

# Natural Resources

Natural Resources

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

### 1. Name of the Planned Program

Natural Resources

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

### 1. Program Knowledge Areas and Percentage

| KA Code      | Knowledge Area                                    | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|--------------|---|-----------------|-----------------|----------------|----------------|
| 101          | Appraisal of Soil Resources                       |                 |                 | 5%             |                |
| 102          | Soil, Plant, Water, Nutrient Relationships        |                 |                 | 8%             |                |
| 111          | Conservation and Efficient Use of Water           |                 |                 | 3%             |                |
| 112          | Watershed Protection and Management               |                 |                 | 5%             |                |
| 123          | Management and Sustainability of Forest Resources |                 |                 | 9%             |                |
| 132          | Weather and Climate                               |                 |                 | 2%             |                |
| 133          | Pollution Prevention and Mitigation               |                 |                 | 5%             |                |
| 135          | Aquatic and Terrestrial Wildlife                  |                 |                 | 43%            |                |
| 136          | Conservation of Biological Diversity              |                 |                 | 9%             |                |
| 201          | Plant Genome, Genetics, and Genetic Mechanisms    |                 |                 | 3%             |                |
| 206          | Basic Plant Biology                               |                 |                 | 2%             |                |
| 402          | Engineering Systems and Equipment                 |                 |                 | 4%             |                |
| 511          | New and Improved Non-Food Products and Processes  |                 |                 | 2%             |                |
| <b>Total</b> |   |                 |                 | 100%           |                |

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

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

| Year: 2008    | Extension |      | Research |      |
|---------------|-----------|------|----------|------|
|               | 1862      | 1890 | 1862     | 1890 |
| <b>Plan</b>   | 0.0       | 0.0  | 6.3      | 0.0  |
| <b>Actual</b> | 0.0       | 0.0  | 9.0      | 0.0  |

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

| Extension           |                | Research       |                |
|---------------------|----------------|----------------|----------------|
| Smith-Lever 3b & 3c | 1890 Extension | Hatch          | Evans-Allen    |
| 0                   | 0              | 967022         | 0              |
| 1862 Matching       | 1890 Matching  | 1862 Matching  | 1890 Matching  |
| 0                   | 0              | 1152157        | 0              |
| 1862 All Other      | 1890 All Other | 1862 All Other | 1890 All Other |
| 0                   | 0              | 6685           | 0              |

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

**1. Brief description of the Activity**

MAFES scientists conducted research on Maine’s ground water and surface water resources. They studied Maine native animal and plant species and their habitats and investigated basic biology related to photosynthesis. They published peer-reviewed journal articles and other publications and presented findings at professional meetings, to state and federal resource managers, to schools and at other public venues.

**2. Brief description of the target audience**

Other scientists in plant biology, marine biology, animal biology, evolutionary biology, aquaculture, phycology, molecular biology; teachers at all levels; directors of aquariums and museums, exhibit halls, etc.; cancer biologists and pharmaceutical companies; endangered species biologists/managers; policy makers; state regulatory agencies; environmental consultants

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

**1. Standard output measures**

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

|             | <b>Direct Contacts<br/>Adults</b> | <b>Indirect Contacts<br/>Adults</b> | <b>Direct Contacts<br/>Youth</b> | <b>Indirect Contacts<br/>Youth</b> |
|-------------|-----------------------------------|-------------------------------------|----------------------------------|------------------------------------|
| <b>Year</b> | <b>Target</b>                     | <b>Target</b>                       | <b>Target</b>                    | <b>Target</b>                      |
| <b>Plan</b> | 0                                 | 0                                   | 0                                | 0                                  |
| 2008        | 0                                 | 0                                   | 0                                | 0                                  |

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

**Patent Applications Submitted**

|              |               |
|--------------|---------------|
| <b>Year</b>  | <b>Target</b> |
| <b>Plan:</b> | 0             |
| 2008:        | 0             |

