

eco-harvest by ESMC

An Agricultural Producers Guide to Joining the Eco-Harvest Program

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ESMC's Eco-Harvest program pays producers for the environmental and societal benefits from agricultural conservation practices. This guide shows you how to participate in an Eco-Harvest project.

You can use this guide to:

- Learn about Eco-Harvest market projects
- Determine your eligibility
- Learn about enrollment
- Review practice changes options
- Understand Eco-Harvest contracts and payments



Unlock the Full Potential of Your Land with Eco-Harvest: Your Partner in Securing the Future

Transitioning to regenerative agriculture can lead to greater yields and improved soil health. ESMC is a non-profit that rewards agricultural producers who improve the environment through their agricultural practices. Our market program, Eco-Harvest, reduces greenhouse gases, improves water quality, and increases other ecosystem services to benefit society.

With Eco-Harvest, you:

- **Choose Your Path:** Tailor conservation practices to fit the unique needs of your land and crops.
- **Earn for Your Green Efforts:** Receive payments for your environmental stewardship.
- **Pay Zero Entry Costs:** Begin your journey to sustainability with no participation fees.
- **Receive Clear Guidance and Strong Support:** Benefit from transparent program guidelines and the backing of dedicated on-the-ground partners.
- **Ensure Trust in Tested Methods:** Implement conservation practices that are scientifically proven, and industry backed.
- **Retain Your Data:** Maintain complete ownership of your farm's valuable data. Eco-Harvest earned [Ag Data Transparent \(ADT\) certification](#) in December 2023 showcasing our commitment to transparent program operations that protect producer data.

Eco-Harvest market projects are developed, designed, and managed by the Ecosystem Services Market Consortium (ESMC). ESMC's Eco-Harvest program rewards agricultural producers for beneficial environmental outcomes from regenerative agriculture – including increased soil carbon, reduced greenhouse gases, and improved water quality.

Read more about ESMC at www.ecosystemsmarket.org.

“One of the most interesting things we have learned about (through Eco-Harvest participation) is the quality differences in commodities we produce as we continue to apply new management techniques. Farms naturally always want to improve and become more efficient, we believe that farming practices that can show benefits agronomically, economically and are sustainable will build the future of carbon farming.”

*- Michael and Regan Ferguson,
participating producers,
Saskatchewan, Canada*



Why Regenerative Agriculture?

We focus on regenerative agriculture due to the on-farm benefits which can include:

- Improved soil health, tilth, and fertility
- Increased yields
- Reduced soil loss
- Increased soil organic matter
- Improved soil water holding capacity
- Improved plant health and productivity
- Reduced nutrients in surface and ground water
- Increased resiliency of your operation to the impacts of extreme weather

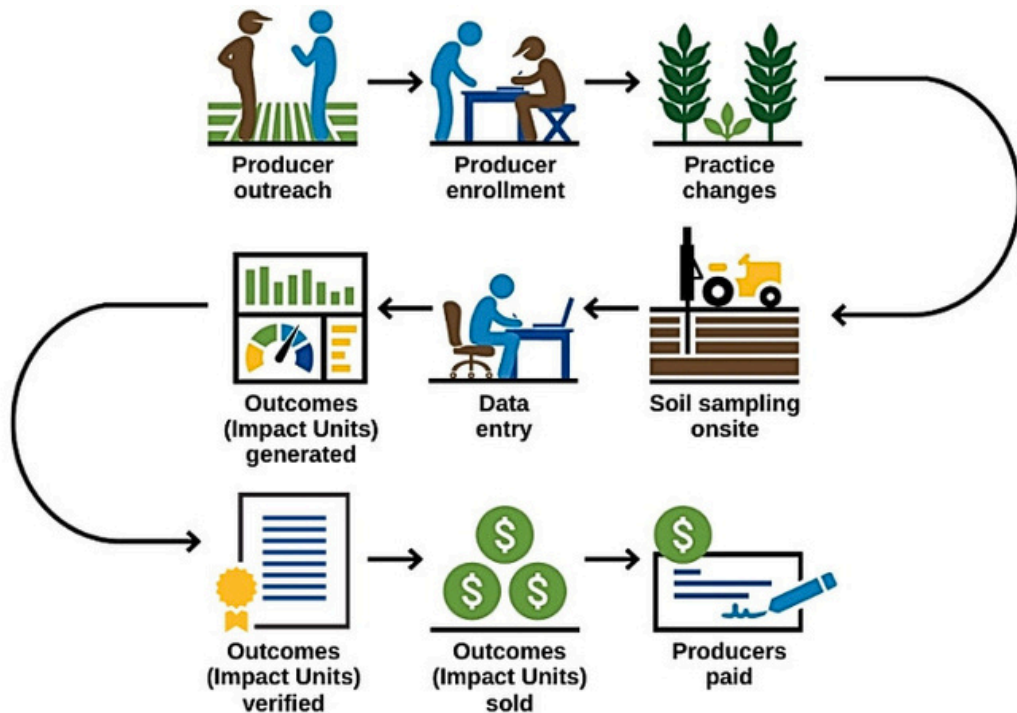
Not only can these factors translate into more net profit, but you also receive Eco-Harvest payments based on quantified outcomes from conservation practices.



