

2012 INFORMATION NEEDS ASSESSMENT ABSAROKA BEARTOOTH WILDERNESS



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INTRODUCTION

The United States Congress designated the Absaroka-Beartooth Wilderness ([map](#)) in 1978 and it now has a total of [943,626 acres](#). [Montana](#) contains approximately 920,343 acres. [Wyoming](#) contains approximately 23,283 acres. It is managed by the Forest Service.

Description

The Absaroka Beartooth Wilderness is located in south central Montana, with a small portion in northern Wyoming, just north of Yellowstone National Park. The Wilderness is home to Montana's tallest peak, the steep rocky mass known as Granite Peak. At 12,799 feet, Granite Peak towers above the Beartooth Plateau. It anchors the Beartooth Range, which stands higher and more rugged than the Absarokas, with many peaks exceeding 12,000 feet (one of them resembles a bear's tooth).

The Beartooth portion of the AB is dominated by vast, treeless plateaus, which fall off sharply into surrounding canyons, much like the Alaska Range. Lakes are much more numerous in Beartooth than in the nearby Absarokas. The lakes are small and tucked high into glacial cirques. The Crow Indians called themselves Absarokas, hence the name of the mountain range that, along with Beartooth, characterizes this Wilderness. Active glaciers, sweeping tundra plateaus, deep canyons, sparkling streams, and hundreds of alpine lakes combine to make this one of the most outstanding Wilderness areas in America.

The Absarokas, unlike Beartooth, have ample vegetative cover, including dense forests and broad mountain meadows crossed by meandering streams. Mt. Cowan is the tallest peak in the Absaroka Range, topping out at 11,206 feet. Bighorn sheep and mountain goats roam about the mostly rugged country, along with elk, deer, moose, marmots, coyotes, black bears, wolves and members of a substantial grizzly population. The harsher Beartooths accommodate far fewer animals. Trout reside in many of the lakes and streams in both ranges.

Adjoining Yellowstone National Park on the park's northern edge, this Wilderness extends down into Wyoming. More than 700 miles of hiking/stock trails provide access to this area. Both ranges offer opportunities to wander off-trail for an unsurpassed Wilderness experience. Wilderness pack trips have a long history in the area, often supported by outfitters. Only a relatively small portion of the extensive Absaroka-Beartooth Wilderness lies in Wyoming. The area is dominated by the high granitic alpine plateaus of the Beartooth Mountains, a starkly beautiful country of expansive views, hidden lakes among bald rocks, and wildly unpredictable weather. Cold and wind may strike any day of the year. Boulder-strewn Beartooth Plateau lies between 9,000 and 10,000 feet below bare crags and peaks streaked with red and yellow. The plateau is cut by deep canyons and carpeted in wildflowers when the snow melts in early July. This is an extremely fragile environment, with large expanses of tundra habitats, rare to the lower 48 states.

The lakes are rich in trout, and the air teems with mosquitoes in summer. Wildlife is abundant in the forested valleys: moose, elk, and mule deer live here with grizzly bears. On barren ridges you'll see little except pikas and the occasional mountain goat and bighorn sheep. An extensive network of trails is often under snow until early July.

This Information Needs Assessment (INA) is a structured approach for determining data collection, storage and analysis needs by first identifying and prioritizing local management requirements in the Absaroka Beartooth Wilderness. The goal of this process is to ensure that information is available, of sufficient quality and in the right format, to support key decisions related to wilderness stewardship.

The initial effort to kick off this interdisciplinary effort was supported by a unit workshop facilitated by the Art Carhart Training center and Chris Ryan of the Northern Region in 2010. Mary Erickson – Custer and Gallatin Forest Supervisor encouraged all Absaroka Beartooth Coordinating Committee members, specialists, and local partners including biologists from Mt Fish Wildlife and Parks to attend the kick off session. The Absaroka Beartooth Coordination Committee then took the prioritized information on issues and threats developed at that workshop and compared those results to existing monitoring data. The result was this list of data “gaps” – some of which have since been addressed in the several years in between. The Unit Workshop issue identification exercise is summarized in the “Threats Matrix” table I. The individual questions were then more thoroughly articulated in the attached worksheets.

