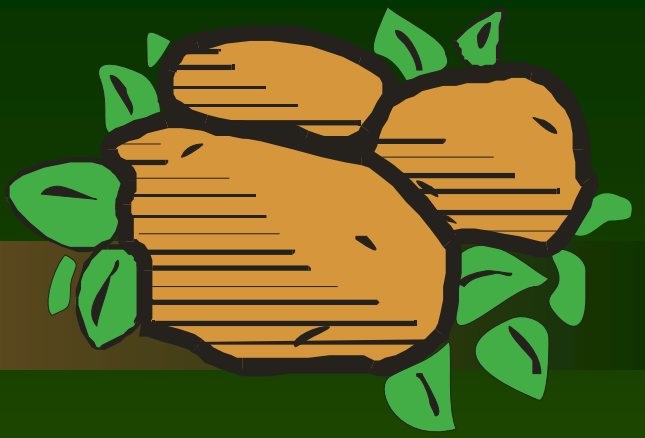
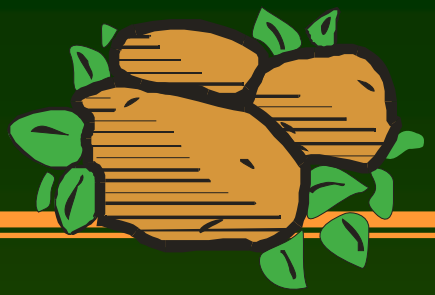


The Wisconsin Healthy Grown Potato Initiative

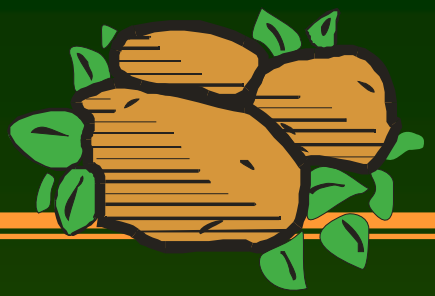
Deana Knuteson , Ted Anchor– UW – Madison
Nutrient and Pest Management Program
Frank Casey – Defenders of Wildlife

WWF/WPVGA/UW Collaboration- History



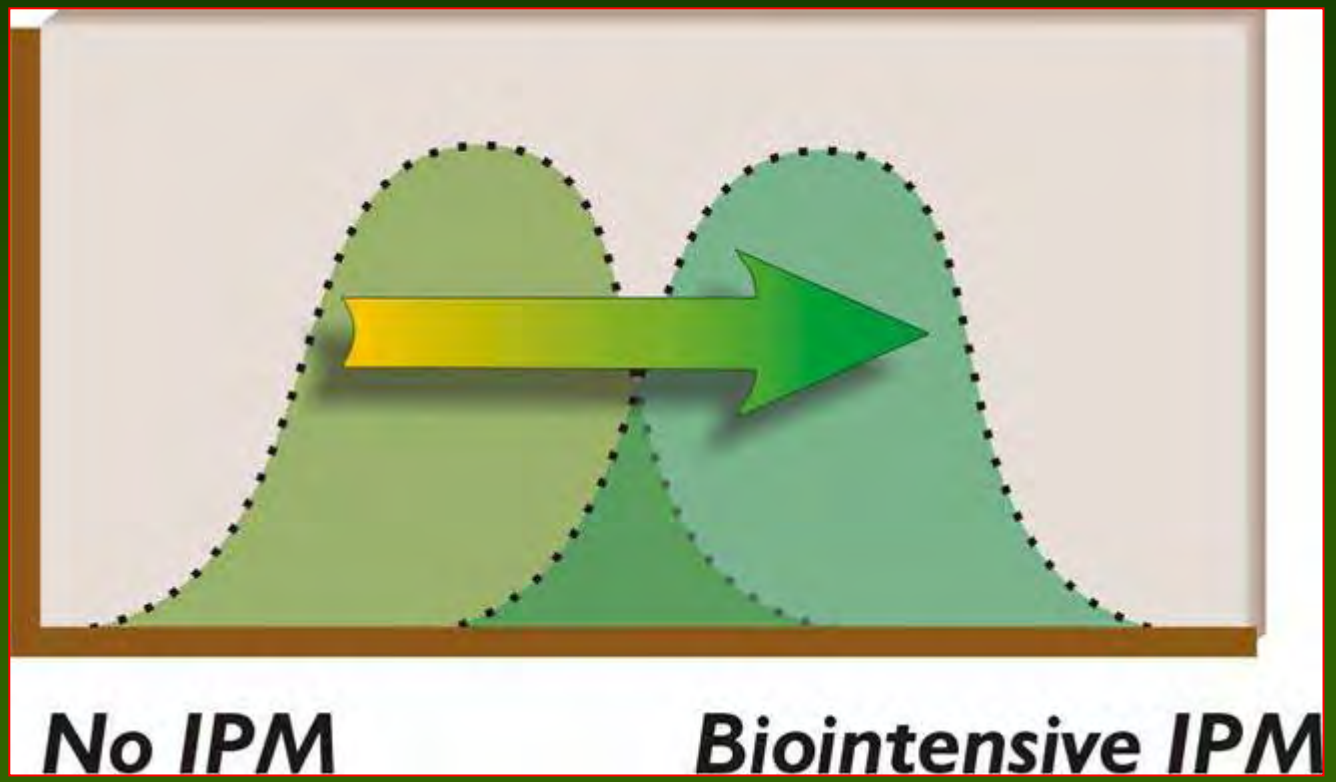
Growers Setting The Stage To Do The Right Thing!