How Eco-Harvest Works

In an Eco-Harvest Market Project, you adopt agricultural practice(s) from a menu of approved practice changes. We sell the measured outcomes to corporations working in agriculture and pay you for these outcomes.

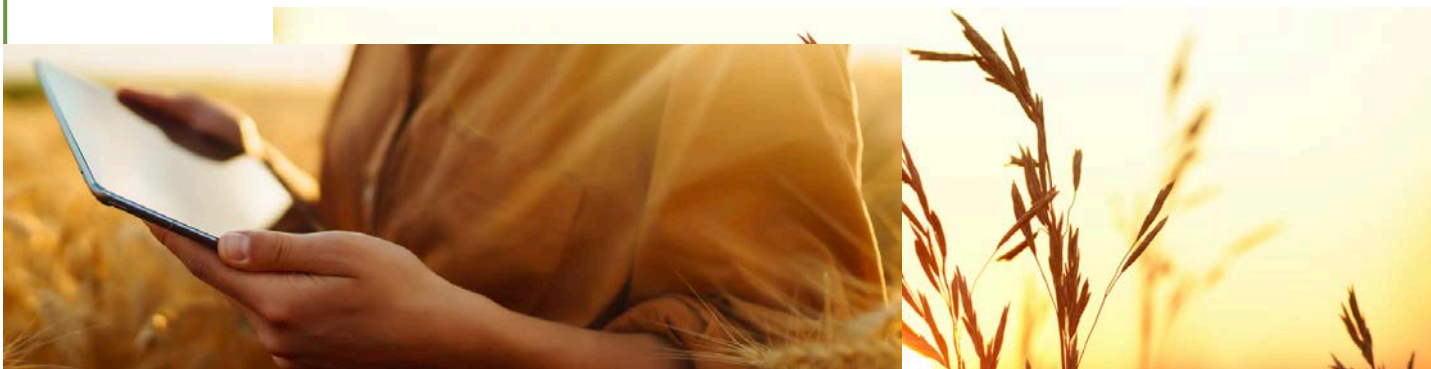
Here's how Eco-Harvest works:



Who is Involved

When you participate in an Eco-Harvest project, you collaborate with a team of partners to help you succeed. They include:

- **Project Managers** are locally based and manage project operations. They support you with questions on enrollment, data entry, and practice change eligibility. They work closely with Eco-Harvest staff.
- **Enrollment Specialists** are your main contact for enrollment and ongoing support. They assist you with data entry, signing agreements, and ensuring you meet project timelines and deadlines.
- **Technical Assistance Providers** help you plan and implement approved practice changes. These experts can work with you to identify which practice change(s) may be best for your geography, soil type, operation, and production system.



Participation Details: Eligible Fields

To ensure you are eligible to participate, the following must be true:

1. Your fields can be enrolled in federal, state, and local cost-share programs that reduce the cost of conservation practice implementation. We encourage you to take advantage of these programs.
2. As a producer, you must adopt conservation practices which go beyond the [minimum standard set by law](#).
3. You must implement new practice change(s) on cropland.
4. You must provide proof of field ownership or a rental agreement.
 - a. Fields **can** be owned by the state or local government.
 - b. Fields **cannot** be federally owned.
 - c. For rented fields, you must have written permission from the landowner to participate.
5. Fields deforested in the past 10 years are ineligible.
6. Your fields cannot have been converted from grassland to cropland in the past 10 years.
7. Your fields enrolled in Eco-Harvest cannot be enrolled in another program related to greenhouse gas reductions such as a credit, offset, impact unit, or claims program. You are welcome to participate in multiple programs as long as each of your fields is enrolled in only a single program.
8. Your fields must be producing specific Eco-Harvest-approved crops for the region. The Eco-Harvest program regions are highlighted in the map on the following page in green.

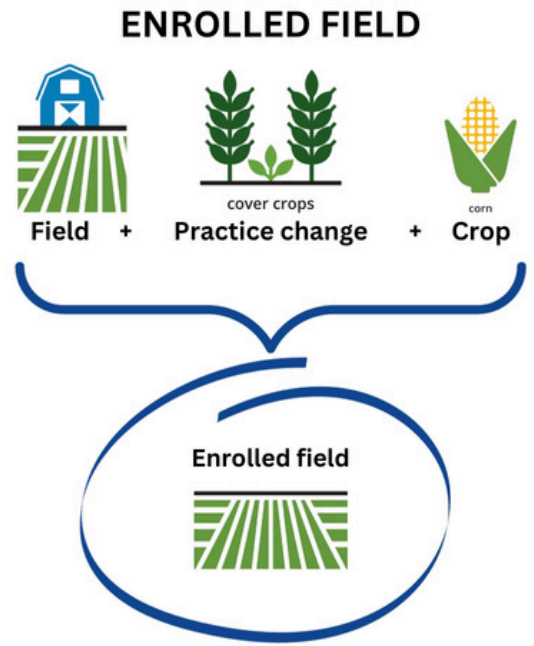


Participation Details: Eligible Fields

Eco-Harvest projects **require that practice changes are tied to a crop and to every enrolled field.**

Fields with eligible crops and practice changes for a project are considered enrolled fields.

