

RICK HUBBARD SARGENT INNOVATION AWARD DESIGNEE

2023

Yellowstone Ecological Research Center

The fourth Rick Hubbard Sargent Innovation Award was made to Yellowstone Ecological Research Center (Bozeman, Montana) for their innovative work to assemble and deliver data products called Conservation Decision Maps (CDM), which are 3-D habitat maps. The primary goal of the CDMs is to build a community of wildlife stewards and stakeholders for conservation decision-making. Due to the importance of private ranch lands in wildlife conservation, a related and overarching goal is to bring the wildlife conservation community together in an apolitical way to increase and build the public's trust in wildlife conservation decisions by providing freely available and semi-annually updated mapping products.

The CDMs are being assembled to provide information under four categories:

- **Human / Landscape:** Land ownership, most recent cadastral; Topography, 30-m USGS digital elevation model (DEM); Lidar Topography, 1-m USGS Lidar DEM; Human infrastructure (lidar), classification of human structures.
- **Reformatted Satellite Data:** Plant production, 8-day 500-m above-ground biomass; Snow cover, 8-day, 500-m fractional snow; Snowpack, daily 100-m for SWE, depth, and density (NWS); Coarse fractional land cover types, annual, 500-m.
- **Hydrologic Model Daily Output (FFS):** Discharge, at the tributary level; Water temperature, at the tributary level; Soil water, 100-m surface to rooting depth; Evapotranspiration, daily potential and actual (modeled); Snow water, 100-m water content; Snowmelt, 100-m water loss; Sedimentation/Turbidity, loss in grams at the tributary level and obscureness.
- **3D Habitat Types** (height categories in meters or m): Bare ground, soil and rock, 30-m annual; Grassland - dry pasture, 30-m early summer peak green and fall brown-down; Grassland - irrigated pasture/crop, 30-m early summer peak green and fall brown-down; Grass/forbs - ungrazed, 30-m early summer peak green and fall brown-down; Shrub- sagebrush grasslands, 30-m peak green and fall brown-down, above/below 0.5-m; Shrub- riparian, 30-m peak green and fall brown-down, above/below 1-m; Forest- riparian (tree species), 30-m annual, below 2-m, 2-m to 7-m, 7-m and above; Forest- dryland juniper, 30-m annual, below 2-m, 2-m to 7-m, 7-m and above; Forest- deciduous, 30-m annual, below

2-m, 2-m to 7-m, 7-m and above; Forest- coniferous, 30-m annual, below 2-m, 2-m to 7-m, 7-m and above.

Yellowstone Ecological Research Center has chosen northern Yellowstone — all of Park County, MT, and the entire northern range, which is critical ungulate winter range, both inside and outside Yellowstone National Park — as its initial project area.

Yellowstone Ecological Research Center received \$5,000 as a contribution towards Conservation Decision Maps project.