WWF/WPVGA/UW Collaboration - Goals



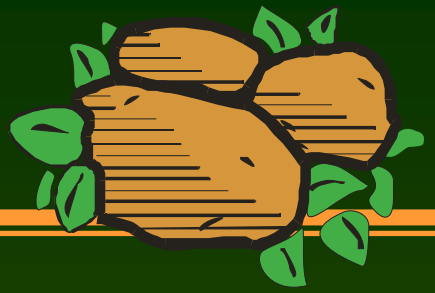
- Reduce pesticide use, reliance and risks
- Increase adoption of biointensive IPM
- Enhance wildlife and ecosystem conservation and protect biodiversity
- Raise consumer demand for ecologically produced potatoes
- Develop and field test measurement methods

Developing Research Based Production Standards

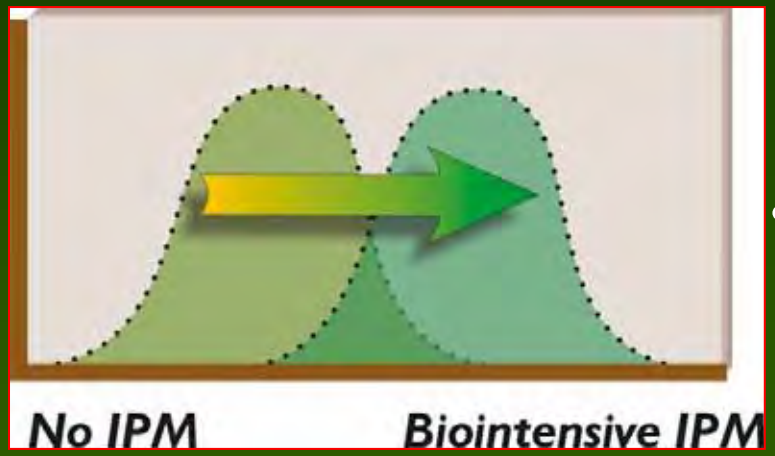


Accelerating BioIPM Adoption

WWF/WPVGA/UW Collaboration - History



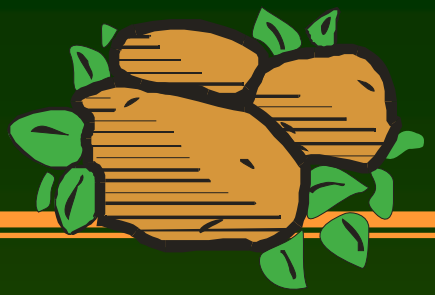
- Field Basis
- Reactive
- Chemical Dependant
- Vulnerable to New Pest
- Resistance
- Vulnerable to Loss of Products