The next sections will highlight which crops and which practice changes are eligible for Eco-Harvest market program participation.



Participation Details: Your Crops

Eco-Harvest projects must include one or more of the following **Primary Crops** over the 5-year contract:

- Corn
- Soybeans
- Wheat
- Oats

Additionally, the project can also quantify the following **crops in rotation** with the above **Primary Crops**.

- Alfalfa
- Barley
- Buckwheat
- Canola
- Clover
- Dry Bean
- Flax
- Lentil
- Millet
- Mustard
- Pea
- Peanut
- Popcorn
- Potato
- Pumpkin
- Radish
- Rye
- Ryegrass
- Sorghum
- Sugarbeet
- Sugarcane
- Sunflower
- Sunn Hemp
- Sweet Corn
- Teff
- Triticale
- Turnip
- Vetch
- Watermelon
- Wheatgrass



Participation Details: Practice Changes

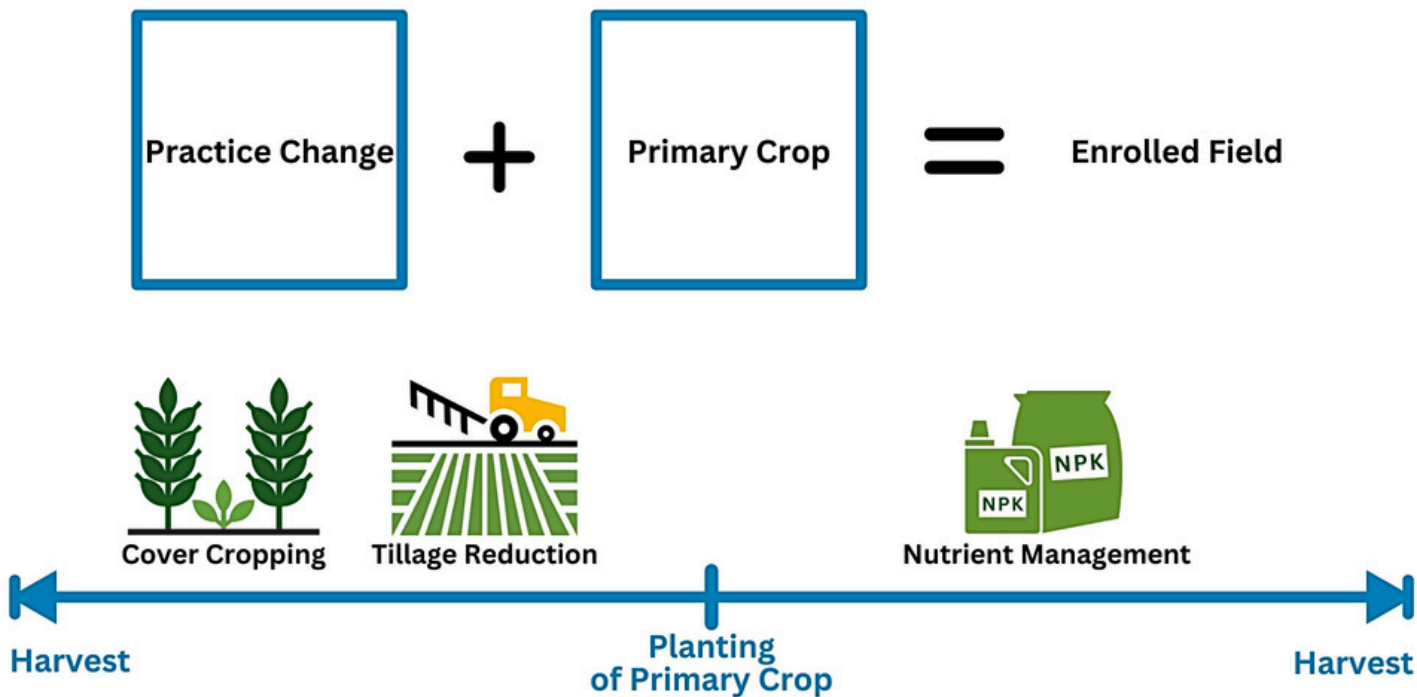
Eco-Harvest offers a variety of practice change options tailored to different projects and crops. Before implementing any practice changes, contact your project manager or enrollment specialist to ensure that your proposed practice change is eligible.

For Eco-Harvest participation, eligible practice changes must be newly implemented on your field.

We encourage you to enroll fields that are also eligible for federal, state, and local cost-share programs such as [EQIP](#), [CSP](#), and other [NRCS](#) programs to take advantage of those incentives.

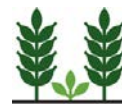
For 2024 projects, Eco-Harvest market project eligibility practice changes include: cover crops, tillage reduction, and nutrient management.

