QUESTIONS & ANSWERS

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ALASKA RAILROAD

Vegetation Management Frequently Asked Questions

What is the purpose and need for adequate control and management of vegetation on Alaska Railroad (ARRC) property?

Vegetation around railroads must be controlled for several primary safety reasons, including to:

- Ensure the track is visible, allowing inspectors to see the condition of ties, rail and fasteners and to correct any defects that could result in derailment;
- Clear walking areas around the track in order for train and track maintenance crews to work safely and avoid slip, trip, and fall injuries;
- Keep brush from blocking line-of-sight at crossings and to maintain visibility of signals and signs critical to safe train movement; and
- Eliminate plants and roots that hold moisture and impede drainage, which degrades the track structure. For example, ties rot faster in moist conditions and a soggy ballast (track bed) becomes unstable, offering decreased support to the track.

Secondary reasons for vegetation control include to:

Overgrown weeds on the track are nearly impossible to eliminate with non-chemical methods.

- Remove potential fuels that cause wild fires and threaten timber bridges and trestles;
- Protect capital investments recently completed on the railroad's track and infrastructure; and
- Prevent the spread of invasive, noxious weeds.

Why must ARRC use chemical weed control?

Mechanical and manual methods of control alone do not adequately control vegetation on the track. These methods – mechanized rail-based brushcutters, off-rail hydroaxing, wayside manual cutting – are effective only within limited ranges. Mechanical and manual methods do not address vegetation growing between the rails and to the ends of the crossties, as is clearly illustrated by the photo on this page.

The Federal Railroad Administration (FRA), the national regulatory agency for U.S. railroads, has fined the Alaska Railroad annually for failing to meet federal safety mandates with regard to vegetation in and around the track. In 2009, the FRA formally notified ARRC that the situation had become safety critical and must be corrected. During summer 2009, the FRA identified 130 vegetation-specific violations along ARRC's tracks. Since the use of herbicides began on the rail system in 2010, FRA citations for vegetation violations have significantly decreased. ARRC has received few, if any, vegetation violations in recent years.

So-called "alternative methods" such as steam, infrared, hot water, and burning have been tested extensively but proven ineffective. The size of the problem is overwhelming – 500 miles of mainline and branch track, 100 miles of yard track, and weeds that continue to grow all summer long. The railroad needs effective, enduring vegetation control throughout its rail system.

What is at risk?

ARRC transports more than a half million passengers each year and approximately 15% of ARRC freight is classified as hazardous material. Maintaining the track and roadbed to the highest standards is critical to ensuring passenger safety and environmental integrity. Overgrown vegetation can prevent ARRC track inspectors from recognizing potential track problems that could cause a derailment.

Employees working on or around the track are at risk of injury due to slip, trip and fall hazards. Unchecked vegetation presents a tripping risk by itself, but plant growth also obscures hazards hidden underneath.

Recognizing these dangers, the FRA, as the national regulatory agency for U.S. railroad safety, deemed the situation to be critical in a letter sent in early 2009. FRA warned ARRC to expect more fines, slower approved train speeds and possibly track closures during the busy summer season. Such measures would result in a serious economic hit that would impact not only railroad passengers, but also businesses that rely on the railroad to bring customers to their door steps and to haul freight required to meet business and industry obligations along the railbelt. Some examples of fiscal impacts include:

- **Delays.** Railroad passengers would be directly impacted by delays, which could easily stretch up to 1.5 hours. Many customers ride the train to the Anchorage airport for direct access to air travel. If buses are available, these customers could shift to the Seward Highway, causing additional congestion on the highway. Other passengers take part in afternoon tours and activities in Seward; late train arrivals would negatively impact these businesses.
- **Fines and Penalties.** In addition to economic and social impacts from delayed or interrupted train service, the Alaska Railroad will be subject to fines for non-compliance with federal regulations. It is difficult to estimate, but fines would be likely to exceed $100,000 annually.

Where will the Alaska Railroad apply weed control?

In general, weed control products are applied on Alaska Railroad operating property (rail yards, spurs, sidings, etc.) and along the railroad main line and branch line right-of-way within 15 to 24 feet of the track centerline. Periodically the railroad will also apply a brush control herbicide along the Tanana River levee constructed near Salcha. Completed in 2014, the levee and a bridge comprise phase one of the Northern Rail Extension project.

Who governs weed control products and uses?

Weed control products and application methods are regulated by both federal and state governments. The U.S. Environmental Protection Agency (EPA) is the federal agency responsible for regulating pesticides, including herbicides. EPA evaluates new pesticides/herbicides, reviews registered pesticides, regulates pesticide manufacturers, and enforces pesticide requirements. EPA and states register or license pesticides for use within the country. States may place more restrictive requirements than the EPA. Pesticides must be registered by EPA and the state before use and distribution. The Alaska Department of Environmental Conservation, Division of Environmental Health oversees the state Pesticides Program. The Alaska Railroad is accountable for the proper storage and use of EPA- and state-registered weed control products.