**Patents listed**

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

**Number of Peer Reviewed Publications**

|             | <b>Extension</b> | <b>Research</b> | <b>Total</b> |
|-------------|------------------|-----------------|--------------|
| <b>Plan</b> | 0                | 16              |              |
| 2008        | 0                | 25              | 25           |

**V(F). State Defined Outputs**

**Output Target**

**Output #1**

**Output Measure**

# of other types of publications

| <b>Year</b> | <b>Target</b> | <b>Actual</b> |
|-------------|---------------|---------------|
| 2008        | 14            | 18            |

**Output #2**

**Output Measure**

# of papers presented at professional meetings

| <b>Year</b> | <b>Target</b> | <b>Actual</b> |
|-------------|---------------|---------------|
| 2008        | 38            | 54            |

**Output #3**

**Output Measure**

# of research projects completed

| <b>Year</b> | <b>Target</b> | <b>Actual</b> |
|-------------|---------------|---------------|
| 2008        | 1             | 0             |

**V(G). State Defined Outcomes**

| O No. | Outcome Name  |
|-------|---|
| 1     | # of complete chloroplast gene sequences submitted to GenBank for public use for <i>Vaucheria litorea</i>   |
| 2     | # of people increasing their knowledge about the interactions between seals and Atlantic salmon, annually   |
| 3     | # of people increasing their knowledge about the contribution of watershed nutrient exports to non-point pollution and nutrient cycling in Maine rivers and coastal waters  |
| 4     | # of lakes from which data are used in a database to quantify statistical relationship and to develop empirical models  |
| 5     | # of new software programs created to evaluate borehole flow profile data collected using borehole geophysics   |
| 6     | # of new ground-water-modeling programs created to simulate ground-water flow   |
| 7     | # of people improving their understanding of habitat requirements for marsh bird species of management concern in Maine, annually   |
| 8     | # of people developing a better understanding of patterns of adaptive divergence in wild fish populations and the relevance of evolution in fish conservation management, annually  |
| 9     | # of state and/or federal agencies using information on marsh bird species occurrence and habitat requirements in making assessments and recommendations on development proposals near wetlands   |
| 10    | # of state agencies using information on marsh bird species occurrence and habitat requirements to develop recovery strategies for rare marsh bird species  |
| 11    | # of new recommendations for maintaining water quality in Maine rivers and minimizing adverse impacts of non-point pollution  |
| 12    | # of state agencies using information on watershed nutrient exports for developing new recommendations for maintaining water quality in Maine rivers and minimizing the impacts of non-point pollution  |
| 13    | # of state agencies using information about the biology of rare wildlife species in Maine to help to create policies to protect species and habitats  |
| 14    | Number of public school children and other visitors to the area using a checklist for birds for the Dwight B. Demeritt Forest in Orono/Old Town, Maine, and a checklist for birds for the Penobscot Experimental Forest in Bradley/Eddington, Maine |
| 15    | Number of Internet-accessible databases containing what may be the largest and most complete set of ecological and physiological data on a wide variety of songbirds from North America.  |
| 16    | # of lake associations, such as Congress of Lake Associations, promoting maintenance of healthy lake foodwebs   |
| 17    | # of management agencies using measurement of lake foodweb structure in their lake assessment and education programs  |
| 18    | # of management agencies using information on seal behavior to create management plans  |
| 19    | # of rare marsh bird species affected by changes in harvest regulations   |
| 20    | % decrease in nutrient enrichment of Maine rivers and coastal waters  |
| 21    | Conserving native fishes  |
| 22    | Conservation of endangered sturgeon   |
| 23    | New uses for Maine's abundant wood resource   |

**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
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (new invasive species)

**Brief Explanation**

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

**1. Evaluation Studies Planned**

- Before-After (before and after program)
- During (during program)
- Comparison between locales where the program operates and sites without program intervention

**Evaluation Results**

{No Data Entered}

**Key Items of Evaluation**  
{No Data Entered}