Yellowstone Ecosystem Subcommittee Backcountry Recreation & Hunting Conflict Working Group: Accomplishment Report

October 13, 2022

Authors:

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Background: At the direction of the Interagency Grizzly Bear Committee (IGBC), a technical team designated by the Yellowstone Ecosystem Subcommittee (YES) developed a report in 2020 that evaluated the status and mortality trends for the GYE grizzly bear population. The report included recommendations for actions that could be taken to minimize grizzly bear mortalities and human-bear conflicts specific to five topics: 1) backcountry recreation and hunting-related conflicts; 2) front county conflicts and community planning; 3) efficacy of information and education efforts; 4) livestock conflicts and livestock producer outreach; and 5) targeted community outreach in grizzly bear expansion areas.

In 2021, three working groups were formed to address the recommendations specific to backcountry recreation and hunting related conflicts, front country conflicts and community planning, and livestock conflicts and livestock producer outreach. The backcountry and hunting-related conflicts working group was led by Forest Supervisor Lisa Timchak. The group's efforts were focused on actions developed to address the recommendations specific to backcountry and hunting-related conflicts from the 2020 report, which were:

Highest	Increase the availability of food and game carcass storage infrastructure in backcountry campsites		
Moderate	Training for outfitters and guides- new and safer hunting practices		
Moderate	Funding for outreach programs, such as bear spray giveaways		
Moderate	Standardize agency policy and message for providing backcountry attractant storage (and		
	associated attractant storage orders).		
Lowest	Standardize and simplify information signs		

The working group evaluated these recommendations and developed action items to address them. These included:

Food Storage Order Standardization: The first action item was developing a consistent Food Storage Order (FSO) for the National Forests in the Greater Yellowstone Ecosystem (GYE). The GYE National Forests have had FSO's in place for several decades. In 1990, a FSO was implemented that covered portions of all the GYE National Forests. However, over time the GYE Forests implemented orders unique to their jurisdictions and inconsistencies in requirements developed. This creates confusion and compliance issues for visitors who often cross jurisdictional boundaries during their visits to the GYE. The IGBC recognized this issue in about 2018 and discussed standardizing Food Storage Order requirements within and across grizzly bear recovery areas. Although standardizing FSO's across grizzly bear recovery areas has been difficult to achieve, the YES recognized that this effort afforded an ideal opportunity to achieve standardization of FSO's for the GYE National Forests. The GYE National Parks opted to not be included in this effort because substantive differences in visitor uses occurring in the National Parks and National Forests predispose different FSO requirements. For example, requirements for storage of animal carcasses are an important part of FSO's for National Forests because hunting is a commonly occurring activity. In contrast, hunting is not allowed in Yellowstone National Park and there is not a need to specify carcass storage requirements for visitors there.

A technical group was designated to work with line officers and staff from the five National Forests, Forest Service, Law Enforcement & Investigations (LE&I) personnel, and the Office of General Counsel for the three Forest Regions involved to develop a new FSO that would be adopted by all the GYE National Forests. The technical group was Dan Tyers (GYE Grizzly Bear Habitat Coordinator), Jim Wilder (Forest Wildlife Biologist, Bridger-Teton National Forest), and Andrew Pils (Forest Wildlife Biologist, Shoshone National Forest). The group worked diligently during 2021 and into early 2022 to develop a new FSO that was agreeable to the GYE Forest Supervisors and LE&I personnel. The resulting product addressed a primary discrepancy in GYE FSO requirements by including electric fence (with some conditions) as an approved storage method, where previously only the FSO's for the National Forests in Montana allowed this. It also resolved discrepancies in requirements for storing animal carcasses in proximity to Forest Service roads and trails, and campsites. A new format was adopted that is more concise and is also consistent with current OGC standards for Special Orders. The changes in the new order move them much closer to the FSO's for the National Forests in the Northern Continental Divide Ecosystem as well, which has been a long-standing goal for IGBC.