What type of weed control and other products will be used by the Alaska Railroad?

Herbicide products used in 2020 include:

- Alligare Glyphosate 4 Plus is the general use herbicide that kills weeds once they emerge. The active ingredient is glyphosate, commonly available in over-the-counter products found in home-and-garden stores under various brand names including Roundup and Rodeo.
- Alligare MSM 60 and Bayer Cimarron Plus are pre-emergent herbicides, meaning they prevent seeds from sprouting. MSM 60 and Cimarron Plus have the active ingredient Metsulfuron-Methyl. Cimarron Plus also has a small amount of the active ingredient Chlorsulfuron
- Bayer Landmark XP is used to control grasses and broadleaf weeds with active ingredients Sulfometuron Methyl and Chlorsulfuron.

Optimally, the Alaska Railroad track would be free of weeds, providing an uncompromised platform for train movement.

- Alligare Triclorpyr 3 is used primarily for brush control along the track bed to provide adequate line-of-site. The active ingredient is Triclopyr Triethylamine Salt.
- Bayer Telar XP is used to kill particularly stubborn and pervasive weeds such as the Yellow Narrowleaf Hawksbeard, which is the bane of many railyards due to its resistance and abundance. Telar XP contains the active ingredient Chlorsulfuron. This active ingredient will be used at a higher rate in the railyards.
- Alligare MSO 1 is not an herbicide. It is a surfactant used to help spread herbicides more effectively.
- Alligare Drift Control is not an herbicide. It is used to retard drift in spray operations.

What about aerial spraying?

Aerial spraying will not be used.

How will the ARRC apply the weed control products?

A licensed contractor will use a special vehicle equipped to travel on the rails. Low-volume, low-pressure ground-directed attachments will be used to apply the weed control products. This method is designed to limit potential for wind to carry the chemicals away from the target area. There may be additional spot application by licensed contractors using hand-operated pump-spray tools.

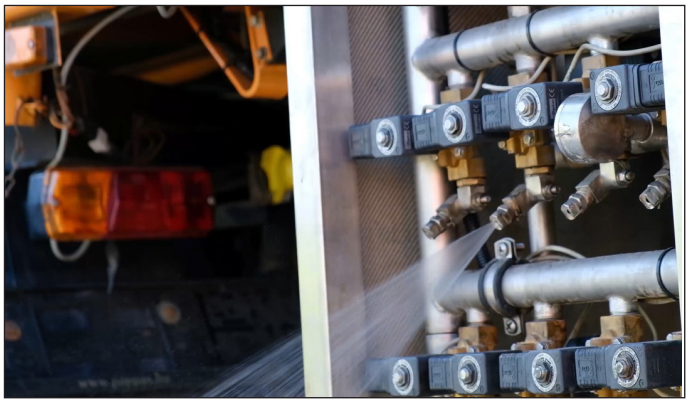
Will an Alaska Railroad representative accompany the licensed contractor during the application process?

Absolutely. An Alaska Railroad representative, who is also a licensed applicator, will accompany the railroad's contractor at all times during application activities. There will be additional ARRC supervision from the district in which the work is being done.

Who is the contractor?

FerroSafe (http://ferrosafe.com/) is the experienced and licensed contractor scheduled to transport its equipment to Alaska to perform herbicide application. Founded by John Rumble, the company was previously known as Rumble Spray. For more information about the company, visit its online fact sheet (http://ferrosafe.wpengine.com/about-us/). FerroSafe is the only U.S. herbicide application contractor licensed to employ recently perfected Recospray technology that can dramatically reduce the amount of herbicides used through precision application.

The contractor applies herbicides using a rail-equipped vehicle outfitted with low-volume, low pressure nozzles and attachments to apply hericides with precision.



Is the Railraod using more herbicides as time goes on?

The amount of herbicide applied per acre has actually decreased since the use of herbicides resumed in 2010. As the amount of problem vegetation decreases with integrated control measures, less herbicide is needed to maintain a safe trackbed and right-of-way. In addition, the herbicide application contractor is employing recently perfected infrared technology to pinpoint weed location and more precisely apply herbicides. We expect this technology to continue to reduce the amount of herbicide needed to maintain a safe right-of-way.

What is the new technology? Is there a cost savings?

FerroSafe's vehicles have been adapted to include technology known as Recospray, which uses infrared sensors to detect green color and plant shapes, and then relays this information to instruct specific nozzles to apply herbicide precisely at those targets, as opposed to a broadcast application over a wider swath.

The Ricospray infrared camera is mounted on top of the FerroSafe truck cab, to provide a clear vantage point for detecting weeds.

This approach is planned for herbicide application along the Alaska Railroad's main line track.