Note that while enrolled in Eco-Harvest, the practice change needs to be applied to the primary crop each year the crop is grown for the length of your contract. The timing of practice changes, and how they relate to the crop, may look something like this:



Practice change details for cover crops, tillage reduction, and nutrient management follow. Please see our [Knowledge Base](#) for our most frequently asked questions relating to specific details on practice changes.





Definition	Types of Impact Units (Outcomes)	Potential Benefits	Implementation
<p>Cover crops are plants that are planted to cover the soil rather than for the purpose of being harvested.</p>	<ul style="list-style-type: none"> • Greenhouse Gas • Water 	<ul style="list-style-type: none"> • Reduce soil erosion • Suppress weeds • Increase soil organic matter • Limit nitrogen leaching • Increase water infiltration • Greater biodiversity • Greater canopy area coverage • Some cover crops can serve a dual purpose as pastureland for livestock and wildlife. 	<p>Typically, a producer plants cover crops in the late summer or fall around harvest and before spring planting of the following year's crops.</p>
Maximize the Eco-Harvest Payment	Example	Data Requirements	Resources
<p>Generally, a producer maximizes the Eco-Harvest payment by growing a cover crop for the longest amount of time and by allowing animals to graze the cover crop.</p>	<p>If selecting cover cropping as the practice change, the cover crop, the field and the next commodity crop that follows the planting of the cover crop are all linked.</p> <p>How it looks: if a producer plants a cover crop(s) before a soy crop, the GHG benefit and the ensuing credits will be linked to the soy crop.</p> <p>The process: During the data collection procedure, producers will be asked if the cover crop was terminated or harvested.</p> <p>If cover crops will not be terminated within the harvest year (e.g. underseeded cover crops), please speak to your ESMC Project Manager to discuss eligibility.</p>	<ul style="list-style-type: none"> • Type of cover crop(s) • Rate of application • Seeding methodology • Planting date • Winter or non-winter termination • Termination date 	<ul style="list-style-type: none"> • General Overview: SARE: Cover Crops for Sustainable Crop Rotations • Cover Crop Economics - Opportunities to Improve Your Bottom Line in Row Crops Video • EQIP Program for Cover Crops • Practical Farmers of Iowa Cover Crop Cost-Share Program • MCCC cover crop selection tool • NECCC cover crop selection tool • SCCC cover crop selection tool





Tillage Reduction

Definition	Types of Impact Units (Outcomes)	Potential Benefits	Implementation
<p>Tillage Reduction describes a reduction in the frequency or intensity of tilling.</p>	<ul style="list-style-type: none"> • Greenhouse Gas • Water Quality 	<ul style="list-style-type: none"> • Reduce reliance on farm machinery and equipment • Reduce fuel and labor costs • Improve soil health • Reduce runoff • Reduce soil erosion • Reduce flooding 	<ul style="list-style-type: none"> • Reduce the number of tillage events • Reduce tillage depth • Tillage implements that reduce soil disturbance
Maximize the Eco-Harvest Payment	Example	Data Requirements	Resources
<p>Minimizing tillage events and depths and using implements to reduce soil disturbance will maximize payments to the producer.</p>	<p>If selecting tillage reduction as the practice change, the new tillage practices, the field and the next commodity crop that follows the new tillage practices are all linked.</p> <p>How it looks: If a producer traditionally tilled their field twice per year at a depth of 8 inches and moved to 2 inches once a year on a wheat crop then the greenhouse gas benefits, and the ensuing credits, will be linked to the wheat crop.</p>	<ul style="list-style-type: none"> • Tillage dates • Tillage implements • Tillage depth • % field residue • If strip till or strip freshener: Widths 	<ul style="list-style-type: none"> • SARE: What is Conservation Tillage? • SARE: Conservation Tillage and Soil Health (Video)





