

N-3. Implement Management Practices to Improve the Health and Function of Natural and Working Lands



GHG Mitigation Potential



Variable reduction in GHG emissions from natural and working lands

Co-Benefits (icon key on pg. 34)



Climate Resilience

Improving the health and function of natural and working lands can reduce the urban heat island effect and flooding and improve water quality, as well as provide recreational spaces that improve health and community resilience. Improving natural and working lands can also provide habitat in which wildlife can live and through which it can migrate in the face of increasing temperatures and changing precipitation patterns.

Health and Equity Considerations

Some management practices can reduce the use of pesticides and herbicides, which can reduce exposure to farmworkers and their families.

Measure Description

This measure covers a broad range of management strategies aimed at improving the overall health and functionality of natural and working lands as a mechanism for increasing carbon sequestration and reducing GHG emissions. Management practices may include those that change ecosystem carbon exchange rates (e.g., cultivated land soil conservation, use of biochar) and those that involve land cover changes.

Scale of Application

Plan/Community

Implementation Requirements

Note that this measure is only applicable to users with land management authority.

Cost Considerations

Overall, improved land management reduces net expenses drastically. Practices designed for maximum land health reduce costs related to inputs, irrigation, and damage from extreme weather, and preserve ecosystems and animal life.

Expanded Mitigation Options

See the *GHG Reduction Formula* section below for online tools to quantify GHG reductions from various conservation practices and management strategies. For agricultural applications, consider developing a Carbon Farm Plan to comprehensively evaluate all elements of your land management strategy.





GHG Reduction Formula

Users are directed to the U.S. Department of Agriculture (2021) COMET-Planner Tool (COMET-Planner) and USFS (2021) Forest Vegetation Simulator (FVS). COMET-Planner is a California-specific tool that was developed for the California Department of Food and Agriculture Healthy Soils Program. COMET-Planner should be used to quantify GHG reductions from conservation practices on cropland, orchard and vineyards, and grazing land. The FVS should be used to quantify GHG reductions from forest management.

GHG Calculation Caps or Maximums

None.

Example GHG Reduction Quantification

The user reduces emissions by implementing grazing management to improve irrigated pasture conditions. The user consults COMET-Planner to quantify the estimated reductions. The project is in Napa County. The user selects “Grazing” for the agricultural system, “Prescribed Grazing” for the conservation practice standard, and “Grazing Management to Improve Irrigated Pasture Condition” for the conservation practice implementation. The practice would be applied to 25 acres. Based on these inputs, the user will reduce GHG emissions by 2 MT CO₂e per year (USDA 2021).

Quantified Co-Benefits

None quantified. Depending on the management strategy, successful implementation of this measure could achieve improved air quality, water conservation, improved public health, and improved ecosystem health.

Sources

- U.S. Department of Agriculture (USDA). 2021. COMET-Planner. Available: <http://www.comet-planner-cdfahsp.com/>. Accessed: March 2021.
- U.S. Forest Service Forest (USFS). 2021. Forest Vegetation Simulator (FVS). Available: <https://www.fs.fed.us/fvs/index.shtml>. Accessed: March 2021.