The new order was adopted by the Beaverhead-Deerlodge National Forest in April 2022 (Appendix A), and it's adoption by the Custer Gallatin National Forest is pending. Unfortunately, the Shoshone, Bridger-Teton, and Caribou-Targhee National Forests have been directed to defer signature of the new orders until potential conflicts with on-going litigation are resolved. The timeline for that is currently unknown, but staff work has largely been completed so these forests may proceed with signing the new orders once clearance is given.

Guidelines for Food Storage Infrastructure in Backcountry Areas: The 2020 report to YES recognized that while there was broad support amongst the public and agencies for increasing the availability of backcountry food and game carcass storage infrastructure, achieving this would be complicated by the lack of a consistent approach to food storage infrastructure within designated wilderness areas. Therefore, the backcountry working group decided to first address the recommendation to improve consistency in agency practices for providing backcountry food and carcass storage structures. Because the need and appetite for backcountry food storage infrastructure as well as the capacity for installing and maintaining it varies across GYE National Forest units, the working group adopted a non-prescriptive approach to addressing this recommendation. Dan Tyers and Andrew Pils were tasked with developing guidelines that could be used by the individual National Forest units for their backcountry food storage structure programs. The resulting document (Appendix B) was produced in 2021 and addresses the types of food storage structures appropriate for backcountry settings, considerations for installing food and carcass storage structures in wilderness and other site selection considerations, staff skills and resources needed for maintaining a program for backcountry food and carcass storage structures, special considerations for structures at outfitter camps, and structure inventory and maintenance considerations. National Forest units interested in adopting the subsequent recommendation from the 2020 report to increase the availability of food and carcass storage structures in the backcountry could use these guidelines. This document could also be used to demonstrate our approach to potential partners interested in collaborating with the Forest Service to improve backcountry food and game

carcass storage infrastructure. For example, in 2020 the Shoshone National Forest partnered with the Safari Club International Foundation to purchase and install food storage boxes in backcountry areas.

Improving Training for Outfitters & Guides: Several serious conflicts including the 2018 fatality of a hunting guide on the Bridger-Teton National Forest and the severe injury of a hunting guide and client on the Shoshone National Forest in 2017 highlighted the need for improved bear safety training for outfitters and guides in the GYE. The Wyoming Game & Fish Department, Bridger-Teton National Forest, and Shoshone National Forest, with funding from the Greater Yellowstone Coordinating Committee, partnered with the Wyoming Outfitter & Guides Association (WYOGA) to produce the "Hunting Safely in Grizzly Country" video (https://youtu.be/gujVtFO8mq4) in 2021. The video is a concise and credible source of bear safety information geared towards outfitter & guides but has applicability to anyone hunting in the GYE.

This working group evaluated ways of promoting the distribution of the WYOGA video. Links to the video have been added to agency websites, as well as the WYOGA website. Additionally, the Bridger-Teton and Shoshone National Forests added recommendations or requirements for the use of the video for outfitters and their employees as revisions to their outfitter & guide annual operating plans. The other GYE forests decided not to add these requirements or recommendations to their outfitters, and because annual operating plans because other training resources were available to their outfitters, and because they determined that recent conflict histories associated with outfitters & guides on their individual units didn't support these additions to annual operating plans.

Increase Funding for Outreach Programs, Including Bear Spray Giveaways: The 2020 report to YES recognized that agency budgets for public outreach were limited, and that increasing funding would be necessary to increase capacity for outreach efforts. An example cited in the report was bear spray giveaway events in which agencies distribute free cans of bear spray to the public to promote the use of bear spray by hunters and other recreationists. These events are often paired with other bear safety displays and presentations and have become popular forums for promoting the use of bear spray and bear safety practices. State agencies in Wyoming, Montana, and Idaho have all hosted these events in recent years.

Bear spray giveaway events are expensive, and state agencies have increased partnership efforts to continue funding these events. For example, in 2022 the Wyoming Game & Fish Department partnered with the Safari Club International Foundation and American Bear Foundation to host bear spray giveaway events in Lander, Cody, Jackson, and Pinedale. The Idaho Fish & Game Department and Caribou-Targhee National Forest have also recently partnered with the Idaho Fish & Wildlife Foundation, Rocky Mountain Elk Foundation, and Western Bear Foundation to sponsor a bear spray giveaway event in Island Park.

