# Natural Resources and Environment

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## V(A). Planned Program (Summary)

### 1. Name of the Planned Program

Natural Resources and Environment

## V(B). Program Knowledge Area(s)

### 1. Program Knowledge Areas and Percentage

| KA Code | Knowledge Area | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|---|---|---|---|---|---|
| 102 | Soil, Plant, Water, Nutrient Relationships | 20% | | | |
| 123 | Management and Sustainability of Forest Resources | 20% | | | |
| 135 | Aquatic and Terrestrial Wildlife | 20% | | | |
| 136 | Conservation of Biological Diversity | 20% | | | |
| 605 | Natural Resource and Environmental Economics | 20% | | | |
| | **Total** | 100% | | | |

## V(C). Planned Program (Inputs)

### 1. Actual amount of professional FTE/SYs expended this Program

| Year: 2007 | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| Plan | 5.0 | 0.0 | 0.0 | 0.0 |
| Actual | 3.4 | 0.0 | 0.0 | 0.0 |

### 2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

| Extension | | Research | |
|---|---|---|---|
| Smith-Lever 3b & 3c<br>123239 | 1890 Extension<br>0 | Hatch<br>0 | Evans-Allen<br>0 |
| 1862 Matching<br>0 | 1890 Matching<br>0 | 1862 Matching<br>0 | 1890 Matching<br>0 |
| 1862 All Other<br>2561 | 1890 All Other<br>0 | 1862 All Other<br>0 | 1890 All Other<br>0 |

## V(D). Planned Program (Activity)

### 1. Brief description of the Activity

To address the issues under this planned program area, a number of publications were authored that provided not only information, but also specific instruction for taking action. Videos were also produced as away for people to better understand the issues related to a certain topic. The mass media was also an important method of getting information to the public when considering issues such as the West Nile Virus. Still other issues such as animal feeding operations are very specific to a single operator, so one on one consultation is most appropriate. Collaborations with research, various agencies, commodity organizations and various associations have proven beneficial in program determination and development. For example, cooperators for the West Nile virus surveillance activities included MSU county Extension agents, environmental health specialists, reservation collage instructors, private citizens, mosquito district personnel, county maintenance personnel and commercial pesticide applicators.

### 2. Brief description of the target audience

The audience interested in topics under this program area are not generally those who are "regular" clientele of Extension. Small land owners, for example, could benefit greatly from Extension information but often don't know about this resource. The general public is interested in knowing where West Nile is likely to be a problem. Those with wells are interested in knowing if they are producing water that is safe to drink. At the same time, livestock producers and forest landowners are generally familiar with Extension and are interested in programs like Undaunted Stewardship and Forest Stewardship programs which give them the tools to have a profitable operation while being sensitive to the environment. In some cases, the issues covered are controversial and are emotionally charged.

## V(E). Planned Program (Outputs)

### 1. Standard output measures

**Target for the number of persons (contacts) reached through direct and indirect contact methods**

| | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| **Year** | **Target** | **Target** | **Target** | **Target** |
| **Plan** | 3500 | 45230 | 400 | 400 |
| 2007 | 7409 | 10934 | 200 | 150 |

### 2. Number of Patent Applications Submitted (Standard Research Output)

**Patent Applications Submitted**

| Year | Target |
|---|---|
| **Plan:** | 0 |
| 2007: | 0 |

**Patents listed**

### 3. Publications (Standard General Output Measure)

**Number of Peer Reviewed Publications**

| | Extension | Research | Total |
|---|---|---|---|
| **Plan** | | | |
| 2007 | 0 | 0 | 0 |

## V(F). State Defined Outputs

**Output Target**
**Output #1**

**Output Measure**

I. Forestry

- Number of private forest owners who attend one/two workshops so they will understand the timber sale process allowing them to complete a successful timber sale.
- Number of people attending the forestry mini-college, a one-day educational program that includes 10 forestry related courses that provide attendees with knowledge or sources of assistance necessary to implement their forest stewardship plans.

| Year | Target | Actual |
|---|---|---|
| 2007 | 500 | 375 |

**Output #2**

**Output Measure**

II. Small Acreage Lands

- Number of one-on-one consultation and group workshops for small acreage land owners on pest control, weed management and other topics.
- Number of people who participate in Field Days and demonstration opportunities for land owners to observe techniques and best practices.

| Year | Target | Actual |
|---|---|---|
| 2007 | 500 | 0 |

**Output #3**

**Output Measure**

III. Environmentally Sensitive Management Systems.

- Provide one-on-one assistance for developing management plans. (Forestry, Animal Feeding Operations, etc.) Number of consultations. Number of demonstrations of sprayer calibrations, GPS usage, and other technical practices that provide environmental protection.

| Year | Target | Actual |
|---|---|---|
| 2007 | 500 | 0 |

**Output #4**

**Output Measure**

IV. Wildlife Interface - Ground Squirrel Control

- Numbers of people who attend workshops, meetings, agent training, tours and demonstrations
- Numbers of people who request information as a result of reading a newspaper article.
- Numbers of people who request a MontGuide (fact sheet) or other publications on ground squirrels.