The coordination committee intends for this INA to be a living document, which will periodically be revisited as we accomplish certain items, new issues develop and we move closer to revising the AB Plan. The original draft of this document was developed in 2010, and revisited and updated in 2012.

I. WILDERNESS THREATS MATRIX - Ranking: 1 = low, 3 = highest; blue = high and yellow = highest (dot vote 2/10)

ATTRIBUTES OF WILDERNESS CHARACTER			Fish & Wildlife	Recreation	Special Uses	Veg. Mngmt.	Trails & Facilities	Fire	Heritage	Climate Change
	Untrammeled Quality	Untrammeled Wilderness	2	1	1	2	0	3	0	
	Natural Quality	Air	0	0	0	0	0	2	0	
		Aquatic Systems	2	2	1	1	2	2	0	
		Soils	0	2	1	1	1	2	0	
		Vegetation	1	2	1	3	2	3	0	
		Animals	2	1	1	2	1	1	0	
		Ecosystems & Landscapes	2	1	1	3	1	3	0	
	Undeveloped Quality	Developments	0	3	3	0	2	0	1	
		Cultural Resources	0	3	2	2	2	2	N/A	
"Outstanding Opportunities" Quality	Opportunities for Solitude	3	3	3	2	3	2	0		
	Opportunities for Primitive Recreation	1	2	2	1	1	1	0		

Wilderness Information Needs Assessment Worksheet

Priority Rank:	1
Wilderness Name:	Absaroka Beartooth Wilderness

Issue / Threat:	Recreation
Attributes Affected:	Opportunities for Solitude
Question:	What are the existing opportunities for solitude? Where have opportunities for solitude been degraded and are out of “standard” with proposed AB LAC standards?
Data Collection Needs:	<ol style="list-style-type: none"> 1) Number of encounters per observation day by opportunity class (per the 2012 encounters protocol). 2) Number of occupied camps within site or sound (per the 2012 encounters protocol). 3) Number of Wilderness visitors in select locations – select trail samples (counters) – Beartooth RD project. 4) Campsite condition, density and trend data (done) 5) AB specific NVUM data – baseline and 5 year trends (done)
Data Collection Protocol:	<ol style="list-style-type: none"> 1) AB Trail Encounters Monitoring Protocol - 2012. 2) AB Campsite Occupancy Collection Protocol - 2012. 3) Trail Counter Protocol (need to develop? - Beartooth project) 4) AB campsite data collection protocol 5) NVUM wilderness specific data per national protocol.
Database:	<ol style="list-style-type: none"> 1) AB access db for encounters developed in 2012 2) AB access db for camp encounters developed in 2012 3) Database needs to be developed for trail counter data – spreadsheets on Beartooth? 4) AB access db for campsites – archived on the “O” drive. – Gallatin maintains. 5) NRIS – national data storage protocol
Analysis Protocol:	Tier to Troy Hall/other recent social research paper for encounters analysis. Olwert/Tyers analysis of campsite data (complete through 2010); NVUM data trends every 5 years.
Information Products:	<ul style="list-style-type: none"> • Maps of travel zones indicating whether standards are met or exceeded. • Graph showing how many travel zones exceeded standard versus total number of zones. • Table indicating total number of visitors and relationship to past years.

Information Use:	AB Plan Revision, monitoring opportunities for solitude, meeting various elements of the 10WSC.
Other Program Areas Involved:	N/A
Cost Estimate:	NFRW - \$ 10 – 20,000 annually (depending on whether segments are inventoried 2 weekdays and 2 weekends, or 4.
Other:	

