



Reforestation & Afforestation: Iceland & Alamosa

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Afforestation is the establishment of a forest or stand of trees in an area where there was no forest. Reforestation is the reestablishment of forest cover, either naturally (by natural seeding, coppice – cutting back to ground level, or root suckers) or artificially (by direct seeding or planting).

We recently had a wonderful trip to Iceland. What comes to your mind when you think of the Icelandic landscape? Most people think of pasturelands, waterfalls, volcanoes, and glaciers – not trees. According to an article on the Iceland Forest Service (IFS) website, “The extent of Icelandic woods probably reached a post-glacial minimum of less than 1% of total land area cover around 1950, perhaps even less than 0.5%.”

However, at the time of human settlement about 1140 years ago, birch forest and woodland covered 30-40% of Iceland's land area. Mostly downy birch (*Betula pubescens*) and willow scrub, settlers cleared trees for pastureland, building materials, and fuel.

Sheep were important as a source of wool from the outset, but by 1300 they had become a staple source of food for Icelanders, reports the IFS. To this day most sheep graze freely over the landscape preventing regeneration of the woods; the sheep find the baby trees very tasty.

Today about 1.4% of the country is considered forest – and most of this is contained in fenced areas out of the reach of sheep and in urban areas.

The IFS has worked for more than 60 years to educate Icelanders and to plant trees. “A century ago, most Icelanders had never seen a tree,” states the IFS website. “Sixty years ago, few Icelanders believed that trees of any size to speak of could grow in Iceland.” The mind frame was since trees don't grow in Iceland, trees can't grow in Iceland. Today, forestry for timber production, land reclamation, recreation, and aesthetics is being carried out by thousands of people all over Iceland.

“In Reykjavik, the capital, where only a few decades ago trees grew only in graveyards, the streets are being lined with imported broad-leaved trees,” says the IFS website. “The new woodlands have also brought new fauna and flora to the country - including birds such as the blackbird and chaffinch.”

According to the IFS, archaeological research has shown that the forests consisted mainly of downy birch and to a lesser extent dwarf birch (*Betula nana*), which were the only tree species to survive the last glaciation, which ended about 10,000 years ago. There was no evidence of coniferous trees (except creeping juniper (*Juniperus horizontalis*), even though the country is in the boreal forest zone.

Iceland is experimenting with a variety of tree species to see what will do well in the environment. A number of larch (*Larix*) species seem to be thriving as is balsam poplar (*Populus balsamifera*) imported from Alaska and lodgepole pine (*Pinus contorta*).

However, Norway spruce (*Picea abies*) cannot tolerate the strong, cold winds and can only be used in the most sheltered places. Sitka spruce (*Picea sitchensis*) seemed to have a promising future in Iceland until a mild winter followed by a severe spring frost in 1963 caused almost total damage. Do these challenges sound like the ones we have in Alamosa? I'd say yes.

I'm not suggesting we try larches or balsam poplars. Rather, Alamosa needs to continue experimenting with a variety of tree species to see what will thrive in our environment. Iceland needs to keep sheep away from forested areas and we have problems with deer in private yards and the Alamosa Ranch. While some of our challenges are similar to Iceland's, some are quite different.

Unless you live near the river, your land likely didn't have trees in the last several thousand years. Our situation is one of afforestation rather than reforestation. And our yearly precipitation is about 6-8 inches a year while many places in Iceland receive 3- 6 feet a year.

This doesn't mean we can't have beautiful trees. Yes, we need to give them a reasonable amount of water – to me, a small price to pay. In the April 22, 2015 column entitled, "Trees to Shade People", I discussed several tree species that are doing well in Alamosa. Read all about it at AlamosaTrees.net under the Newspaper tab!

Thröstur Eysteinnsson of the IFS in "From Barren Land to Forests: The Case of Iceland: 2009" said Iceland now has a population that wants more forests along with appropriate economic infrastructure and research.

"So now we can be happy riding our bicycles in the forest." T. Eysteinnsson