V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Fishery Management (Aquaculture)

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
<th>%1862 Extension</th>
<th>%1890 Extension</th>
<th>%1862 Research</th>
<th>%1890 Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>307</td>
<td>Animal Management Systems</td>
<td>100%</td>
<td></td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

V(C). Planned Program (Inputs)

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

<table>
<thead>
<tr>
<th>Year: 2009</th>
<th>Extension</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1862</td>
<td>1890</td>
</tr>
<tr>
<td>Plan</td>
<td>0.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Actual</td>
<td>0.0</td>
<td>0.3</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th></th>
<th>Extension</th>
<th>Research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smith-Lever 3b &amp; 3c</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>1890 Extension</td>
<td>15341</td>
<td>0</td>
</tr>
<tr>
<td>Hatch</td>
<td>0</td>
<td>9160</td>
</tr>
<tr>
<td>1862 Matching</td>
<td>12490</td>
<td>0</td>
</tr>
<tr>
<td>1890 Matching</td>
<td>0</td>
<td>12490</td>
</tr>
<tr>
<td>1862 All Other</td>
<td>13105</td>
<td>0</td>
</tr>
<tr>
<td>1890 All Other</td>
<td>20355</td>
<td></td>
</tr>
</tbody>
</table>

V(D). Planned Program (Activity)

1. Brief description of the Activity

Work will be performed in fishery management under such conditions as pond nutrient loading, aquatic vegetation infestation and pond leaks.

2. Brief description of the target audience

All aquaculture farmers in Oklahoma.

V(E). Planned Program (Outputs)

1. Standard output measures
<table>
<thead>
<tr>
<th>2009</th>
<th>Direct Contacts Adults</th>
<th>Indirect Contacts Adults</th>
<th>Direct Contacts Youth</th>
<th>Indirect Contacts Youth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>200</td>
<td>300</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Actual</td>
<td>350</td>
<td>380</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

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

Patent Applications Submitted

Year: 2009
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

<table>
<thead>
<tr>
<th>2009</th>
<th>Extension</th>
<th>Research</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plan</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Actual</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number of Research Projects completed on Fishery Management.

<table>
<thead>
<tr>
<th>Year</th>
<th>Target</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
V(G). State Defined Outcomes

<table>
<thead>
<tr>
<th>O. No.</th>
<th>OUTCOME NAME</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Number of farmers learning new fishery management techniques.</td>
</tr>
<tr>
<td>2</td>
<td>Number of farmers using new fishery management techniques.</td>
</tr>
<tr>
<td>3</td>
<td>Farmers who have improved their production efficiency and raised their profits with the new fishery management techniques.</td>
</tr>
</tbody>
</table>
Outcome #1

1. Outcome Measures
   Number of farmers learning new fishery management techniques.

2. Associated Institution Types
   ● 1890 Extension

3a. Outcome Type:
   Change in Condition Outcome Measure

3b. Quantitative Outcome
<table>
<thead>
<tr>
<th>Year</th>
<th>Quantitative Target</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>200</td>
<td>2</td>
</tr>
</tbody>
</table>

3c. Qualitative Outcome or Impact Statement

   Issue (Who cares and Why)
   Home owners in urban areas often become pond caretakers through community covenants and home owners associations. The housing development is centered around a large pond. The pond watershed includes the houses. These neighborhoods are often upscale and have professional lawn services. The result is high nutrient levels from lawn and garden fertilization entering the pond and creating nuisance aquatic plant and algae problems with attendant consequences of fish kills and odors.

   What has been done
   During 2009, on-site visits were made to individual pond owners, home owners associations and representatives of these associations. Pond problems were evaluated and recommendations made concerning remedies for existing problems and methods of preventing future problems. Education was concentrated on nutrient reduction in the watershed and annual pond maintenance.