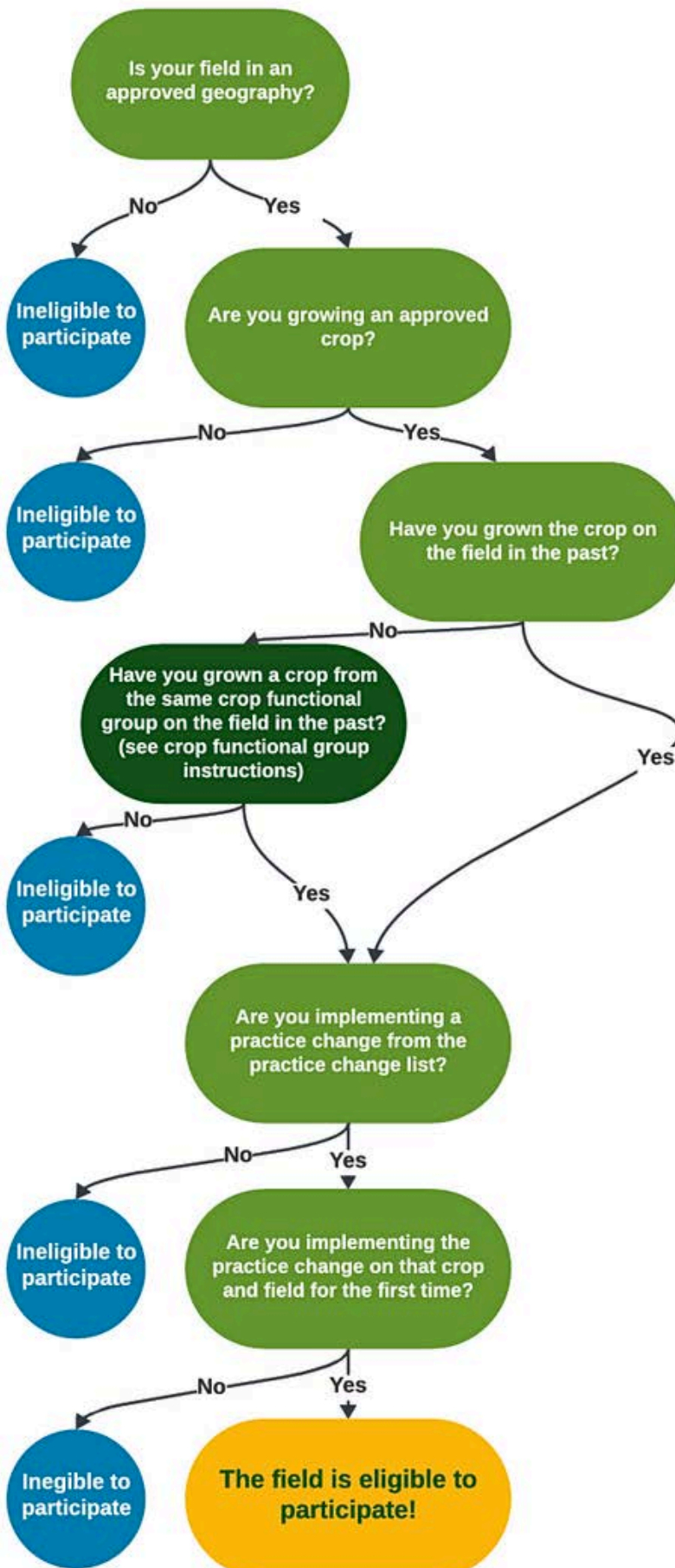
Nutrient Management

Definition	Types of Impact Units (Outcomes)	Potential Benefits	Implementation
<p>Nutrient Management describes modifying the rate, source, placement, and timing of plant nutrients and soil amendments to reduce environmental impacts.</p> <p>Sources of nutrients include but are not limited to commercial fertilizers, animal manures, legume fixation credits, green manures, plant or crop residues, compost, organic by-product, municipal and industrial biosolids, wastewater, organic materials, estimated plant available soil nutrients, and liquid fertilizers applied through irrigation water.</p>	<ul style="list-style-type: none"> Greenhouse Gas Water 	<ul style="list-style-type: none"> Mitigate nitrogen emissions Improve plant health Improve plant productivity Reduce excess nutrients in surface and ground water Reduce emissions of objectionable odors Reduce particulate matter Reduce greenhouse gasses Reduce risk of pathogen spread Improve and maintain soil organic matter 	<ul style="list-style-type: none"> Anhydrous Ammonia Applicator Banded & Incorporated Broadcast Fertigation, Drop, Furrow, Sprinkler, Subsurface drip Foliar Injected Sidedress Surface banded Topdress
Maximize the Eco-Harvest Payment	Example	Data Requirements	Resources
<p>Generally, using fewer, targeted applications and substituting typical chemicals with alternative fertilizers, herbicides, insecticides, fungicides and pesticides increases a producer's payments.</p>	<p>If selecting nutrient management as the practice change then the field, the crop and the practice change nutrient management are all linked.</p> <p>How it looks: if a producer changes a fertilizer application or type, compared to historical practices, on a corn crop then the greenhouse gas benefits, and the ensuing credits, will be linked to the corn crop.</p>	<p>Fertilizer:</p> <ul style="list-style-type: none"> date type rate application method addition of additives if used <p>Custom Fertilizer:</p> <ul style="list-style-type: none"> ESMC also needs, the C:N ratio If liquid, ESMC needs the density, N%, %P205, %K20, %Organic N, %Urea, %Ammonium, %Nitrate and %Ammonia <p>Herbicide, insecticide, fungicide or other regulators/fumigants:</p> <ul style="list-style-type: none"> number of applications application method 	<ul style="list-style-type: none"> NRCS Conservation Practice Standard - Nutrient Management The 4Rs NRCS – SMART Nutrient Management Building Soils for Better Crops - Nutrient Management EPA – Nutrient and Run off Management State-specific nutrient management reduction strategies



Eco-Harvest Decision Matrix

IS MY FIELD ELIGIBLE TO PARTICIPATE?



CROP FUNCTIONAL GROUP INSTRUCTIONS
 If you have not grown the crop, you can still participate if you have grown a crop in the same crop functional group. Crop functional groups are color coded below.