Appendix A: Food Storage Order for the Beaverhead-Deerlodge and Bitterroot National Forests



Order Number: # 02-00-22-02

UNITED STATES DEPARTMENT OF AGRICULTURE U.S. FOREST SERVICE BEAVERHEAD-DEERLODGE AND BITTERROOT NATIONAL FORESTS

Occupancy and Use Prohibitions

PROHIBITIONS

Pursuant to 16 U.S.C. § 551 and 36 C.F.R. § 261.50(a), the following acts are prohibited **annually from March 1 to December 1** on the National Forest System (NFS) lands within the Beaverhead-Deerlodge and Bitterroot National Forests, described further below and shown on the attached map incorporated into this Order as Exhibit A (the "Described Area").

- 1. Possessing or storing any food for human or animal consumption, refuse, or items that may have remnants or smell like food or refuse (including personal hygiene products, beverages, unburned food or garbage residue from fire pits or stoves, or empty food or beverage containers but excluding water or water containers, hay, or hay cubes without additives), unless these items are:
 - a. Attended by a person who is awake, alert, and within 100 feet and line-of-sight of the items;
 - b. Suspended at least 10 feet off the ground and at least four feet from any supporting tree or pole;
 - c. Stored in a container or using a method listed in the most current Interagency Grizzly Bear Committee Certified Bear-Resistant Products list or that has been approved under the IGBC's courtesy inspection program (non-commercial products made for personal use may be inspected and approved under that program). This includes electric fences that are installed properly and meet the design and minimum electrical output specifications on that list, and are tested for proper operation at least every 24 hours with a voltmeter; or
 - d. Stored in a closed vehicle, trailer, building, or facility constructed of solid, non-pliable material that, when secured, has no openings, hinges, lids, or coverings that would allow a bear to gain entry by breaking, bending, tearing, biting, or pulling with its claws (any windows must be closed). Horse or livestock trailers may not have any openings greater than 10 inches in two dimensions and must have any food, refuse, or animal carcasses stored more than three feet from any opening.* **36 C.F.R. §261.58(cc).**

*This Order refers to these methods collectively as "Forest Service-approved storage methods."

- 2. Possessing or storing any bird, fish, or other animal carcass or parts thereof (including livestock carcasses) that have not been prepared for human or animal consumption, unless these items are:
 - a. Being field dressed, transported, or prepared for eating;
 - b. Stored in accordance with Forest Service-approved storage methods and at least 100 yards from any known occupied camping area; or
 - c. Stored more than ¹/₄ mile (straight-line distance) from any known occupied camping area and more than 200 yards from any NFS Trail or Road. **36 C.F.R. §261.58(s).**
- 3. Camping within:
 - a. 100 yards of any known bird, fish, or other animal carcass or parts thereof (including livestock carcasses) stored in accordance with Forest Service-approved storage methods; or
 - b. ¹/₄ mile of any known bird, fish, or other animal carcass or parts thereof (including livestock carcasses) not stored in accordance with Forest Service-approved storage methods. **36 C.F.R. §261.58(e).**

EXEMPTIONS

Pursuant to 36 C.F.R. § 261.50(e), the following persons are exempt from this Order:

- 1. Persons with a special use authorization or other Forest Service authorization specifically exempting them from the effect of this Order.
- 2. Any Federal, State, or Tribal employee placing baits for research or management purposes as part of their official duties.

DESCRIBED AREA

All NFS lands within the Beaverhead-Deerlodge National Forest, except for the portion of the Butte Ranger District within the Elkhorn Mountain Range (east of Interstate Highway 15 and Montana State Highway 69), and all NFS lands within the portion of the Anaconda-Pintler Wilderness that is part of the Bitterroot National Forest.