   2009,

   Results
   Pond owners were generally very receptive to proposed solutions to problems. They were interested in working with lawns service enterprises to reduce phosphorus and nitrogen applications to lawns. Some home owners associations produced a newsletter sent to all members. Best Management Practices for lawn application of fertilizer and other pond related information was included in newsletters. Aeration devices were installed in some ponds. Overall improvement in urban pond water quality and consequently, watershed streams is likely to occur in the addressed areas.

4. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>307</td>
<td>Animal Management Systems</td>
</tr>
</tbody>
</table>
Outcome #2

1. Outcome Measures
   Number of farmers using new fishery management techniques.

2. Associated Institution Types
   ● 1890 Extension

3a. Outcome Type:
   Change in Action Outcome Measure

3b. Quantitative Outcome

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantitative Target</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>20</td>
<td>2</td>
</tr>
</tbody>
</table>

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Home owners in urban areas often become pond caretakers through community covenants and home owners associations. The housing development is centered around a large pond. The pond watershed includes the houses. These neighborhoods are often upscale and have professional lawn services. The result is high nutrient levels from lawn and garden fertilization entering the pond and creating nuisance aquatic plant and algae problems with attendant consequences of fish kills and odors.

What has been done
During 2009, on-site visits were made to individual pond owners, home owners associations and representatives of these associations. Pond problems were evaluated and recommendations made concerning remedies for existing problems and methods of preventing future problems. Education was concentrated on nutrient reduction in the watershed and annual pond maintenance.

Results
Pond owners were generally very receptive to proposed solutions to problems. They were interested in working with lawns service enterprises to reduce phosphorus and nitrogen applications to lawns. Some home owners associations produced a newsletter sent to all members. Best Management Practices for lawn application of fertilizer and other pond related information was included in newsletters. Aeration devices were installed in some ponds. Overall improvement in urban pond water quality and consequently, watershed streams is likely to occur in the addressed areas.

4. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>307</td>
<td>Animal Management Systems</td>
</tr>
</tbody>
</table>

Outcome #3

1. Outcome Measures
   Farmers who have improved their production efficiency and raised their profits with the new fishery management techniques.

2. Associated Institution Types
3a. Outcome Type:

Change in Condition Outcome Measure

3b. Quantitative Outcome

<table>
<thead>
<tr>
<th>Year</th>
<th>Quantitative Target</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Home owners in urban areas often become pond caretakers through community covenants and home owners associations. The housing development is centered around a large pond. The pond watershed includes the houses. These neighborhoods are often upscale and have professional lawn services. The result is high nutrient levels from lawn and garden fertilization entering the pond and creating nuisance aquatic plant and algae problems with attendant consequences of fish kills and odors.

What has been done
During 2009, on-site visits were made to individual pond owners, home owners associations and representatives of these associations. Pond problems were evaluated and recommendations made concerning remedies for existing problems and methods of preventing future problems. Education was concentrated on nutrient reduction in the watershed and annual pond maintenance.

Results
Pond owners were generally very receptive to proposed solutions to problems. They were interested in working with lawns service enterprises to reduce phosphorus and nitrogen applications to lawns. Some home owners associations produced a newsletter sent to all members. Best Management Practices for lawn application of fertilizer and other pond related information was included in newsletters. Aeration devices were installed in some ponds. Overall improvement in urban pond water quality and consequently, watershed streams is likely to occur in the addressed areas.

4. Associated Knowledge Areas

<table>
<thead>
<tr>
<th>KA Code</th>
<th>Knowledge Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>307</td>
<td>Animal Management Systems</td>
</tr>
</tbody>
</table>

V(H). Planned Program (External Factors)

External factors which affected outcomes
● Natural Disasters (drought, weather extremes, etc.)

Brief Explanation
External factors did not affect outcomes.

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

1. Evaluation Studies Planned
   ● During (during program)
Evaluation Results

Overall improvement in urban pond water quality at specific sites and consequently improvement in the quality of some watershed streams.

Key Items of Evaluation

- Increase in water quality for specific residential ponds.