Wilderness Information Needs Assessment Worksheet

Priority Rank:	1
Wilderness Name:	ABSAROKA BEARTOOTH WILDERNESS

Issue / Threat:	Special Uses: Outfitter/Guides
Attributes Affected:	Opportunities for Solitude/ extent necessary per the Act.
Question:	How do outfitter/guide assigned camps affect solitude? How does outfitted use affect solitude? To what extent are they necessary to serve the purposes of the Wilderness Act?
Data Collection Needs:	Numbers, types, time of year, and location. Requests for new use.
Data Collection Protocol:	Tier to emerging national direction for extent necessary/needs assessment and capacity.
Database:	AB Wilderness LAC campsite access db; Actual use spreadsheets from each RD; collect data on base and progressive camps (base camps completed 2012)
Analysis Protocol:	Need to develop extent necessary, needs assessment and carrying capacity analysis protocols. Tier to emerging national direction and work completed on Beartooth RD, and Shoshone NF in 2012.
Information Products:	Updated outfitter/guide actual use analysis, completed needs assessment, and capacity analysis that tiers to the revised AB plan.
Information Use:	<ol style="list-style-type: none"> 1. Answer to queries regarding new outfitter requests 2. Provide foundation for new use NEPA and or prospectus. 3. AB Plan Revision – set “extent necessary” and sideboards for any additional use or reductions in use.
Other Program Areas Involved:	None
Cost Estimate:	NFRW – or FDDS42 - project is estimated to take approximately 2 months for the remainder of the AB - \$16,000 estimated cost.

Other:	
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Wilderness Information Needs Assessment Worksheet

Priority Rank:	1
Wilderness Name:	Absaroka Beartooth Wilderness

Issue / Threat:	Invasive Plants
Attributes Affected:	Natural Quality: Ecosystems/Landscapes
Question:	What is the existing condition and trend of invasive plants (noxious weeds) in the AB? Priority 1 would be noxious weeds, priority 2 other invasive plants like timothy, smooth brome, etc.
Data Collection Needs:	<ol style="list-style-type: none"> 1. Inventory – continual update of existing inventory 2. Treatment Records – post treatment monitoring 3. Monitoring known infestations, and sampling likely spread areas.
Data Collection Protocol:	AB 2006 Weeds Plan - Update as necessary with priority species list and updated inventory protocols.
Database:	Inventory data stored spatially in NRM-NRIS TESP, Invasive Species Database, Treatment and post treatment data stored in FACTS Database
Analysis Protocol:	To be determined.
Information Products:	<ol style="list-style-type: none"> 1. Map of distribution by species. 2. Areas of native vegetation displaced. 3. Map of treated acres by year. 4. Percent of total acres treated yearly. 5. Map of distribution by year.
Information Use:	AB Plan Revision, 10 year challenge target, developing and informing annual weed action plans and strategies.
Other Program Areas Involved:	AB CC to solicit coordination from invasive plant folks: Susan Lamont, Kim Reid
Cost Estimate:	NFRR, NFRW, Sikes Act grants, grant support from ABWF. \$5,000 – 10,000 annually

Other:	
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Wilderness Information Needs Assessment Worksheet

Priority Rank:	3
Wilderness Name:	ABSAROKA BEARTOOTH WILDERNESS

Issue / Threat:	Recreational livestock impacts.
Attributes Affected:	Natural quality, undeveloped quality, sense of remoteness.
Question:	Are effects from grazing and holding recreational livestock affecting campsite condition and vegetation composition/integrity? Are travel plan mitigations already employed effective?
Data Collection Needs:	1) Campsite condition and trend at stock camps. Camp trends in stock closure areas. 2) Rangeland Health Assessment at key “indicator” locations. 3) Presence and accretion of user created routes attributable to stock use.
Data Collection Protocol:	1) AB campsite protocol (current/existing) 2) Marianne Klein protocol developed for Lee Metcalf in 2012 or National Rangeland Health Assessment protocol. Establish sample plot locations at strategically chosen locations. 3) GPSd user created route data in areas of concern – develop ARC layer. Develop periodic analysis – 10 year re-inventory.
Database:	1) AB campsite access db 2) NRM-NRIS, and/or site specific reports. 3) ARC map spatial layer of user created routes
Analysis Protocol:	1) Olwert/Tyers analysis of AB campsite data (current) 2) TBD 3) Simple spatial comparison of accretion of routes.
Information Products:	<ul style="list-style-type: none"> • Identify campsites with out of standard condition classes that are “stock” sites. • Map of areas with undue grazing impacts • Analytical outputs regarding “capacity” for overnight stock holding at key locations.
Information Use:	<ul style="list-style-type: none"> • AB Plan Revision – specifically identifying areas of possible restriction for grazing. • Outfitter and Guide carrying capacity analysis, and operating plan refinements. • Develop annual POW for wilderness rangers
Other Program Areas Involved:	<ul style="list-style-type: none"> • Range Specialists – Kim Reid, Ecologist Jeff DiBennideto

