

United States Department of Agriculture

CART

Conservation
Assessment & Ranking
Tool

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Conservation Planning and Ranking



What is CART?

- Conservation
- <u>A</u>ssessment
- Ranking
- <u>T</u>ool
 - Program Neutral Planning
 - Streamlined Assessment

- Set of Business Practices to <u>streamline</u> Conservation Planning and Program Delivery
- Program Neutral integrated Information Technology (IT) Software Application



Any USDA Conservation Program!

> Natural Resources Conservation Service

nres usda gov/

Conservation Service

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Pulls that geospatial information along with planner entered data through field visits and targeted questions to identify potential resource concerns.

How does CART work?

CART will integrate with Conservation Desktop (CD) to turn the client's decision into a written conservation plan. Planners will digitize practices within CD.





SANDY PLANNER DISTRICT CONSERVATIONIST

Conservation Plan

MY FARM 4865 W SUMMER RD WINTER, NE 68925

Tract: 301

Conservation Crop Rotation(328)

(CP 328) Temporary Conversion from Irrigated to Dryland. Conservation Cropping System will be adopted that temporarily converts these acres from irrigated to non-irrigated. Refer to Nebraska Conservation Planning Sheet No. 5 (CONSERVATION CROPPING SEQUENCE) for crop rotation requirements. The practice shall be operated and maintained according to the NRCS practice standard. Also, irrigation will cease with the first crop planted after the contract is approved. The water right for these acres will not be used to irrigate other land located elsewhere.

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	Planned			Applied	
Field	Amount	Month	Year	Amount	Date
2	13.2 ac	8	2018		
2	13.2 ac	8	2019		
2	13.2 ac	8	2020		
Total:	13.2 ac		•		

Irrigation Pipeline(430)

High pressure plastic irrigation pipeline will be installed and/or maintained (approximately where shown on the plan map) to convey water from the source to the points where it will be used. Specifications will be obtained prior to installation.

 	••				
	Planned			Applied	
Field	Amount	Month	Year	Amount	Date
2	1600. ft	5	2018		
Total:	1600. ft				

Service

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Client Decision

Score Priority Questions Finalize Score Estimate Cost by Ranking Pool

Planner Ranks

Assessment Practices

Identify applicable

Ranking Pools

Manager selects and approves applications

Contract Wizard

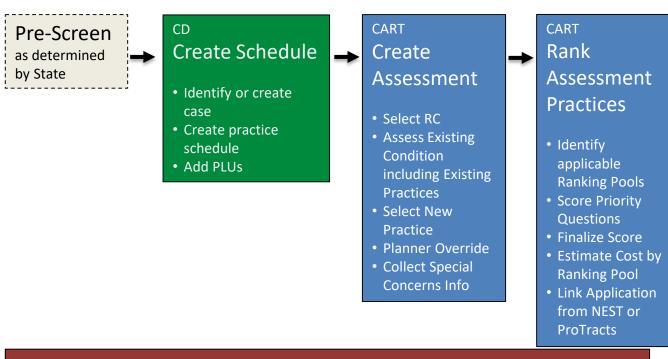
CPA-52





CART Workflow

Field Office - Planning, Assessment and Ranking



ProTracts May Start Application, including eligibility

NEST May Start Application, including eligibility

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The Conservation Assessment Ranking Tool (CART) is designed to assist conservation planners as they assess site vulnerability, existing conditions, and identify potential resource concerns on land unit(s)



Conservation Planning



How does CART work? => Integrating IT

Phase I

Collect & Analyze

- Identify Problem
- Determine Objective
- Inventory Resources
- Analyze Resource Data