Crop	Crop Functional Group
Barley	C3A
Buckwheat	C3A
Canola	C3A
Durum	C3A
Flax	C3A
Mustard	C3A
Oats	C3A
Potato	C3A
Pumpkin	C3A
Radish	C3A
Ryegrass	C3A
Spring Wheat	C3A
Sunflower	C3A
Triticale	C3A
Turnip	C3A
Watermelon	C3A
Winter Rye	C3A
Winter Wheat	C3A
Clover	C3AN
Dry Bean	C3AN
Lentil	C3AN
Pea	C3AN
Peanut	C3AN
Soybean	C3AN
Sunn Hemp	C3AN
Vetch	C3AN
Cotton	C3AS
Corn	C4A
Millet	C4A
Sorghum	C4A
Sweet Corn	C4A
Teff	C4A
Sugarcane	C4P
Switchgrass	C4P

Participation Details: Enrollment

After you confirm your eligibility with an enrollment specialist for each eligible field, primary crop, and practice change(s), it's time to enroll. Here are the steps:

1. Receive an invitation to create an account in the Eco-Harvest Producer Portal. The [Producer Portal](#) is where you will enter data and sign participation agreements.
2. In the Producer Portal, review and sign business and contractual documents. These include:
 - a. [General Terms & Conditions](#) is signed when first enrolling
 - b. [Privacy Policy](#) clarifies details on data ownership and sharing
3. Enter field boundaries in the Producer Portal. Your enrollment specialist can help you compile this data – we use it to determine which specific fields are being enrolled.
4. Identify practice changes for all your enrolled fields and crops.
5. Enter planned crops for that crop year. The Eco-Harvest team will review your submissions and follow up with any questions.
6. Sign the Producer Agreement in the Producer Portal. The Producer Agreement will include details on your project and a participation timeline.
7. Enroll in BILL, an online payment system, and submit a W9 for electronic payment.
8. Add required historical data. This is described in more detail in the following “Data Requirements” section of this guide.
9. Enter current crop year data once harvest is complete.

Project enrollment deadlines are usually end of the calendar year. For specific deadlines on the project you are interested in, [contact ESMC](#). The timeline on the following page highlights what happens after enrollment.



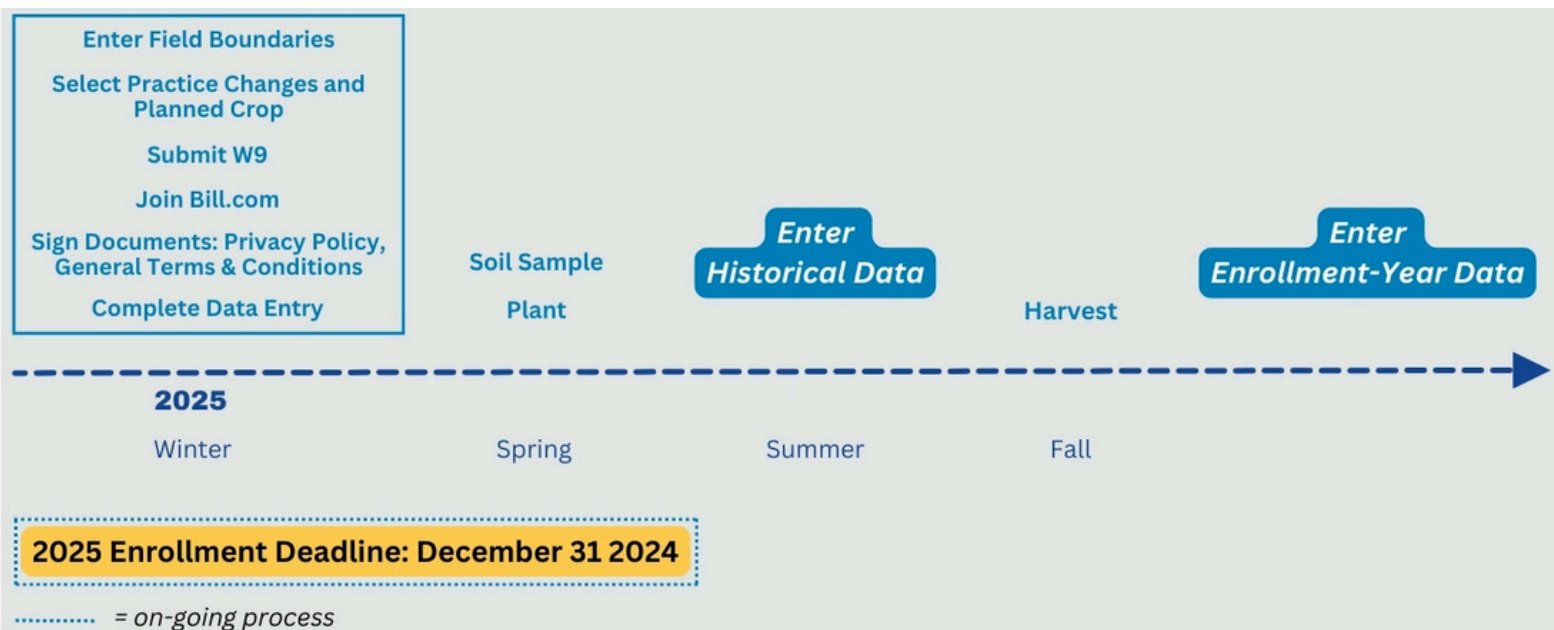
How to Enroll and Timing

The 2025 project enrollment deadline is December 31, 2024. The following timeline highlights what happens after enrollment.