Cost Estimate:	NFIM, NFRR or NFRW. Grant possibilities. Gross estimate of costs include establishing initial plot locations, storing data, and creating analytical outputs. \$15,000
Other:	

Wilderness Information Needs Assessment Worksheet

Priority Rank:	1
Wilderness Name:	ABSAROKA BEARTOOTH WILDERNESS

Issue / Threat:	Whitebark Pine (WBP) – loss of species from blister rust (an invasive spp.) and mountain pine beetle. Potential cultural/manipulative treatments to protect the species. Shifts in distribution and abundance due to climate change.
Attributes Affected:	Naturalness, untrammeled quality
Question:	What effect will the occurring and predicted loss of WBP have on naturally functioning ecosystems in the AB? What potential effect will “theoretically proposed” cultural treatments have on naturalness and untrammeled qualities of wilderness?
Data Collection Needs:	<ol style="list-style-type: none"> 1) Condition and trend of WBP in the AB including mortality. 2) Assessment of AB WBP populations in relation to GYA decline of species. 3) What is the extent of blister rust infection within the regeneration layer of whitebark pine within the AB? 4) Is WBP naturally re-establishing in burn areas (Storm Creek (1988), Shepherd Mountain (1996), Willie (?), Cascade (2008) etc.
Data Collection Protocol:	<ol style="list-style-type: none"> 1) Tyers WBP stand condition surveys (data may be unavailable) and GYCC inventory data/protocol. 2) Mapping, R1 Vmap Classification and mid-level mapping 3-4) GYCC whitebark pine distribution mapping protocol Forest Health and Protection insect detection flights GYCC ground truth protocols for mapping products
Database:	<ol style="list-style-type: none"> 1) Tyers – AB WBP data (what db format?) 2) GYCC Inventory and Monitoring data 3) FIA data and R1 Summary Database 4) GYCC geo-spatial data for whitebark pine distribution, R1 Vmap, GYCC Whitebark pine mortality/change detection. 5) GYA monitoring network (NPS) blister rust, mortality and recruitment transects (16 in AB right now)
Analysis Protocol:	<ol style="list-style-type: none"> 1) GYCC Inventory and Monitoring protocol for the GYA 2) R1 Summary Database and analysis report summaries 3) TBD
Information Products:	<ul style="list-style-type: none"> • Maps of WBP with condition and trend • Identify cultural treatments being proposed and where • Relationship of WBP in the AB with the overall health and trend of WBP populations in the GYA.

Information Use:	<ul style="list-style-type: none"> • AB Plan Revision and development of constraints/sideboards for WBP cultural treatments in wilderness • Inform potential minimum decision requirements guide work for potential cultural treatment proposals.
Other Program Areas Involved:	<ul style="list-style-type: none"> • Biologists, silviculturists and botanists/ecologists – Jodie Canfield, Jeff DiBennideto, Keith Konen, Dennis Sandbak • GYCC Whitebark pine sub-committee –Karl Biermyer • NPS – GYA Monitoring Network – Rob Daley
Cost Estimate:	Currently the GYCC subcommittee would provide most of this data at no (direct) cost to AB CC. Some local GIS/analysis costs would be incurred - \$5,000 estimate.
Other:	