Phase II

Decision Support

- Formulate Alternatives
- Evaluate Alternatives
- Make Decision

Phase III

Implementation & Evaluation

- Implementation Requirements
- Implement the Plan

Future

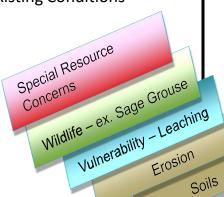
• Evaluate the Plan

Conservation Desktop

Conservation Assessment Ranking Tool

Environmental Assessment

Resource Concerns Planning Criteria (Threshold) Existing Conditions



Conservation Plan

CAPS – Resource Assessment

Conservation Practices Economics

Protracts

Funds Manager

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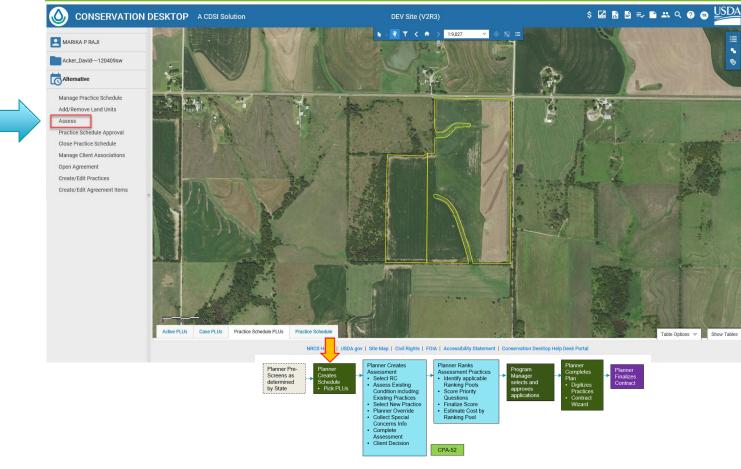
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Slide 3



How does CART Work?



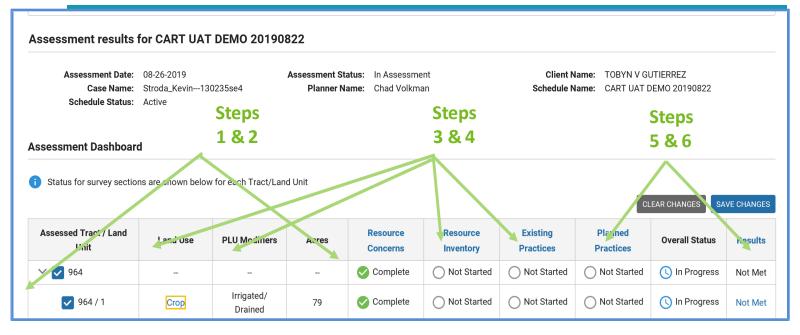


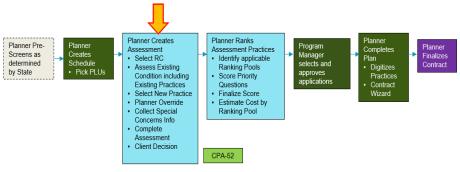
Assessment of resource concerns is determined by the planner's interaction with a client and considers the client's conservation objectives

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How does CART Work? – Planning Steps





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How does CART work? – Steps 1 and 2

Plant Degradation – Plant Structure and Composition – Range-Threshold

Each PLU for range will have a threshold value of 50 set and a benchmark condition set of questions



Results for Land Unit

Resource Concerns	Components	Existing Conditions	Existing Practices	Existing Total	Planned Practices	Plan Total	Threshold
Plant structure and composition	Plant structure and composition	0	0	0	0	0	œ50

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A threshold score is set which is intended to represent the effort needed to attain a target-level of resource conservation using conservation management and conservation practices Natural Resources Conservation Service



How does CART work – Steps 3 and 4

Plant Degradation - Plant Structure and Composition - Range

Existing Conditions

Answer	Existing Condition Points	Reference for assessment condition
None to Slight	60	Interpreting Indicators of Rangeland Health (IIRH) biotic integrity attribute rating of none to slight
Slight to Moderate	51	IIRH biotic integrity attribute rating of slight to moderate
Moderate	20	IIRH biotic integrity attribute rating of moderate



Resource Concerns	Components	Existing Conditions	Existing Practices	Existing Total	Planned Practices	Plan Total	Threshold		
Plant structure and composition	Plant structure and composition	51	0	51	0	51	50		

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Using planning criteria tools (RHA), field evaluation, local knowledge, management, client objectives, planner observation



