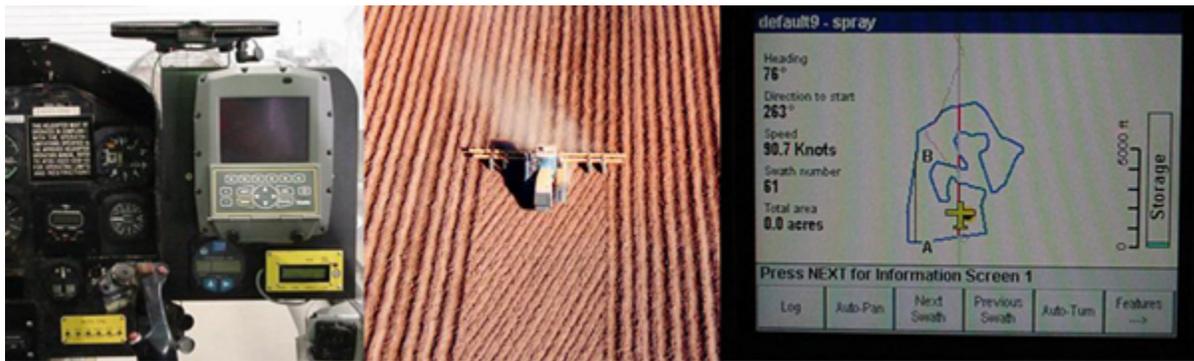


Revegetation Equipment Catalog

Descriptions, applications, pictures, and sources for equipment used on rangelands.

Global Positioning Systems

Global Positioning System (GPS) is a technology that can locate positions or navigate the user to a location. GPS uses a constellation of 24 navigational satellites to determine positions on the earth's surface. Geographic Information System (GIS) is mapping software that can link information about where things are with information about the location, e.g. soil type, vegetation, topography, roads, etc. Combining GPS and GIS can direct tractors, four wheelers, aircraft, or persons on foot to desired field locations. Additionally, these systems can be programmed to direct mechanical operations, e.g. variable-rate sprayers, fertilizers, or seeders, etc. This technology is revolutionizing many agricultural operations.



Description

GPS units consist of a receiver, antenna, display screen, and/or lightbar for tracking. These units can be handheld, carried as a backpack, mounted in mobile equipment, or an integral part of a desktop computer depending on desired application and accuracy. Differential GPS (DGPS) uses a base station or a special signal to supply a correction value to the receiver's data. This combination can provide accuracy from 30 feet to inches depending on type of equipment. Base stations use post-processing of data. Differential signals for real-time applications include Omnistar (worldwide L-band satellite signal), Landstar (L-band satellite signal), Coast Guard beacon (where available), WAAS (Wide Area Augmentation System), and RTK (Real-Time Kinematic).

Application

GPS units need a signal from at least three satellites for minimal operation. Current handheld units using WAAS are accurate within approximately 10 feet and cost from \$150 to \$450 depending on options. These units are popular with hikers, hunters, and fishermen. Real-time applications for mobile equipment can cost \$10,000 to \$40,000 or more depending on accessories. Aircraft units can display maps of fields to be sprayed, guiding each swath, and logging the flight pattern of aircraft. Tractors use GPS to control variable rate applications of agricultural materials, and RTK systems are available to accurately steer the tractor. Brush control projects are using GPS to guide tractors or aircraft during applications to protect wildlife habitat, clear selected areas, and provide aesthetically pleasing landscapes.

Sources

The manufacturers' websites list information on equipment sizes, accessories, dealers, and their contact information.

[AGCO Corporation](#)

Duluth, GA 30096

[Ag-Nav, Inc.](#)

Pinehurst, TX 77362

[Deere & Company \(GreenStar\)](#)

Moline, IL 61265

[ESRI \(ArcGIS\)](#)

Redlands, CA 92373

[Forestry Suppliers, Inc. \(catalog\)](#)

Jackson, MS 39284

[Garmin International Inc.](#)

Olathe, KS 66062

[Hemisphere GPS.](#)

Calgary, AB, Canada T2G 3C4

[Magellan –Thales Navigation](#)

San Dimas, CA 91773

[NovAtel Inc.](#)

Calgary, AB, Canada T2E 8S5

[Omnistar Inc.](#)

Houston, TX 77063

[Trimble](#)

Sunnyvale, CA 94088