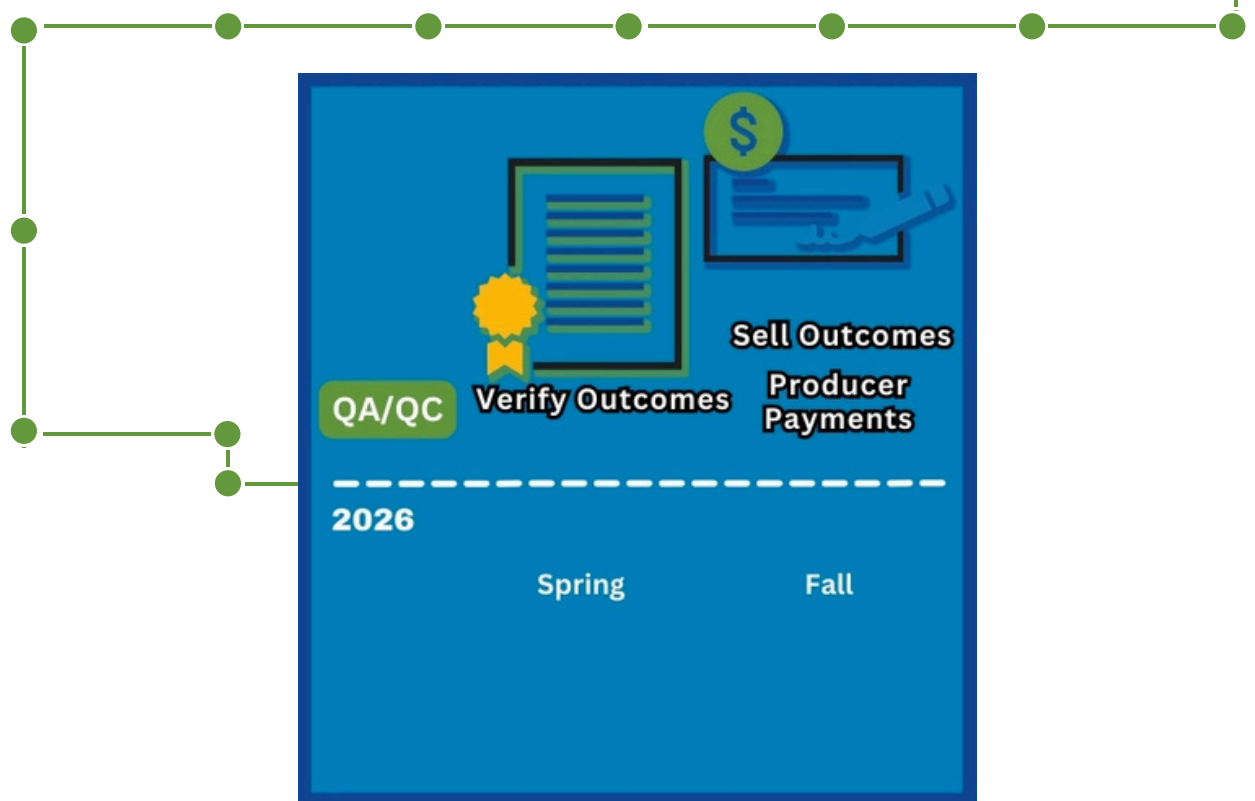


Timeline

- : Activities done by the Producer/ Enrollment specialist
- : Activities done by Eco-harvest



