Ecosystem Services Market Consortium (ESMC)/Ecosystem Services Market Research Consortium (ESMRC) is a non-profit public-private partnership that is transforming decarbonization along the agricultural supply chain through collective action. Our 60+ member organizations spanning the agricultural supply and value chains have collaboratively invested, tested, and launched Eco-Harvest, a harmonized, standardized ecosystem services market for agricultural supply chains. This voluntary market program is an accredited end-to-end digitized solution to decarbonize agriculture and to meet additional natural resource needs of corporates who are making significant investments and operational changes to achieve standards-based, reportable outcomes documenting their progress annually. Eco-Harvest incentivizes, quantifies, and verifies (through independent third-party experts) carbon, greenhouse gas (GHG) and water outcomes annually, paying farmers from the sale of Scope 3 outcomes to corporates.

ESMC published a 2023 report, ‘ESMC Market Supply Analysis for the Western Range Region’, to better understand opportunities in this region for introducing ecosystem services market programs leading to quantifiable environmental benefits. The Western Range region encompasses over 100 million acres in the western United States. This region is primarily characterized by its vast dryland grazing areas, which make up 84% of the agricultural lands. While the semi-arid climate and limited rainfall mean these rangelands have low productivity, the vast expanses of dryland ranges in this region make it an essential consideration for successful ecosystem services programs. Additional land uses in the Western Range region include alfalfa hay, orchards, small grains, and row crops.

The report highlights the potential of several conservation practices identified as the most relevant for the unique ecological profile of the Western Range. Given the prevalence of dryland grazing, practices that apply to this land use offer the greatest opportunities for achieving new environmental benefits and market outcomes. The four most impactful conservation practices identified include Conservation Cover, Prescribed Grazing and Brush Management, Irrigation Water Management, and Retiring Marginal Lands.

Conservation Cover offers great potential environmental improvements but would be challenging to implement in areas with limited rainfall, poor soil conditions, and difficult access. Prescribed Grazing and Brush Management is broadly applicable across the Western Range. While offering fewer environmental benefits than Conservation Cover, these practices likely have greater adoption potential due to ease of implementation. Irrigation Water Management is well established in these regions. While there is a high opportunity for impact, more research is needed to connect water quantity benefits with both water quality and GHG emissions. Retiring Marginal Lands offers large potential to scale multiple benefits and likelihood of adoption. While this practice differs from traditional ESMC market program offerings, it is worthy of consideration in this water limited region.

Based on the information in the report, a scenario is presented to estimate potential outcomes for ESMC in the region. If ESMC were to engage 1,000 farm and ranch operations on approximately 560,000 acres in the region – which represents less than 1% of the estimated
145,000 farms in the Western Range — the annual impacts from this scenario were estimated to be 1.5M tons of CO$_2$e reduction, 560,000 lbs. of nitrogen reduction, 27,000 lbs. of phosphorus reduction, 11,000 tons of sediment removal, and 18,000 acre-feet of reduced irrigation diversions. These significant potential impacts underscore the environmental significance of the Western Range and demonstrate the market potential for scaling beneficial outcomes for agricultural products sourced from this region.