Assessment of Angler Attitudes Towards Eurasian Otters (*Lutra lutra*) in Scotland

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Gained popularity during the Victorian-era (19th Century)
- Railway development made Scottish countryside more accessible
- Fly fishing is main method of angling in Scotland
- 90% of Scotland's land area of 7.9 million ha was owned by 1,380 private land owners
- Sport was reserved for the gentry
Present Day Recreational Fishing in Scotland

- Internationally renowned & major asset to Scottish ecotourism
  - Still management largely through private estates

- 2 National angling associations
  - Over 120 Scottish recreational angling clubs

- Approximately 10.8 m salmon/sea trout anglers
  - Expenditure of £85.6 m
Popular Scottish Gamefish Species

- Principal gamefish
  - Atlantic Salmon (*Salmo salar*)
  - Brown trout (*Salmo trutta fari*)
  - Sea trout (*Salmo trutta trutta*)

- Spring salmon runs and sea trout rod catches show general declines since rod catch statistics were first recorded in 1952
Eurasian otter (*Lutra lutra*)

- Historically widespread throughout Europe
- Feeds on a range of fish and amphibians
- Severe declines documented through 1950’s to 1970’s (PCBs & organochorines)
- Water quality improvement & legal protection allowed natural recovery
- Now present in every county where formerly extirpated in Britain
Otter hunting is one of the oldest sports in Britain.
- Dated back to the 1100s
- Otterhound specifically bred for the purpose

Primarily conducted to limit fish predation.
- Also a sport for the gentry

Predator management is as old as livestock husbandry

Stemmed from competition for food resources

Now a result of competition for sport-related resources

Gamekeepers oversee land management and ghillies oversee riverine management

"Humane and targeted predator control is an essential part of effective game & wildlife conservation" (GWCT)
Predatory nature of otters has generated a lot of media attention in the UK

- Scotland: mainly positive media or wildlife/informational documentaries
- England: media focused on otters is much more varied
- Media messages are often posed as UK-wide notions
Objectives

1. How knowledgeable/familiar are anglers with otters in Scotland?
2. Do anglers view otters as an important part of their fishing experience?
3. Do anglers perceive otters to be a threat to their recreation?
4. How do angler attitudes towards otters compare with their attitudes towards piscivorous birds?

Osprey (*Pandion haliaetus*)
Grey heron (*Ardea cinerea*)
Sawbill ducks (*Subfamily Merginae*)
Great cormorant (*Phalacrocorax carbo*)
Background: Scotland

- Total area 78,772 km²
- Population 5.3 million
- 20% of Scottish land is managed for sporting purposes
  - contributes £400 million/yr to Scottish economy
- Recreational angling contributes £113 million to Scottish economy
- Top 5 salmon rivers in Scotland
  - Tweed
  - Tay
  - Spey
  - Dee
  - Deveron
Recreational anglers were surveyed along rivers
- July-Sept. 2013
- June-Sept. 2014

Surveying was focused within the Highland and Grampian regions
- Don, Dee, Deveron, & Spey

Online survey component
- Made available throughout the year to Scottish angling club members
Survey Components

- Demographic information
- Angling preferences
- Attitudes towards viewing wildlife
- Familiarity with otters in Scotland
- Attitudes towards otters
  - Likert statements
  - Open-ended questions
- Piscivorous birds
  - Familiarity
  - General attitude
  - Identification
### Results: Demographics

<table>
<thead>
<tr>
<th>Predominant Attribute</th>
<th>Total Count</th>
<th>Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total no. of surveys</td>
<td>375</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>53 ±15</td>
<td></td>
</tr>
<tr>
<td>Predominant country of residence</td>
<td>UK</td>
<td>99%</td>
</tr>
<tr>
<td>Predominant gender</td>
<td>Male</td>
<td>90%</td>
</tr>
<tr>
<td>Predominant level of education</td>
<td>Bachelor</td>
<td>37%</td>
</tr>
<tr>
<td>No. of yrs fishing in Scotland</td>
<td>35 ±17</td>
<td></td>
</tr>
<tr>
<td>Anglers that fish exclusively in Scotland</td>
<td>51%</td>
<td></td>
</tr>
</tbody>
</table>