PURPOSE

The purpose of this Order is to protect public safety and wildlife by minimizing human-bear interactions.

IMPLEMENTATION

- 1. This Order will be effective on <u>4/25/2022 at</u> <u>08:00</u> and shall remain in effect until December 31, 2026 at 24:00 or until rescinded, whichever occurs first.
- 2. A map identifying the Described Area is attached and made part of this Order as Exhibit A. For a digital version of the Order and Exhibit A, go to <u>Beaverhead-Deerlodge National Forest -</u> <u>Alerts & Notices (usda.gov)</u>
- 3. Unless otherwise defined in this Order, the terms in this Order are defined in accordance with 36 C.F.R. § 261.2. If there are terms in this Order that are not defined in the Order or in Forest Service regulations, their meaning is determined by their plain language definition.
- 4. A violation of the above prohibitions is punishable as a Class B misdemeanor by a fine of not more than \$5,000 for individuals and \$10,000 for organizations, or by imprisonment for not more than six months, or both. 16 U.S.C. § 551; 18 U.S.C. §§ 3559(a)(7), 3571(b)(6), (c)(6), and 3581(b)(7).
- 5. Further information regarding this Order may be obtained at the Beaverhead-Deerlodge Bitterroot National Forests Supervisor's Office in Dillon, MT, (406) 683-3900.
- 6. This Order supersedes any previous Orders prohibiting the same or similar acts in/on the same Described Area.

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Done at D	Villon	Montana	, this 25th	day of April
100			/	

LISA TIMCHAK Digitally signed by LISA TIMCHAK Date: 2022.04.22 12:22:00 -06'00'

Forest Supervisor Beaverhead-Deerlodge National Forest

Digitally signed by MATTHEW ANDERSON MATTHEW Date: 2022.04.25 08:38:36 -06'00' ANDERSON

Forest Supervisor Bitterroot National Forest

Exhibit A

Occupancy and Use Special Order – Food Storage and Sanitation Area of Application



Appendix B

GUIDELINES FOR FOOD STORAGE INFRASTRUCTURE

NATIONAL FOREST BACKCOUNTRY AREAS

GREATER YELLOWSTONE ECOSYSTEM

November 8, 2021

<u>AUTHORS</u>

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<u>PURPOSE</u>

In 2019, the Interagency Grizzly Bear Committee (IGBC) Chair directed each ecosystem subcommittee to identify and prioritize methods for reducing grizzly bear mortalities. A Yellowstone Ecosystem Subcommittee (YES) technical team responded with 3 priorities and associated action items. This approach and outcome were validated through workshops with agency and public partners and confirmed by YES members.

This report to YES summarizes the technical team's findings for the priority: backcountry and hunting related conflicts. It also addresses the two action items forwarded with this topic: 1) increase the availability of food and game carcass storage infrastructure in backcountry campsites; and 2) standardize agency guidance for providing backcountry attractant storage (and associated attractant storage orders).

Material in this report can help Forest Service YES members provide guidance to the 5 Greater Yellowstone Ecosystem (GYE) Forests in their efforts to respond to this priority. It can also be used to focus accomplishment reports to IGBC. It includes:

- Background and context.
- Issues to address and response options.

BACKGROUND

In the GYE, human-bear conflicts related to anthropogenic attractants were a major cause of grizzly bear mortalities in the late 1960s and early 1970s. An associated dramatic population decline prompted listing the GYE grizzly bear as a threatened species in 1973. Conflicts related to anthropogenic attractants and animal carcasses were common in backcountry camps and front country recreation sites from this period into the 1980s. To address this, in the mid-1980s, food storage orders that required all attractants to be secured were implemented within portions of the GYE National Forests. To facilitate compliance with food storage orders in the backcountry, the Forest Service began installing food storage infrastructure at campsites used by outfitters and the general public. These initiatives were seen as imperative in the GYE grizzly bear recovery effort.