| Year | Target | Actual |
|---|---|---|
| 2007 | 2000 | 0 |

## V(G). State Defined Outcomes

| O No. | Outcome Name |
|---|---|
| 1 | SHORT TERM Forestry<br>• Participants will learn the necessary steps for selling timber and what resources are available to them for assistance.<br>• Attendees will receive information they can use to meet their individual forest stewardship objectives. Small Acreages<br>• Producers and small acreage landowners will become aware of insect, weed and disease infestations as they are developing so they can make management decisions in a timely manner.<br>• Applicators will learn the risks associated with applying pesticides and safety precautions recommended to mitigate those risks, while at the same time, learn techniques in applying chemical appropriately.<br>• Producers will learn to use the GPS in locating weed or other problem areas. Environmentally Sensitive Management Systems<br>• Producers will understand the current rules and regulations relative to animal feeding operations and how to evaluate their own operation. This also applies to forestry plans, grazing land plans and any other plans appropriate to the individual operation.<br>• Producers will learn to identify and manage their particular IPM issue or natural resource concern. Wildlife Interface - Ground Squirrel Control<br>• Number of forage producers and landowners who learn how to determine the economic impact of ground squirrels.<br>• Percent of forage producers participants who learn proper timing and implementation of control techniques and methods appropriate to their operations. MEDUIM TERM<br>• Landowners will develop a plan and implement activities that will enhance the sustainability of their forests.<br>• Landowners will implement activities their individual stewardship objectives. Forestry<br>• Landowners will develop a plan and implement activities that will enhance the sustainability of their forests.<br>• Landowners will implement activities their individual stewardship objectives. Small Acreages<br>• Landowners will implement best management practices in addressing weed issues.<br>• Number of producers/small landowners who have adopted weed, crop, pest and forage management strategies. Environmentally Sensitive Management Systems<br>• Producers/Landowners will adopt practices outlined in their CNMP plans. (applies to other planning efforts)<br>• Producers/landowners will adopt practices that will address their specific IPM problem. Wildlife Interface - Ground Squirrel Control<br>• Number of forage producers who implement practices which effectively reduce or eliminate ground squirrel damage to their forage crops. Long Term:<br>• The number of dollars saved from damage by ground squirrels to forage crops.<br>• Rangeland forage will improve, soils will be protected, run-off will be reduced, and potential hazards from ground squirrel holes will be reduced. LONG TERM Forestry<br>• Montana's private landowners will be managing their forests to meet their individual stewardship objectives and so the forests lands continue to provide environmental, economic and social benefits to Montana citizens. Small Acreages<br>• Local landowners will become more profitable while protecting the environment. Environmentally Sensitive Management Systems<br>• All operations that develop and implement a CNMP protect ground and surface water, apply manure at agronomic rates, and utilize technologies that allow them to better operate and/or monitor their operation. All operations will remain economically viable and environmentally friendly. |

| | |
|---|---|
| 2 | FORESTRY: Participants will learn steps for selling timber and what resources are available to them for assistance; receive information they can use to meet their individual forest stewardship objectives; develop a plan and implement activities that will enhance the sustainability of their forests; will manage their forests to meet their objectives and so the forests lands continue to provide environmental, economic and social benefits to all. |
| 3 | SMALL ACREAGE LAND OWNERS: Small acreage owners will become aware of insect, weed and disease infestations as they are developing so they can make management decisions in a timely manner; implement 'best' management practices in addressing weed issues; adopt weed, crop, pest and forage management strategies appropriate to their property; small acreages will become more profitable while protecting the environment. |
| 4 | RANGELAND/PASTURE MANAGEMENT: Number of ranches certified as Undaunted Land Stewardship; number of acres involved in land stewardship program; number of changes in grazing management and resources monitoring practices; visitor feedback. |
| 5 | WATER QUALITY: Number of people who have tested their wells and received the interpretation for the test; number of people who have made changes resulting from the test; number of people who have a better understanding of the Coal Bed Methane issue and feel better about making informed decisions or forming opinions. |
| 6 | PEST MANAGEMENT: Applicators will learn the erisks associated with applying pesticides and safety precautions recommended to mitigate those risks; learn rechniques in applying chemical appropriately, use GPS in locating weed or other problem areas; learn to identify and manage their particular IPM issue or natural resource concern; will adopt practices that will address specific IPM problem. |
| 7 | ENVIRONMENTALLY SENSITIVE MANGEMENT SYSTEMS: |

Natural Resources and Environment
**Outcome #1**

**1. Outcome Measures**

*Not reporting on this Outcome for this Annual Report*

**2. Associated Institution Types**

**3a. Outcome Type:**

**3b. Quantitative Outcome**

| Year | Quantitative Target | Actual |
|---|---|---|

**3c. Qualitative Outcome or Impact Statement**

**Issue (Who cares and Why)**

**What has been done**

**Results**

**4. Associated Knowledge Areas**

| KA Code | Knowledge Area |
|---|---|

## V(H). Planned Program (External Factors)

**External factors which affected outcomes**

Natural Disasters (drought,weather extremes,etc.)
Economy
Public Policy changes
Government Regulations
Competing Public priorities
Competing Programmatic Challenges
Populations changes (immigration,new cultural groupings,etc.)

**Brief Explanation**

In 2007, the weather had a significant role in program determination and development for natural resources and the environment.Hot, dry conditions in a large part of the state put stresses on crops and pastures in small or large acreages and wildfires were prevalent in forest and grass lands.Weeds and pests were able to expand under these stressful conditions. Public policy, public priorities and economic gains have impacted the Coal Bed Methane issue. It is a controversial problem that is emotionally charged yet most people want information they can trust and believe as they form opinions and/or make decisions. The forestry industry is also challenged by governmental and public policy regulation

## V(I). Planned Program (Evaluation Studies and Data Collection)

**1. Evaluation Studies Planned**

Before-After (before and after program)
During (during program)
Time series (multiple points before and after program)
Case Study

## Evaluation Results

## Key Items of Evaluation