

What are Living Snow Fences?

Living Snow Fences are trees, shrubs, and/or native grasses planted at critical locations along public travel roads or around communities and farmsteads. These vegetative barriers trap and control blowing and drifting snow.

Advantages

Properly designed, a living snow fence will cause snow to accumulate within and adjacent to the planting and not on the road. There are several advantages to using living instead of traditional wooden snow fence structures:



1. Last longer than traditional wooden structures (average. 50-75 years vs. 20-25 years).
2. Improve roadway aesthetics.
3. Provide and enhance wildlife habitat.
4. Relatively maintenance free once established.
5. Average installation and maintenance costs of living barriers have been approximately one seventh that of 12 ft. wooden structures over the life of each.
6. Reduced snow removal costs.
7. Sequester carbon dioxide from the atmosphere.

Some disadvantages to consider

1. Living snow fences require more space than slat snow fences.
2. New plantings must be protected from grazing.
3. Time required to obtain adequate snow control is highly variable depending upon site conditions. On average, 5-10 years is required.
4. Site conditions such as shallow soils and pH (acidity or alkalinity) may prohibit plant establishment.

History

Railroad companies were among the first in the United States to use living barriers to control blowing snow. In 1905, the Great Northern Railway Company planted trees for snow drift control along rights-of-way in North Dakota. By 1909, this company reported that over 96,000 trees and shrubs had been planted and survival exceeded 80 percent.

During the winter of 1925-26, the Wyoming State Highway Department made an attempt to keep roads open state-wide. Due to difficulties encountered, a decision was made to install living snow fence plantings.

Installation was initiated in the spring of 1927. Using WWI surplus equipment for watering, efforts were made to keep plantings alive during the early 1930s drought. This task proved too



difficult and tree mortality was high. However, remnants of some plantings remain today and provide a surprising degree of snow control. Nearly 50 years were to pass before the living snow fence program was revived.



During the spring of 1983, the now Wyoming Department of Transportation (WYDOT) worked cooperatively with the Wyoming State Forestry Division to install three demonstration plantings in Laramie County for the purpose of snow control. The trees were provided supplemental moisture via drip irrigation systems.

In 1998, the Wyoming State Forestry Division and the Wyoming Association of Conservation Districts approached the leadership of WYDOT to initiate a statewide living snow fence program. This effort was successful and today all three agencies work under an MOU agreement to fund and implement living snow fence projects. To date, 57 projects have been installed and will protect 55,529 feet of public roadway upon establishment.

The states 34 Conservation Districts initiate site proposals in cooperation with local WYDOT maintenance personnel. These proposals are reviewed for technical aspects and site characteristics related to tree growth by the state living snow fence committee and contracts are signed identifying project installation and maintenance requirements.

A **Living Snow Fence** is a planting of trees, shrubs, or native grasses planted at critical locations to reduce the need for winter maintenance and snow removal. Once the snow fences begins to mature, they will help reduce blowing, drifting snow and high winds common to the area. This improvement provides winter safety for travelers on Wyoming's highways and typically saves taxpayer dollars by reducing long-term winter maintenance costs. A living snow fence planting provides the same public benefit with more appealing scenery than a traditional wooden snow fence. Each year, PACD staff replants a few lost seedling trees and cleans up around the living snow fence sites.



The Wyoming Department of Transportation provides grant funding for project sponsors to install living snow fences across the state through cooperative efforts with Wyoming State Forestry. The Popo Agie Conservation District has sponsored two living snow fence projects near [South Pass City](#) and the [Red Canyon Scenic Overlook](#).

Requirements for State Funded Program

1. Proposed sites must be located along state maintained highways (includes interstates).
2. Land ownership can be private, state or federal.
3. Local Conservation District must be contacted for proposal development.
4. All proposals must be pre-approved by WYDOT District office.
5. 30 year easements and maintenance agreements are generally required.

6. Proposals are due by September 1 of each year.

You can do the same thing -- on a smaller scale -- on your acreage, to keep snow from drifting over your lane, or around your barns or livestock areas.

Living snow fences adjacent to roads effectively prevent snowdrifts, improve visibility, and reduce slush and ice accumulations, snow removal costs, road closures, and pavement maintenance costs. An evaluation of 18 sites in Minnesota found that reduced snow removal costs alone in an average snowfall year (32 inches) would generate benefit/cost ratios ranging from 9:1 to 46:1 (Tabler, 1997).

Besides trapping snow and reducing removal costs, living snow fences also provide;

1. Greater road visibility and driver safety, reducing vehicle accidents and injuries;
2. More open, better functioning drainage systems and reduced spring flooding;
3. Improved wildlife habitat;
4. Livestock protection;
5. Reduced soil erosion;
6. More beautiful farms and rural landscapes;
7. Visual screens, and
8. Up to 20% reduction in energy costs.