However, much of the backcountry within the GYE National Forests is designated wilderness. Therefore, this program generated a spirited debate between managers who objected to adding structures in

wilderness and those who saw these measures as essential to protecting the grizzly bear from extirpation. Differences in opinion among FS managers on this issue led to a disparate approach to installation of food storage structures. Some managers advocated for installation of food storage infrastructure as an important mechanism for promoting public safety and reducing human-bear conflicts in the backcountry. They argued that the grizzly bear is an important symbol of wilderness. Adding structures in the backcountry to encourage public compliance with food storage orders was inexorably linked with grizzly bear conservation and promoting wilderness character by having the grizzly present. Others viewed food storage structures as an unacceptable departure from maintaining landscapes with minimal human intrusion. They opined that installation of these structures would concentrate human impacts and trammel wilderness character by degrading campsite condition over time, as well as adding a visual intrusion. In addition, they believed that leaving the responsibility of figuring out how to properly store attractants to Forest users is more in-keeping with wilderness values.

Despite this philosophical debate and the resulting uneven management response, implementation of food storage orders was extraordinarily successful in reducing human-bear conflicts related to attractants in the front country and backcountry. Specifically, evidence indicates that food storage structures installed by the Forest Service in the backcountry played a significant role in this success.

In the 1980s, Forest Service Wilderness and Wildlife program managers tried to reach consensus and offer guidance on the issue of installing food storage poles in the GYE backcountry. Through a series of meetings, including an initial gathering of R1 RO staff at the Hell-roaring Ranger Station in the Absaroka Beartooth Wilderness, tradeoffs were discussed, especially in the context of a wilderness setting. Negative grizzly bear population trends at that time gave context to the conversations.

Managers resolved that, to gain acceptance of food storage orders, a means of storing attractants needed to be provided to the public. They agreed that in a wilderness setting, food storage pole installation was an appropriate nexus between wilderness values and grizzly bear population recovery. They resolved that these structures provided the public an efficient and predictable method of meeting prescribed attractant storage constraints. They also agreed that these structures were relatively unobtrusive by utilizing primarily on-site materials (other than the 2 "J' hooks for securing the beam).

Caveats for this initiative were an effort to accommodate the wilderness and Threatened and Endangered Species management priorities. These were:

- Monitor the human impacts of focusing camping at attractant storage device installation locations by using the Limits of Acceptable Change campsite inventory system. After establishing a baseline, a revisit every 5 to 10 years should be used to detect trends. Reevaluate the program depending on findings.
- Use the placement of attractant storage structures at individual campsites to strategically orient camping, cooking and attractant storage areas to maximize public safety.
- Find a compromise in attractant storage structure placement for a balance between being unobtrusive visually and locatable by the public.
- Target campsites that already demonstrate heavier camping use. However, signing campsites that had structures wasn't appropriate because of the potential for increasing use. This also applied to posting maps at trailheads with locations of structures. A counter argument offered that identifying these campsites would maximize the benefit of installing structures.

- Placing structures in the backcountry for food storage should be accompanied by attractant storage special orders. These two initiatives are necessarily applied in tandem to accomplish human-grizzly bear conflict reduction.
- Cross beam style food storage poles with "J" hook attachments were recommended, with
 prescriptions for standard height and pole length. The SNF later added that they would also use
 metal storage boxes manufactured offsite, but the other Forests weren't ready to endorse this
 approach.
- The grizzly bear recovery program elements of using FSOs combined with backcountry storage structures to promote public attractant storage compliance would be revisited regularly through the grizzly bear management organizations to discuss efficacy and revisions.

This guidance was promoted among agency managers and organizations directing the grizzly bear recovery effort through the 1980s and 1990s. It has been generally but not uniformly endorsed and applied in the interim. These tenets have been largely culturally institutionalized, even if current staff isn't mindful of their origin.

GYE agency managers have recently returned to this discussion because of 2019 IGBC direction. The conversation is timely because of significant changes in GYE grizzly bear management since the 1980s. Human use patterns and grizzly bear numbers and distribution have changed. Although the concept of preventing grizzly bear mortalities by making anthropogenic attractants unavailable is still valid, the primary sources of mortalities have shifted. However, concerns about agency constructed food poles in the wilderness persist.