- Area-wide Basis
- Proactive/ Preventative
- Ecosystem/ IPM Dependant
- Lower-risk materials
- Biological Control
- On-farm research
- Data Management

Accelerating BioIPM Adoption

Developing Research Based Production Standards



Certification

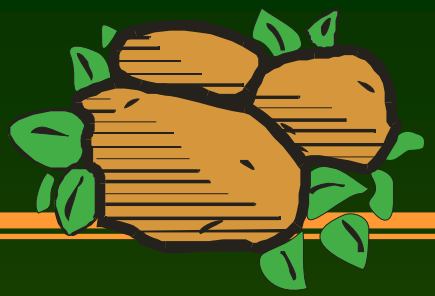
Standards

Label

Chain of Custody

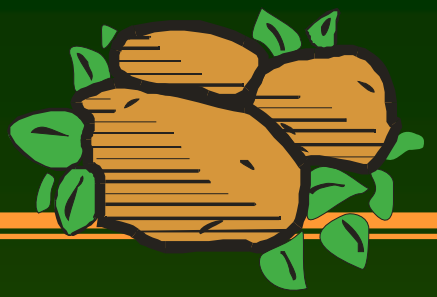
Marketing

WI Eco-Potato Standard Development Structure



- Based on University of Wisconsin research
- All practices researched based, ecologically viable and economical
- Number and cutoff based on previous survey work and measurement instruments developed by the Collaboration – Need baseline data

Eco-label Standards



- **IPM Nine Categories Include**
  - Scouting
  - Information Gathering
  - General Pest Management Decisions
  - Field Management Decisions
  - Weed Management
  - Insect Management
  - Disease Management
  - Soil and Water Quality
  - Storage Management
- **Pesticide Reduction**
- **Ecosystem Restoration Standard - 2006**

Eco-label Standards – Led by UW

WWF/WPVGA/UW Collaboration - Ecological Potato Standards

Farm: _____

Variety: _____

Acres: _____

Please answer the following **for the field which you are certifying**.

Variety Designation:
Short season (SS) = less than 90 days from emergence to final vinekill
Long season (LS) = more than 90 days from emergence to final vinekill

Scouting Section

1A Whose scouting data did you use to make management decisions on this field?
(check only one)

- ☐ Farm Dealer/Co-op = *1 point*
- ☐ Independent Crop Consultant = *5 points*
- ☐ IPM Trained Farm Employee = *4 points*
- ☐ Farm Owner/Manager = *4 points*
- ☐ Farm Employee = *2 points*

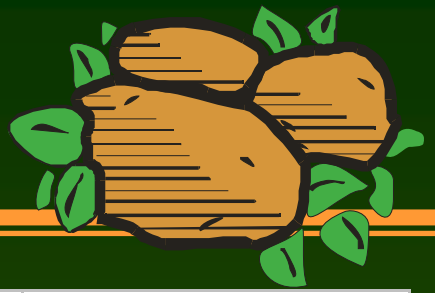
☐ point total for question 1A *possible range 1-5*

1B **Bonus:** If additional scouting data was taken, who provided this data?
(check only one)

- ☐ Farm Dealer/Co-op = *1 point*
- ☐ Independent Crop Consultant = *5 points*
- ☐ IPM Trained Farm Employee = *4 points*
- ☐ Farm Owner/Manager = *4 points*
- ☐ Farm Employee = *2 points*
- ☐ No One = 0 *points*

☐ point total for **bonus** question IB *possible range 0 - 5*

Eco-label Standards



1D What was the most common scouting method?