This image serves as a guide and is not representative of every project



How to Enroll and Timing

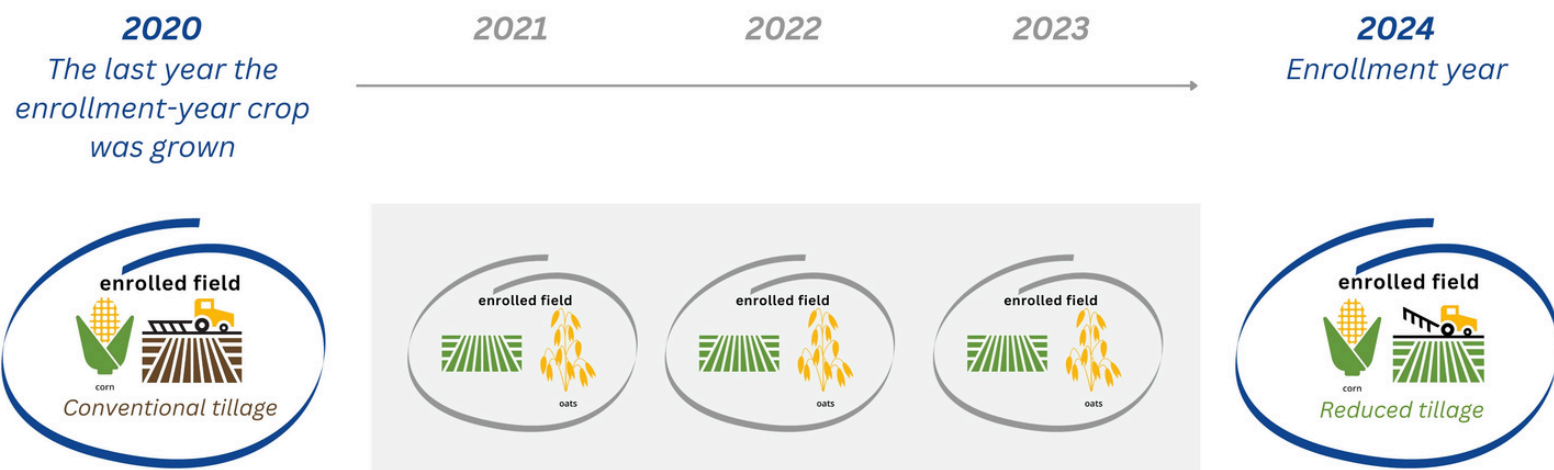
Once you are ready to enroll, you will need to provide current and historical data. These producer data requirements vary by project type, practice change and other factors. At a high level, data are typically required on a field basis for the following:



- Field attributes including location, size, presence of tile drainage
- Crop type(s) and associated yield
- Planting and harvesting activities
- Tillage
- Cover crops
- Fertilizer and pesticides
- Irrigation
- Grazing and herd management
- Electricity and fuel (optional)

Eco-Harvest uses historical data to understand how much soil carbon is stored and how much greenhouse gases are reduced. How many years of data required will depend on whether or not the crop in the enrolled field was grown in the past three years.

1. **ESMC requires historical data from each of the last 3 years (assuming the crop was grown during those years).**
2. **If** the enrollment-year crop was not planted in the previous 3 years, like the example below, we need data from the last year the enrollment-year crop was grown.



Soil Sampling

In the first year of the project, our soil sampling partner will sample all enrolled fields for carbon and soil density (note, fertility testing is not a part of our program at this time). This is at no cost to you. Soil sampling establishes how much carbon is currently in your soil to help determine the change in soil carbon at the end of each year.

Things to know about soil sampling:

- Our soil sampling partner will call you 2 – 4 weeks prior to planting or harvesting to coordinate sampling on your enrolled fields. They will reach out again with a minimum 24-hour notice when their field crews are ready to sample.
- During sampling, you need to allow the soil sampling team access to your enrolled fields.

You can review the results of your soil sample about 3 – 4 months after collection.



Costs for Enrollment

There is no cost to enroll in Eco-Harvest. However, conservation practice changes typically include increased operational costs. Costs that you incur may include cover crop seed, new planting or cultivation equipment, different labor requirements, etc. Some of these expenses may be eligible for NRCS or other state programs. We encourage you to consider using these programs to offset conservation practice implementation costs.

How we Quantify Outcomes

Annually, we use your historical and current year data, first-year soil sample results, and publicly available weather data in a scientific model to calculate the amount of increased carbon stored in the soil and greenhouse gases reduced based on your practice changes. These outcomes form the basis of the quantified and verified outcomes that food and beverage companies purchase to meet commitments to reduce emissions in their supply chain.

As an example of how this works in practice, each year:

1. You adopt eligible conservation practices on fields within an Eco-Harvest region.
2. Eco-Harvest takes soil samples at the project onset in Year 1 and then again in Year 6 (five years after the original sample).
3. An Enrollment Specialist works with you to collect and enter data. You will provide both current year data as well as historical data for any enrolled fields.
4. Eco-Harvest will review data for any missing details.
5. Based on the data, Eco-Harvest quantifies the outcomes.
6. The outcomes are verified by a third party and then packaged into a saleable unit.
7. Food and agricultural companies pay for the outcomes to use in their annual reporting. You continue to own your data; ESMC licenses the data to companies who pay to use the outcomes from your enrolled fields.
8. You are paid by Eco-Harvest.



How Eco-Harvest Makes Payments

We are an outcomes-based program, meaning you are paid based on quantified outcomes from your conservation practice adoption. Producers often earn more income by adopting more practice changes.

Each project has different payments and rates. The information below provides an example of our payment structure. Your project team will provide project-specific payment information.

You will be paid for tonnes of carbon dioxide. Your payments are based on the quantified increase in soil carbon (removals) and reduced greenhouse gases (reductions) from your enrolled fields.

This is translated as: Outcomes payment = outcomes from the field * the market price for the outcome (with a 95/5 split between the producer and Eco-Harvest).

- Timeline: these payments are issued within a year after harvest.
- Example: if you make practice changes that result in 300 tonnes reduced carbon dioxide, and the market price is \$20/tonne, then the outcomes from your project equal \$6,000. You receive \$5,700 (95%) and Eco-Harvest receives \$300 (5%).

Connect with Us

If you would like more information on Eco-Harvest or to connect with our project team, please contact us support@ecoharvest.ag.





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by ESMC



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