The technology has been perfected by the Hungarian company G&G Ltd and has been used in Europe for a number of years. FerroSafe has been testing the technology at its headquarters in Zillah, Washington. FerroSafe is the only U.S. company currently licensed to employ Recospray in the United States. The Alaska Railroad's summer 2019 herbicide application will be the first industrial use in the United States.

The objective for using Recospray is to apply herbicides in a smarter way, as opposed to cost savings. While using less herbicides does reduce product expense, ARRC is paying more for the use of new technology. The operational cost will remain about the same.

What about streams, lakes, and other areas that are important to fish and wildlife?

The railroad does not intend to apply herbicides to water.

How will subsistence users know their food is safe?

Herbicides will not be applied outside the rail yards or the railroad right-of-way (ROW — i.e., the tracks and the land within 100 feet of either side of the track centerline in most parts of ARRC's rail system). For safety reasons, it's never a good idea to be in the ROW and, in fact, the ROW is closed to the public. Impacts to plants outside the railroad ROW are not expected.

Are there health risks associated with coming into contact with these products and how long does that risk persist?

First, the weed control products won't be applied in areas normally visited by people. The application zone is primarily in the immediate track area. But more important, when used according to the label directions, the products have been determined by the federal government to pose little to no risk to human health or the environment. To avoid any unwanted contact with the product, the manufacturers recommend that people not come into an area that has been treated until the product has dried, which can be anywhere from 5 to 30 minutes depending on the weather.

For more information, consult the Safety Data Sheets (SDS) or Material Safety Data Sheets (MSDS), and manufacturer product labels listed on the last page of this fact sheet.

Does the railroad use other methods to control vegetation?

Yes, we do. We have used mechanized and manual methods in the past and will continue to do so in conjunction with chemicals for an integrated vegetation management (IMV) strategy.

What do other railroads do?

The same approach we pursue — a mix of mechanized and chemical control. To our knowledge, no North American railroad has adopted a completely or primarily non-chemical weed control program.

A ballast regulator is equipped to scrape weeds along the side of the track bed, which tempers weed growth temporarily.

What is the Federal Railroad Administration (FRA) position on the use of weed killers?

The FRA requires railroads to keep their tracks free of weeds. The FRA has repeatedly fined the ARRC for excessive vegetation. In its April 2009 letter to ARRC, the FRA confirms that,

> *"the growth rate and location of vegetation along the 500 miles of ARRC track continue to get worse.... FRA recognizes that ARRC's vegetation management difficulties have been complicated by its inability to spray herbicides."*

What are invasive weeds and what do they have to do with the railroad?

Invasive weeds are non-native plants that have become so widespread that they threaten local ecosystems. The invasion of exotic weeds is one of the greatest threats to natural ecosystems in the western United States and Alaska. The Alaska Railroad right-of-way is a major vector for the spread of some of these weeds. Keeping the right-of-way weed-free is paramount in controlling the spread of invasive weeds throughout Alaska.

Where can I find product-specific information about the weed control products the Alaska Railroad plans to use as part of its vegetation management plan?

Safety Data Sheets (SDS) and Product Labels are available from the manufacturers' web sites. Additionally, Fact Sheets are available from the Environmental Protection Agency, as well as from other recognized and respected sources. The following documents are available via links on ARRC's web site — **www.AlaskaRailroad.com > Corporate > Safety > Vegetation Management**.

Alligare Glyphosate 4 Plus (EPA Reg. No. 81927-9)
- Product Label and SDS

Alligare MSM 60 (EPA Reg. No. 81927-7)
- Product Label and SDS

Alligare Triclopyr 3 (EPA Reg. No. 81927-13)
- Product Label and SDS

Bayer Telar XP (EPA Reg. No. 432-1561)
- Product Label and SDS

Bayer Cimarron Plus (EPA Reg. No. 472-1572)
- Product Label and SDS

Bayer Landmark XP (EPA Reg. No. 432-1560)
- Product Label and SDS

Alligare Drift Control
- Product Label and SDS

Alligare MSO 1 (methylated seed oil surfactant)
- Product Label and SDS

What other information is available about the topic of vegetation management and weed control products?

Third-party information from public and private universities, professional weed management organizations, state and federal government agencies are easily found on the Internet. Some of the most complete information sites include:

- University of Iowa Department of Weed Sciences — www.weeds.iastate.edu/
- U.S. Forest Service — www.fs.fed.us/
- EPA RED Fact Sheet for Glysophate — http://www.epa.gov/oppsrrd1/reregistration/REDs/factsheets/0178fact.pdf
- State of California Pesticide Management Agency — www.cdpr.ca.gov/
- Cornell University Institute for Comparative and Environmental Toxicology — www.toxicology.cornell.edu/
- University of California - Davis (UC Davis) Weed Research and Information Center — http://wric.ucdavis.edu/
- Weed Science Society of America — www.wssa.net/

Who should I contact for more information about the ADEC permitting process?

For questions pertaining to the Alaska Department of Environmental Conservation pesticide regulations, contact:

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