The Wilderness Act generally prohibits structures within designated wilderness areas, although allowances can be made when an agency determines they are necessary. When the Forest Service began installing food storage infrastructure in the 1980's outfitter camps and other backcountry campsites used during hunting season were targeted. At the time, these camps were a source of human-bear conflicts due to the presence of relatively large quantities of livestock feed, animal carcasses, and human food and garbage. Installation of structures at these camps greatly facilitated proper attractant storage and helped minimize attracted-related conflicts.

Since that time, many products have been developed for recreationists to help them secure attractants in the backcountry. Products approved by the IGBC are an acceptable method of food storage under GYE food storage orders. This has potentially reduced the need for Forest Service installation of structures within wilderness areas. Additionally, backcountry recreational use patterns have changed in many parts of the GYE. Some wilderness areas that once saw heavy stock and hunting use now experience much lower levels of those uses. Other areas have anecdotally seen dramatic increases in backpacker use, including many non-local users who are unaware of food storage requirements.

Just as backcountry recreational use patterns have changed over time in the GYE, so have grizzly bear populations. The distribution of grizzly bears has nearly tripled since food storage orders were first implemented in portions of the GYE. The population size has dramatically increased as well. Most National Forest lands in the GYE are within occupied grizzly bear habitat, and many of these areas support seasonally high densities of grizzly bears. Although the number of human-bear conflicts and grizzly bear mortalities associated with attractants in the backcountry has declined substantially over time, this is dependent on high compliance rates with food storage orders. Consequently, food storage

structures continue to play an important role in achieving compliance with food storage orders and minimizing attractant-related human-bear conflicts.

While circumstances have changed in a variety of ways since the Forest Service first began installing food storage infrastructure in the backcountry decades ago, the agency is still facing the dilemma of facilitating proper attractant storage to promote public safety and minimize human-bear conflicts, while ensuring their actions do not degrade wilderness character. This document is intended to highlight important considerations for local managers as they seek to accomplish both goals.

TYPES OF INFRASTRUCTURE

Storage poles:

The most common type of backcountry food storage infrastructure in the GYE is a simple wooden cross pole constructed from a tree cut on site and secured with metal J-hooks or chain (Figure 1). When installed properly, these structures are versatile options for securing a variety of attractants and can last for decades. Pole placement can be used to encourage proper camp set-up, with separation of the sleeping, cooking and food storage areas. The poles and their use are easy to describe in educational materials and easy for the public to identify in the field. The efficacy of pole use is high, although occasionally users fail to suspend the attractant high enough and bears can obtain a food reward. In rare cases, individual bears may learn to manipulate the ropes to remove attractants from the pole. Where an agency pole is installed, there isn't a proliferation of inadequate structures build by the public. These structures are made of native materials, except for the "J" hooks used to suspend the poles. Suitable green trees for hanging the pole must be in reasonable proximity to the campsite. The materials are relatively cheap, but special skills and climbing certifications are required for pole installation (although some units have opted to contract the work).



Figure 1. Traditional wood cross-pole design for carcass or other attractant storage at a backcountry campsite on the Shoshone National Forest.

Metal storage boxes:

Food storage boxes are another type of structure that have long been used in the GYE backcountry (Figure 2). Boxes are less versatile than poles because they cannot be used for carcasses and hold an overall lower volume of attractants. However, they are very simple and convenient to use, are highly bear resistant, and blend into the landscape well. Current designs are made of aluminum and can be bolted together in the field and are thus relatively easy to transport with packstock and to install. Other advantages of using this structure type are in common with the food poles.



Figure 2. Food storage box installed at a high-use backcountry campsite on the Shoshone National Forest.

