providing scoping comments for your review of the Taylor/Long Allotment. We have mailed a CD to the District Office with copies of literature we cited that was not available online. If you have any questions on our comments please feel free to contact me by telephone (818 345-0425) or by email at <mjconnor@westernwatersheds.org>.

Sincerely,

A handwritten signature in black ink that reads "Michael J. Connor". The signature is written in a cursive style and is underlined with a single horizontal line.

Michael J. Connor, Ph.D.  
California Director  
WESTERN WATERSHEDS PROJECT  
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Reseda, CA 91337-2364  
(818) 345-0425  
<mjconnor@westernwatersheds.org>

A handwritten signature in black ink that reads "Ara Marderosian". The signature is written in a cursive style.

Ara Marderosian, Executive Director  
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