How does CART work? Existing Conditions & existing practices

Existing Condition - Crop Rotation Credit	Sheet and Rill Erosion
Existing condition credits are based on system benefits for	Points
cover/residue/biomass of all crops and cover crops in the rotation combined	10.000.0000
with the effects of harvesting, grazing and tillage. Individual credits for	
associated practices like crop rotation, cover crop and residue management	
are added to this system level credit.	
are added to this system level credit.	
None – Rapidly Depleting Soil Organic Matter	0
 Soil Conditioning Index is well below zero 	
 Generally fallow, or crops with no durable residue or cover crops, 	
with up to full field tillage.	
Low – Depleting Soil Organic Matter	5
Soil Conditioning Index is just below zero	
Generally, crops with durable residue or cover crops, or part of the	l /
rotation in high residue conserving use crops, with up to full field	
tillage.	
Moderate – Maintaining Soil Organic Matter	15
Soil Conditioning Index is zero or above	
Generally, crops with durable residue or cover crops, or part of the	
rotation in high residue conserving use crops, with reduced tillage or	<i> </i>
no-till.	
High – Building Soil Organic Matter	40
Soil Conditioning Index is well above zero	
Generally high residue conserving use crops or perennial crops with	
full ground cover, not tilled or tilled infrequently.	
- '	

Soil Erosion – Sheet and Rill – Existing Conditions



Results for Land Unit

Trocuito For Earl												
Resource Concerns	Components	Existing Conditions	Existing Practices	Existing Total	Planned Practices	Plan Total	Threshold					
Sheet and rill erosion	Sheet and rill erosion	5	0	5	0	5	40					





How does CART work? => Planned practices









Soil Erosion - Sheet and Rill - Planned Practice

Conservation Practices	Conservation Practice Points
Conservation Crop Rotation (328)	10
Contour Farming (330)	5
Cover Crop (340)	15
Residue and Tillage Management, No-Till	20
(329)	
Residue and Tillage Management,	15
Reduced Till (345)	
Stripcropping (585)	5
Terrace (600)	15

	Results	for	Land	Unit
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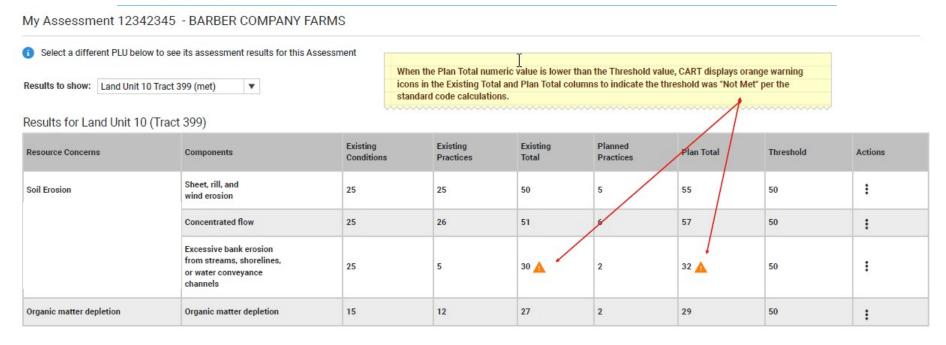
Resource Concerns	Components	Existing Conditions	Existing Practices	Existing Total	Plann Practi	Plan Total	Threshold
Sheet and rill erosion	Sheet and rill erosion	5	15	2	30	5 0	40

Also, uses CPPE (Conservation Practice Physical Effect) values, Conservation Practice benefits and effects by adopting conservation practices





How does CART work? – Overrides



Resource concern met by program and ranking pool:

- Planner Overwrite only changed final Y/N Answer, not point
- May establish program eligibility, such as CSP
- May garner bonus resource concern points for Planned Condition Meeting Threshold

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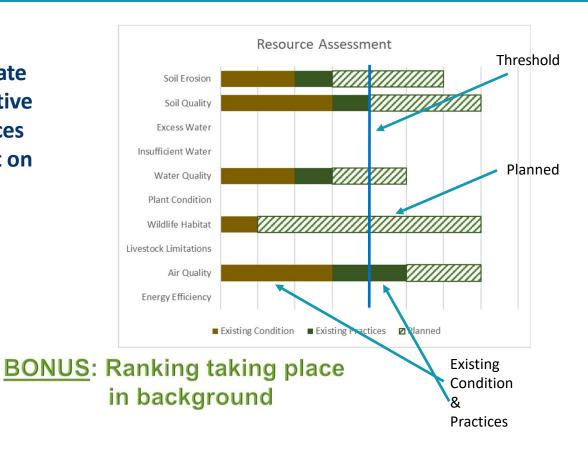




How does CART work? – Analysis and O O O O Formulating Alternative Steps

CART assists
planners illustrate
various alternative
planned practices
and their effect on
the resource
concern.