#### Participant Fishing Preference

- **Multiple freshwater game**: 50%
  - Salmon: 14%
  - Trout: 20%
  - Other: 17%
- **Salmon**: 14%
- **Trout**: 20%
- **Other**: 17%

Multiple freshwater game: salmon, sea trout, brown trout, & grayling

**Fig 1.** Participant fishing preference
1. How much knowledge/familiar are anglers with otters in Scotland?

**Fig. 2** Number of participants that have seen or read about otters in Scotland.

- **Yes in the wild**: 97%
- **Read about it**: 7%
- **Heard from friend**: 4%
- **Not sure**: 0%

**Fig. 3** Frequency of otter sightings while fishing.

- **Frequently**: 72%
- **Occasionally**: 24%
- **Once/rarely**: 4%

**Fig. 4** Number of participants that have seen TV/read media reports on otters.

- **Yes**: 71%
- **No**: 28%
- **Not sure**: 1%

**Fig. 5** General message of media reports.

- **Positive**: 57%
- **Negative**: 2%
- **Both**: 13%
- **n/a**: 28%
- **Once/rarely**: 7%
2. Do anglers view otters as an important part of their fishing experience?

![Pie chart showing attitudes towards otters as part of fishing experience.]

- **Agree/Agree**: 86%
- **Neutral**: 15%
- **Strongly Disagree/Disagree**: 9%
- **No Opinion**: 5%

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![Pie chart showing attitudes towards selecting fishing sites for wildlife opportunities.]

- **Agree/Agree**: 72%
- **Neutral**: 15%
- **Strongly Disagree/Disagree**: 9%
- **No Opinion**: 4%

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**Fig. 6** “Viewing wildlife is an important part of your fishing experience.”

**Fig. 7** “The opportunity to view wildlife is important in selecting a fishing site.”

**Fig. 8** “I believe the presence of otters in an indicator of a healthy aquatic environment.”

**Fig. 9** “I would enjoy seeing otters near rivers where I fish.”
3. Do anglers perceive otters to be a threat to their recreation?

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly agree/Agree</th>
<th>Neutral</th>
<th>Disagree/Strongly Disagree</th>
<th>No opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;I feel that otters decrease the number of fish available to anglers&quot;</td>
<td>31%</td>
<td>26%</td>
<td>38%</td>
<td>5%</td>
</tr>
<tr>
<td>&quot;I believe otters pose a threat to game fish populations such as salmon and trout&quot;</td>
<td>24%</td>
<td>23%</td>
<td>49%</td>
<td>4%</td>
</tr>
<tr>
<td>&quot;I would be concerned if the otter population in Scotland declined&quot;</td>
<td>73%</td>
<td>13%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>&quot;I believe it is important to conserve and protect otters&quot;</td>
<td>76%</td>
<td>12%</td>
<td>7%</td>
<td>5%</td>
</tr>
</tbody>
</table>
4. How do angler attitudes towards otters compare with their attitudes towards piscivorous birds?

“Do you feel that this species is a nuisance/pest to anglers on Scottish waterways”

- **Osprey** (*Pandion haliaetus*): 5% yes, 92% no, 4% no opinion
- **Otter** (*Lutra lutra*): 15% yes, 71% no, 15% no opinion
- **Grey heron** (*Ardea cinerea*): 22% yes, 72% no, 6% no opinion
- **Sawbill ducks** (*Merginae subfamily*): 37% yes, 42% no, 21% no opinion
- **Great Cormorant** (*Phalacrocorax carbo*): 75% yes, 17% no, 8% no opinion
1. Anglers visiting Scottish waterways generally are very familiar with otters

2. Viewing wildlife is seen as a positive addition to the fishing experience
   - Strong belief that otters are a sign of a healthy river
   - Anglers enjoy seeing otters while fishing

3. While many anglers feel that otters may decrease the number of fish available, they do not feel that otters pose a major threat to their sport

4. Anglers generally express favorable attitudes towards piscivorous wildlife
   - Behavior and local density of a species may influence attitudes
Support for the ongoing use of the Eurasian otter as a flagship species
- One of the Big 5 in Scotland
- High public profile

Anglers are willing to share Scottish waterways with otters
- Symbolizes a healthy aquatic environment

“Nature recovering to what it used to be like”

“It has as much right to the countryside as humans”
Acknowledgements

Department of Biology and Natural Resources, Frostburg State University

The many anglers for coming out of the river to talk!