Metal tripod poles:

Metal tripod poles were designed by the Missoula Technology and Development Center and the Shoshone National Forest for storing carcasses in backcountry areas where green trees to support traditional poles are lacking (Figure 3). These poles can be packed with livestock into backcountry areas, although they require skilled packers and well-trained animals and can be difficult to transport along narrow trails. The free standing poles are assembled on site. With their capacity for hanging large amounts of game, they are ideal for outfitter camps but may also be appropriate for high-use dispersed campsites. After a season or two of use, the metal pipes rust and the poles blend into the landscape well. They are often less visible than a traditional wooden cross-pole.

Figure 3. Metal tripod pole in use at a Shoshone National Forest outfitter camp.



Photo courtesy Lee Livingston

Elevated log platforms:

Platforms have been used in the GYE for decades to store large volumes of attractants at outfitter camps (Figure 4). These are appropriate in outfitter camps with long-term occupancy and the need to store large quantities of attractants, especially horse feed. Platforms are not an acceptable form of attractant storage under most Food Storage Orders unless they are authorized under a Special Use Permit or associated Operating Plan issued to an outfitter. While platforms can be a considerable impact to wilderness character, they are only used in permitted outfitter base camps that already have obvious signs of human presence and can be an important tool for mitigating the otherwise high conflict potential associated with storing large volumes of attractants in bear country.

Figure 4. Attractant storage platform in an outfitter camp, Bridger-Teton National Forest.



GUIDELINES FOR BACKCOUNTRTY ATTRACTANT STORAGE STRUCTURE INSTALLATION PROGRAM.

Funding and Resource Considerations:

Each unit should prepare plans for installing and maintaining food storage infrastructure dependent upon need and capacity to accomplish the work. In many cases, units have relied on backcountry recreation personnel who have the specialized climbing and packing skills. However, a universal shortfall in backcountry personnel has made it difficult to even accomplish routine trail maintenance and outfitter management. In some cases, wildlife staff have been able to add capacity to accomplish projects. Contractors have also been utilized, although this requires enough capacity to ensure project oversight. Volunteers or partnerships with outfitters may be viable sources of labor, especially for work that does not require special certifications.

Most food storage infrastructure projects are funded through wildlife or recreation programs, or some combination of the two. With declining budgets, funding is likely to be an issue for managing backcountry food storage infrastructure. This work is labor intensive, especially considering extensive travel time required to access many backcountry sites. Therefore, salaries are the greatest project expense while materials are relatively inexpensive. A traditional wooden cross-pole can be installed for about \$200 in materials, while collapsible boxes are approximately \$1,000. In the past, several Non-governmental organizations have funded backcountry food storage infrastructure projects in the GYE. Others have indicated their willingness to do so in the future if the Forest Service can provide a well-thought-out GYE implementation plan. Therefore, partnership funds are likely available to augment projects lacking sufficient funding.

Site Selection:

Impacts to wilderness character should be a primary concern in deciding where backcountry food storage infrastructure will be installed and maintained. However, other factors must also be considered, including results of previous Forest Service planning efforts. Some wilderness areas or portions of wilderness areas may have Forest Plan Management Area allocations that do not allow for installation of

food storage infrastructure. If previous planning efforts allow them, installation, and maintenance of infrastructure by the Forest Service at such sites can minimize the impact to wilderness character. Having a minimum number of high-quality structures provided by the Forest Service can eliminate the proliferation of user created poles and greatly facilitate user compliance with Food Storage Order requirements.

Human use levels, dominant recreational use types, and human-bear conflict patterns should also be considered. Areas or sites with higher levels of recreational use and/or higher levels of human-bear conflicts should be prioritized. Areas or sites with low levels of human use may not merit any infrastructure, and units may consider decommissioning existing structures located in these areas. Human use patterns in backcountry areas change over time, and food storage infrastructure installation and maintenance plans should adapt to those changes.

Food storage infrastructure is generally appropriate only at campsites where public use is high enough to warrant it. Human use at these sites should be apparent, and, in many cases, user-created food storage poles will already be present (which indicates the need). These should be dismantled when a Forest Service structure is installed. User created poles are often a higher impact to wilderness character than a Forest Service structure because they are installed using large amounts of brightly colored rope or baling twine. Also, because they are often poorly built, multiple versions are added at a campsite over time due to a high failure rate. User created structures also commonly do not allow compliance with Food Storage Order requirements. For example, it is difficult for the average recreationist to install a pole for attractants to meet the height requirement when they are suspended from the pole.