(check only one)

- ☐ Informal observations during routine farming operations (e.g., while spraying or while going out to check irrigation equipment). *= 0 points*
- ☐ Informal observations of what was happening on the edge of the field. *= 1 point*
- ☐ Crop scouts focused mostly on looking for potential hot spots and spot-checking where problems have occurred in the past. *= 3 points*
- ☐ Crop scouts followed specific patterns along pivot irrigation tracks, along field borders and in the interior of the field. *= 5 points*

☐ point total for question 1D

possible range 0-5

If 0, then stop here.

Auto Eliminate Question

Eco-label Standards

4C Did you plant certified seed?

(check only one)

- ☐ Yes = 3 *points*
- ☐ No = *0 points*

☐ point total for question 4C
possible 0 or 3
If 0, then stop here.

4D How many times were aerial photos (e.g. remote sensing) used during the growing season?

(check only one)

- ☐ Weekly = *3 points*
- ☐ Twice per month = *2 points*
- ☐ One to two times per growing season = *1 point*
- ☐ Never = *0 points*

☐ point total for question 4D
possible range 0-3

4E **Bonus:** Did you use any other types of remote sensing (e.g. satellite images) on this field?

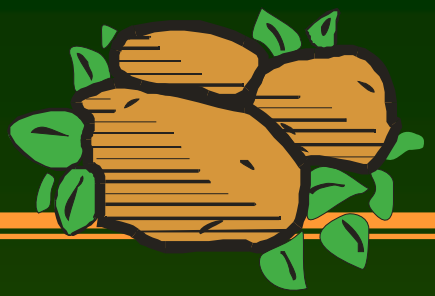
(check only one)

- ☐ Yes = *5 points*
- ☐ No = *0 points*

☐ point total for **bonus** question 4E
possible 0 or 5

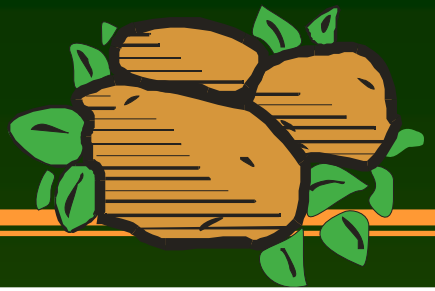
Bonus Question

Eco-label Standards



- **Multi-attribute Toxicity Units**
  - **Indefinite Amount of Points**
  - **Determined by 4 factors**
    - Acute Mammalian Toxicity
    - Chronic Mammalian Toxicity
    - EcoToxicity Factor (for example avian and fish)
    - BioIPM Toxicity Factor (resistance, impact on beneficials, impact on bees)

Eco-label Standards



Pesticide Toxicity

To determine the toxicity units for the season, total the pounds of active ingredient for each compound and multiply by the toxicity value for that compound. Total toxicity units for all compounds sprayed during the growing season.

Maximum toxicity units:

SS = 800 toxicity units per acre for the season.

LS = 1200 toxicity units per acre for the season.

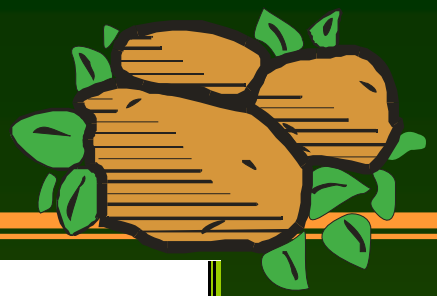
Toxicity Unit Exceptions for Late Blight

If 18 severity values are reached by June 1st, 400 more toxicity units may be used for **fungicides only.**
If 18 severity values are reached by June 15th, 200 more toxicity units may be used for **fungicides only.**

The following conditions apply only when late blight is found in the vicinity (within 25 miles of field)

- If there are 18 severity values and late blight is found in the vicinity in June, than add 400 toxicity units
- If there are 18 severity values and late blight is found in the vicinity after June 30th but before July 15th, than add 300 toxicity units
- If there are 18 severity values and late blight is found in the vicinity after July 15th but before August 1st, than add 200 toxicity units
- If there are 18 severity values and late blight is found in the vicinity in August, than add 100 toxicity units