Tools look at
Evaluating
planned
conservation
practice
alternatives



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Program Ranking

Local flexibility



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Ranking Pool Use 👃 🕒 🕒 🗸

Within CART each FY 2021(funding pools, subaccounts, and/or initiatives) will have a CART ranking pool.

Ranking pools will evaluate client's applications for 5 main areas

- 1. Plan Assessment: Existing Vulnerability
- 2. Plan Assessment: Planned Practice Effects
- 3. Pool Priorities: Resource
- 4. Pool Priorities: Programmatic
- 5. Efficiency

The locally led process can have input on each of these



Pool Resource Priorities 🔷 🔷 🔷









- Resource Priorities will be Ranking Pool Specific and may be either geospatial or question based.
 - Geospatial Based (ex. Priority Watershed)
 - Question Based (ex. Do the practices in the application affect sage grouse?)
- Points awarded can be true/false or graded by priority
- Multiple priorities can be considered for each ranking pool



Pool Programmatic Priorities 👃 🍐

- Programmatic Priorities will be Ranking Pool Specific and may be either geospatial or question based.
 - Geospatial Based (ex. Risk of conversion)
 - Question Based (ex. Veteran Farmer)
- Points awarded can be true/false or graded by priority
- Multiple priorities can be considered for each ranking pool





Plan Benefits from Applicable Practices

Average Annual Practice Cost

Weighted to result in meaningful score as identified by program



Multi-Ranking Pool Evaluation



A Plan Assessment is made up of multiple practices which may be eligible under multiple ranking pools. CART will allow consideration for funding under all applicable ranking pools

- Participants may be considered for funding in as many ranking pools as are applicable
- Plans may receive funding from multiple ranking pools
- CART will assure a practice is not funded twice on the same land unit by separate funding sources



Ranking Pool Weighting

EQIP TEMPLATE FOR RANKING

NATIONAL RANKING TEMPLATE																
TEMPLATE NAME]	EQIP Gener	al							
PROGRAM					EQIP											
					An											
LAND USES					MODIFIERS (the modifiers- must be met and are not or but and)											
	Included		Included		Included		Included		Included		Included		Included		Included	
Crop	4	Grazed		Irrigated		Drained		Organic	L	Water Feature		Protected		Hayed		
Forest	<u> </u>	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Range	- 7	Grazed		Irrigated		Drained		Organic	L	Water Feature		Protected		Hayed		
Pasture		Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Protected		Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Farmstead	Z	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Developed Land	7	Grazed		Imigated		Drained		Organic		Water Feature		Protected		Hayed		
Water	Z	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Other Rural Land		Grazed		Inigated		Drained		Organic		Water Feature		Protected		Hayed		
Associated Ag Land	[4]	Grazed		Imigated	П	Drained		Organic	Г	Water Feature		Protected		Hayed		
Undetermined.		Grazed		Imigated		Drained		Organic		Water Feature		Protected		Hayed		
RESOURCE CONCERN CATEGORIES	Min%	Default	Max%	Included					Notes	(Reasons for In	clusions)					
Air Quanty emissions	2	5	35	₹												
Emmissions of airborne reactive nitrogen	5	20	85	7	1											
Emmissions of greenhouse gases - GHGs	5	20	85	Ī	1											
Emmissions of ozone precursors	5	20	85	7												
Emmissions of particulate matter (PM) and PM precursors	5	20	85	14												
Objectionable odor	0	20	80	· ·												
Total		100														
Aquatic Habitat	2	5	35	Z												
Aquatic habitat for fish and other organisms	5	50	100	7												
Elevated water temperature	0	50	95	7												
Total		100			1											
Concentrated Erosion	0	10	35	7												
Bank erosion from streams, shorelines, or water				Ī	1											
conveyances channels	0	30	100													
Classic gully erosion	0	35	100	Z	1											
Ephemeral gully erosion	0	35	100	Ū.												
Total	v	100	100	Ŀ												
Degraded Plant Condition			25													
_	2	5	35	Ŀ												
Plant productivity and health	5	50	95	₹												
Plant structure and composition	5	50	95	₹												
Total		100														