Wilderness Information Needs Assessment Worksheet

Priority Rank:	1
Wilderness Name:	ABSAROKA BEARTOOTH WILDERNESS

Issue / Threat:	Fish stocking - relative to accreting recreation impacts, proposed LAC opportunity class boundaries, and naturalness of lake/stream ecosystems.
Attributes Affected:	Naturalness, opportunities for solitude.
Question:	Has the introduction of fish negatively affected naturally functioning ecosystems in riparian areas/lakes including other aquatic species? Are lakes being stocked that weren't prior to 1978? Are campsites adjacent to stocked lakes declining in condition? Are opportunities for solitude declining near popular stocked lakes? What role will aquatic systems in the AB play as potential refugia for native Yellowstone Cutthroat Trout (YCT) in relation to emerging climate change influences?
Data Collection Needs:	<ol style="list-style-type: none"> 1) # & location of lakes stocked—past and present (data complete – MT FWP db) - self sustaining vs. recurrent stocking 2) Campsite condition/social trailing at stocked lakes (data/analysis complete) 3) Campsite occupancy at stocked lakes 4) Aquatic species (amphibians) presence, abundance, and habitat suitability data 5) Priority areas for potential future refugia for YCT identified
Data Collection Protocol:	<ol style="list-style-type: none"> 1) MT FWP lake stocking data collection protocol. For each lake, review historic and current stocking records and population monitoring data to determine whether lakes were stocked before 1978 and what stocking frequency is required to maintain population objectives 2) AB campsite data protocol 3) AB occupied campsite encounter protocol (2012) 4) Aquatic species presence, abundance, and habitat suitability using established methods 5) YCT Inventory using established methods. Fisheries managers will utilize existing information and collect data as needed (using established protocols) to identify refugia for YCT in the AB Wilderness necessary for meeting recovery goals.
Database:	<ol style="list-style-type: none"> 1) MT & WY FWP historic stocking records and db 2) AB campsite access db 3) AB campsite encounter access db 4) Montana Natural Heritage Program db 5) Range-Wide Status Assessment for YCT (Yellowstone Cutthroat Assessment db), Montana Fisheries Information System (MFISH), and local databases (FSSTREAM).

Analysis Protocol:	<ol style="list-style-type: none"> 1. Display initial date of stocking and optimal stocking frequency by lake. 2. AB LAC - Olwert/Tyers/ Wallace analysis 3. Campsite occupancy data summaries per recent monitoring – method TBD 4. For each aquatic species of interest, use standard data analysis methods to evaluate the influence of fish stocking on aquatic species presence and abundance taking into account fish species, fish abundance (density), and habitat suitability. 5. Formal review of data by fisheries managers.
Information Products:	<ul style="list-style-type: none"> • Map of stocked lakes – with historic context. • Map of stocked lakes color coded by stocking frequency. • Identification of stocked lakes with declining campsite condition • Histograms and maps showing aquatic species distribution and influence of fish stocking relative to habitat suitability. • Maps of potential “refugia” stream reaches/lake basins for future YCT conservation work – products of YCT Conservation Strategy and meetings of fisheries managers.
Information Use:	<ul style="list-style-type: none"> • AB Plan Revision and refinement of opportunity class maps and goals, objectives and standards regarding fisheries issues. • Open discussion with MT Dept Fish Wildlife and Parks
Other Program Areas Involved:	<ul style="list-style-type: none"> • Fisheries biologists • MT Dept Fish Wildlife and Parks • Wildlife Conservation Society • Others?
Cost Estimate:	Unknown – need to better define exact products, and who will provide the analysis.
Other:	

Appendix C - Wilderness Information Needs Assessment Work Plan

Fiscal Year	Priority Rank	Threat / Attribute Affected	Specific Work Item(s)	Cost Estimate	Funding Sources	Timing / Dependencies	Responsibilities
2013	High (3)	Recreation/opportunities for solitude	Encounters monitoring	\$10 – 20,000	NFRW/NFXN	Field season. Grant funding	AB CC
2013	High (3)	Recreation/opportunities for solitude	Encounters data entry and analysis	\$7,000	NFRW	Winter	Urie/Schlenker
2013	High (3)	Recreation/OG/opportunities for solitude	Needs Assessment/extent necessary analysis	\$ 16,000	NFRW/FDDS	Detailer/resource clerk support	Schlenker
2013+	High (3)	Invasive plants/natural	Ongoing inventory	\$10,000	NFIM/NFXN	Grant funding	AB CC
2014	Medium	Recreation/natural, opps for solitude	Recreational livestock grazing assessment	\$15,000	NFRW/NFIM NFXN	Grant funding	AB CC
201?	Medium	Non-native fish/natural	Re-validate existing stocking data	\$2500	NFRW/NFRR	Detailer potential	Schlenker/Sestrich
201?	Medium	Non-native fish/natural	Develop amphib/barren lake inventory/sample protocol	\$5000?	NFRR/NFXN		Schlenker/Sestrich in coop w MFWP
201?	Medium	Whitebark Pine/natural	Evaluate historic AB transect data. Reinventory?	\$15,000?	NFXN	Grant Funding	Schlenker/Tyers
201?	Medium	Whitebark Pine/natural	Evaluate existing GYCC data and summarize for AB	Indirect	GYCC Funding		Schlenker/Daley Dibennideto