Eco-label Standards



Aldicarb	Temik®		
Azinphos-methy	Guthion®	307	185
Btt	Novodor®	11	11
Cyfluthrin	Baythroid®	452	14
Carbaryl	Sevin®		
Carbofuran	Furadan®	401	200
Diazinon	Diazanon®	343	103
Dimethoate	Dimethoate/Cygon®	355	143
Disulfoton	Disyston®	541	271
Endosulfan	Thiodan®, Phaser®	271	217
Esfenvalerate	Asana®	482	24
Ethoprop	Mocap®	339	1017
Imidacloprid	Admire®	159	32
Malathion	Cythion®	132	93
Methamidophos	Monitor®	339	338
Methoxomyl	Lannate®		
Oxamyl	Vydate®	440	132
Permethrin	Ambush/Pounce®	288	43
Phorate	Thimet/Phorate®	625	1563
Phosmet	Imidan®	133	134
Piperonyl butoxide	Incite®	59	
Pymetrozine	Fulfill®	123	21
Spinosad	Spinosad®	172	17

Eco-label Standards

Natural Community Farm Level Standard

Note: This section is done for the farm only, it doesn't need to be filled out for each field.

Healthy Grown potato farmers work to restore and manage native ecosystems. This effort brings the entire farm into the ecolabel activities. It protects and conserves the diversity of rare plant or animal species, especially those that are declining in the Central Sands. The overall restoration effort is directed toward six targets (five native plant communities and the endangered Karner Blue butterfly) that are uniquely suited to the Central Sands environment.

11A Have you met with the Collaboration Ecologist and reviewed your individual natural areas documentation?

- ☐ Yes
- ☐ No

11B Do you have an annual plan of work on file that outlines the management priorities for the season being certified?

- ☐ Yes
- ☐ No

If "no" to either question, then stop here.

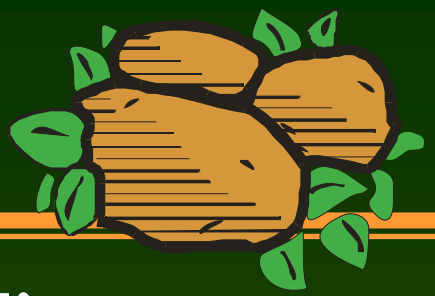
11C Check any that apply. Write in the number of hours and/or costs during 2006 for each. Management needs to correspond to the plan on file.

	Prescribed burn	Mechanical cutting	Invasive species control	Establish native vegetation
Oak savanna	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $
Prairie	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $
River bottom forest	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $
Oak/Pine barrens	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $
Sedge meadow	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $
Karner blue	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $	☐ hrs ☐ $

Natural Community Standard Total = ☐ hrs ☐ $

Minimum of 40 hours or equivalent expenditure required (1 hr = $10)

Five Year Stats – Certified Fields



- **BioIPM:**
  - 208 (2001)
  - 237 (2002)
  - 237 (2003)
  - 241 (2004)
  - 270 (2005)