EQIP TEMPLATE

			NAT	IONAL	RANKI	NG TEM	PLATE									
TEMPLATE NAME]	EQIP Gener	al .							
PROGRAM			EQIP									Rectangular Spin				
LAND USES					MODI	FIERS (the modi	fiers- mı	ıst be me	t and are not	or but ar	ıd)				
	Included		Included		Included		Included		Included		Included		Included		Include	
Сгор	✓	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Forest	√	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Range	√	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Pasture	√	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Protected		Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Farmstead	✓	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Developed Land	√	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Water	√	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
		Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Other Rural Land	_	Grazed		Irrigated		Drained		Organic		Water Feature		Protected		Hayed		
Other Rural Land Associated Ag Land	✓	Grazeu														

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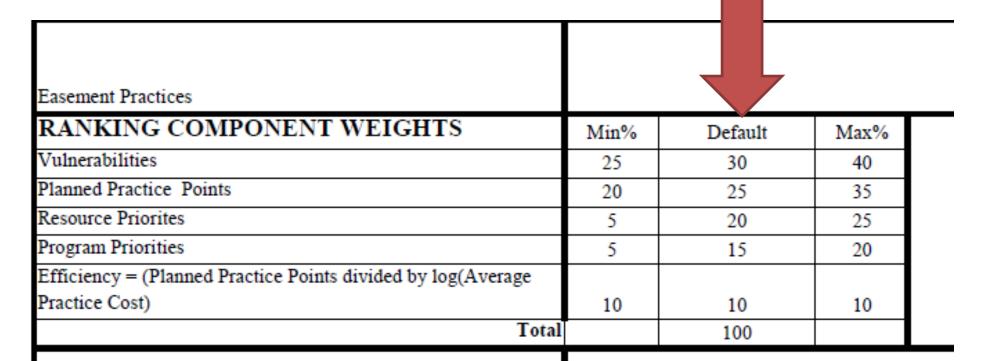
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RESOURCE CONCERN CATEGORIES	Min%	Default	Max%	Included			
Air Quanty emissions	2	5	35	✓			
Emmissions of airborne reactive nitrogen	5	20	85	✓			
Emmissions of greenhouse gases - GHGs	5	20	85	✓			
Emmissions of ozone precursors	5	20	85	✓			
Emmissions of particulate matter (PM) and PM precursors	5	20	85	✓			
Objectionable odor	0	20	80	✓			
Total		100					
Aquatic Habitat	2	5	35	~			
Aquatic habitat for fish and other organisms	5	50	100	4			
Elevated water temperature	0	50	95	✓			
Total		100					
Concentrated Erosion	0	10	35	✓			
Bank erosion from streams, shorelines, or water				✓			
conveyances channels	0	30	100				
Classic gully erosion	0	35	100	✓			
Ephemeral gully erosion	0	35	100	✓			
Total		100					
Degraded Plant Condition	2	5	35	√			
Plant productivity and health	5	50	95	✓			
Plant structure and composition	5	50	95	✓			
Total		100					

Source Water Depletion	2	10	35	4		
Groundwater depletion	5	35	90			
Inefficient irrigation water use	5	35	90			
Surface water depletion	5	30	90			
Total		100				
Storage and Handling of Pollutants	2	5	35	4		
Nutrients transported to groundwater	5	20	80	4		
Nutrients transported to surface water	5	20	80	4		
Pesticides transported to surface water	5	20	80			
Petroleum, heavy metals, and other pollutants transported to groundwater	5	20	80	√		
Petroleum, heavy metals, and other pollutants transported to				√		
surface water	5	20	80			
Total		100				
Terrestrial Habitat	2	5	35	4		
Terrestrial habitat for wildlife and invertebrates	100	100	100	√		
Total		100				
Weather Resilience	2	5	35	✓		
Drifted snow	0	20	100	~		
Naturally available moisture use	0	20	100	~		
Ponding and flooding	0	20	100	4		
Seasonal high water table	0	20	100	4		
Seeps	0	20	100	4		
Total		100				
Wind and Water Erosion	2	10	35	<		
Sheet and rill erosion	5	50	100	<		
Wind erosion	0	50	95	<		
Total		100				
Long-term Protection of Land	0	0	0			
Threat of Conversion						
Loss of functions and values						
Total		0				
Resource Concern Categories Total		100				
Conservation Activities					List Activities (see tabs)	
Structural	all conservation practices					
Vegetative					all conservation practices	
Management	agement all conservation practices and CAPS					
					•	



Local Flexibility to change default info







Thank you!









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