Types of recreational uses dominant in the area should be carefully considered when determining food storage infrastructure needs. For example, carcass storage should be a primary consideration for areas that receive considerable hunting use. Large animal carcasses are extremely attractive to bears, and aggressive behavior by bears is often exhibited around carcasses. Many of the human injuries and fatalities caused by grizzly bears in the GYE during recent years have been associated with carcasses. However, large animal carcasses can be very difficult to store properly without a high-quality pole. Therefore, poles are generally the only type of structure appropriate for backcountry carcass storage. Food storage orders in the GYE generally specify that carcasses must be stored 100 yards away from camping/sleeping areas, which establishes the distance for selecting pole installation sites intended for carcass storage in backcountry campsites.

Sites where non-hunting uses such as backpacking are dominant generally involve smaller volumes of attractants. However, some areas of high-backpacking use are anecdotally seeing more non-local users who are uninformed about food storage orders and are unprepared for complying with them. Additionally, many approved products for storing attractants are unattractive to backpackers because they add weight to the load being carried, and/or have limited capacity. Installation of food storage structures can facilitate compliance with food storage requirements in such areas. Boxes as well as poles can be considered in such sites.

Landscape characteristics can be a major factor driving the type and location of infrastructure. Pole installation can be very difficult in areas with extensive burned or beetle-killed forest, or in alpine areas where trees are lacking. Installing poles in dead trees can be risky because they can break or topple during the installation process, or when loads are being hung by users. Green trees should be selected

whenever possible. In areas where green trees are lacking, boxes may be the preferred structure for attractant storage. Where the need for carcass storage is high in such landscapes, the packable metal tripod pole could be considered.

Outfitter Camps:

Outfitter camps often require special consideration for food storage infrastructure due to the high volume of attractants that need to be stored, the long-term occupancy permitted, and the presence of game carcasses. Historically, these sites have demonstrated high potential for conflicts with bears unless adequate food storage infrastructure is present. Depending upon the circumstances of an individual outfitter camp, poles, boxes, and platforms may all play a role. For example, many hunting camps operate for 2 months or longer, are located 15 or more miles from a trailhead, and require livestock feed to be packed in to alleviate grazing pressure. These camps may need a carcass pole (at least 100 yards from the sleeping area), a platform for storing livestock feed, and one or more food storage boxes for storing food. Other outfitter sites with short-term occupancy and lower volumes of attractants, or those located close to a trailhead, may need little or no infrastructure.

Inventory:

Forests should maintain an inventory of food storage infrastructure in backcountry areas, including the type, location, and condition of the structure. Often inventory data can be collected incidental to other backcountry patrols, trail maintance, or campsite inventory work. Inventories are essential for determining maintenance needs, planning future installation projects, determining structures that should be decommissioned, or displaying to the public where structures are located. In the best case, the Limits of Acceptable Change inventory or similar system should be used to track changes over time. Information on long-term backcountry human use trends facilitates strategic planning.

Infrastructure Maintenance:

Like any infrastructure, food storage boxes and poles require periodic maintenance for them to provide safe and effective use. The longevity of a pole is strongly influenced by the tree stand it is located in. Poles located in stands of green trees can last for decades. However, in many places, poles have become increasingly difficult to maintain as burned and beetle-killed areas are more prevalent throughout the GYE. Poles that sustain wear often need to be replaced entirely. Boxes can last for long periods of time with minimal maintenance. Periodically spraying the hinges with WD40 prevents rusting and can increase their longevity. Clips and chains for closing the box properly may need to be replaced, but these typically last for 20 or more years. Metal tripod poles require minimal maintenance and will likely last for decades. Platforms can be repaired if the support trees remain sound, and maintenance responsibility typically lies with the outfitter.