30% Increase

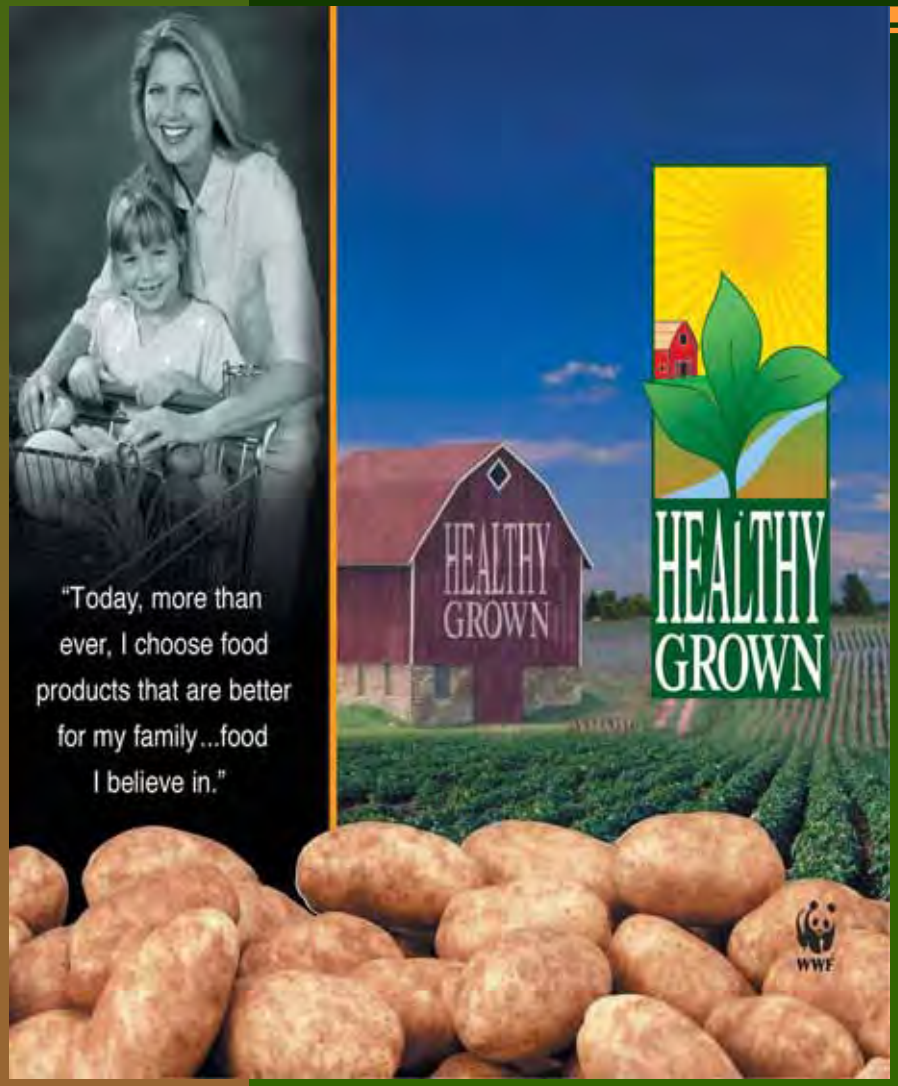
- **Toxicity:**
  - 1111 (2001)*
  - 1052 (2002)*
  - 872 (2003)
  - 925 (2004)*
  - 924 (2005)

21% Decrease

Industry ~ 2000

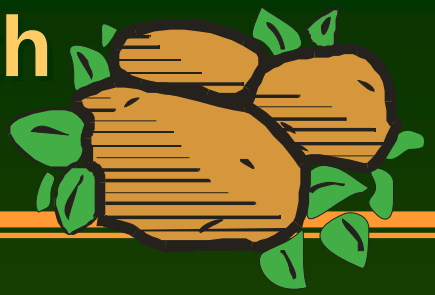
Market Launch

Market Launch



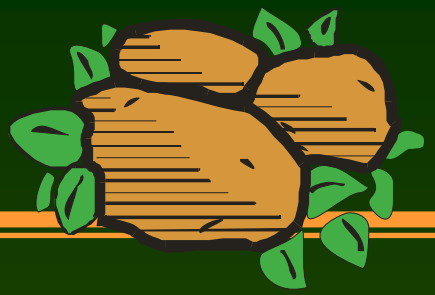
Market Launch

New Initiatives – Partnership with Defenders Of Wildlife



- **Valuing and Compensating Ecosystem Restoration: The Role of Private Markets**

BASIC QUESTION



What can we say about the feasibility and role of private markets in valuing and compensating environmental services (ecological functions) provided by agricultural producers/landowners?

DEFENDERS OF WILDLIFE

THE UNIVERSITY of WISCONSIN MADISON

HEALTHY GROWN

Steps in Valuation and Compensation

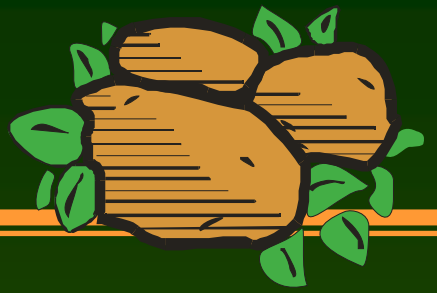
1. **Identify services provided (disservices avoided) from ecosystem restoration**
2. **Identify level (amount) of services**
3. **Value (i.e. price) services**
4. **Define economic/financial mechanisms to compensate ecosystem service values**

DEFENDERS OF WILDLIFE

THE UNIVERSITY of WISCONSIN MADISON

HEALTHY GROWN

Services Provided



- Provisioning Services
  - **Food & Fiber: Priced in the private market place for goods**
- Supporting Services
  - **Pollination**
  - **Invasive Species Control**
  - **Pest Management**
- Regulation Services
  - **Habitat for Wildlife**
  - **Water Purification/Filtration**
  - **Control of Soil Erosion**

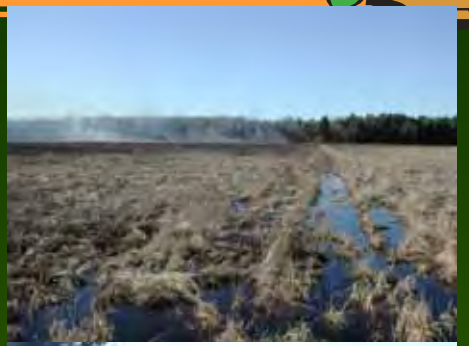
DEFENDERS OF WILDLIFE

THE UNIVERSITY of WISCONSIN MADISON

HEALTHY GROWN

How Does the NCS Work

- Definition of a native ecological zone
- Selecting targets
- Mapping from regional to farm level
- Definition of management practices to restore ecosystem functions



Conservation Target

REGIONAL PLAN-CENTRAL SANDS

Conservation Target

Conservation Target

Conservation Target

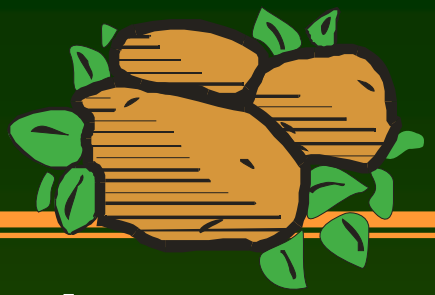
Conservation Target

Conservation Target

Conservation Targets for the Central Sands are chosen that represent the biodiversity of the region

- individual species of concern
- marginalized natural communities

Standards Development



- Should arise from and be integrated into the larger regional conservation goals
- Need for transparent methodology and straightforward, grower-focused management
- Develop a credible, science-based measurement system that can be utilized by non-specialists for certification

DEFENDERS OF WILDLIFE

THE UNIVERSITY of WISCONSIN MADISON

HEALTHY GROWN

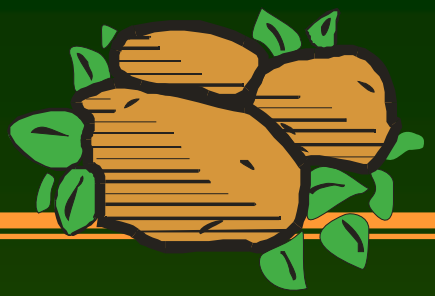
Eco-labels as Compensation

- Consumer knowledge of product

Size of market

- **Willingness to Pay Premium (and how much)**
- **Structure of market and communication along the chain**

Take Home Message



- Viable markets in ecosystem services require units of trade and unit prices
- Market premiums attained through certification and eco-labeling can be a viable alternative but market share is a constraint
- Role for the public sector in guiding market development and conduct
- Complementary Strategies: conservation banks, cost-share of practices, and other incentives to complement private markets

Questions?


GROWN
RUSSET
POTATOES
Net Wt. 10 lbs. (4.54kg)
Produce of USA
RUSSET
POTATOES
and the environment.
PARMESAN POTATO WEDGES