Control method: **Shooting crows**

Assumptions

Best practice is followed in accordance with the Standard Operating Procedure S6.

Shooter uses appropriate shotgun and ammunition, is competent, and judges shot placement and range accurately. For crows the preferred method is a shot to the centre of the chest with a shotgun.

Wounding rates should be low if best practice is followed (but it is recognised that crows are often shot by non-professionals and with air weapons).

A single bird is targeted at a time.

Shooting is conducted during daylight hours.

Shooting takes place under Natural England General Licence WML-GL04 [96]. Under this licence, shooting may only be conducted where the authorised person is satisfied that appropriate legal methods of resolving the problem such as scaring and proofing are either ineffective or impracticable. Shooting may legally be conducted during the breeding period but this period is not covered by this assessment.

Shooting may have limited value in bird control, but may be useful as part of wider management effort, e.g. as part of a scaring approach.

The impacts in Part A of the assessment were considered for a number of birds feeding together. The first bird would be naïve but the impact would increase for each successive bird shot in a single shooting exercise.

Crows may suffer fear or distress for a short time before being shot if another bird in the flock is shot first. In such cases, crows may retreat to a nearby tree, in the meantime, exhibiting natural 'flight or fight' stress response as when encountering a predator. These endocrine responses are short-term and stress hormone levels return to normal quickly (Munck et al., 1984). Birds which have retreated when frightened by the sound of a shot may subsequently return to the feeding area and be shot. Therefore when a particular bird is shot it may have suffered a mild impact for a few minutes beforehand.

### PART A: assessment of overall welfare impact

<table>
<thead>
<tr>
<th>DOMAIN 1 Water or food restriction, malnutrition</th>
<th>No impact</th>
<th>Mild impact</th>
<th>Moderate impact</th>
<th>Severe impact</th>
<th>Extreme impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>No impact</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>DOMAIN 2 Environmental challenge</th>
<th>No impact</th>
<th>Mild impact</th>
<th>Moderate impact</th>
<th>Severe impact</th>
<th>Extreme impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>No impact</td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DOMAIN 3 Disease, injury, functional impairment</th>
<th>No impact</th>
<th>Mild impact</th>
<th>Moderate impact</th>
<th>Severe impact</th>
<th>Extreme impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>No impact</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>DOMAIN 4 Behavioural or interactive restriction</th>
<th>No impact</th>
<th>Mild impact</th>
<th>Moderate impact</th>
<th>Severe impact</th>
<th>Extreme impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>No impact</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DOMAIN 5 Anxiety, fear, pain, distress, thirst, hunger</th>
<th>No impact</th>
<th>Mild impact</th>
<th>Moderate impact</th>
<th>Severe impact</th>
<th>Extreme impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>No impact</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Overall impact**

- **Mild impact**

**DURATION OF IMPACT**

<table>
<thead>
<tr>
<th>Immediate to seconds</th>
<th>Minutes</th>
<th>Hours</th>
<th>Days</th>
<th>Weeks</th>
</tr>
</thead>
</table>

**SCORE FOR PART A:**

- **3**

**Summary of evidence**

**Domain 1**

- No impact in this domain.

**Domain 2**

- No impact in this domain.

**Domain 3**

- No impact in this domain.

**Domain 4**

- No impact in this domain.

**Domain 5**

- Crows may suffer fear or distress for a short time before being shot if another bird in the flock is shot first. In such cases, crows may retreat to a nearby tree, in the meantime, exhibiting natural 'flight or fight' stress response as when encountering a predator. These endocrine responses are short-term and stress hormone levels return to normal quickly (Munck et al., 1984). Birds which have retreated when frightened by the sound of a shot may subsequently return to the feeding area and be shot. Therefore when a particular bird is shot it may have suffered a mild impact for a few minutes beforehand.
PART B: assessment of mode of death - **Shooting crows**

<table>
<thead>
<tr>
<th>Time to insensibility (minus any lag time)</th>
<th>Immediate to seconds</th>
<th>Minutes</th>
<th>Hours</th>
<th>Days</th>
<th>Weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of suffering (after application of the method that causes death but before insensibility)</td>
<td>No suffering</td>
<td>Mild suffering</td>
<td>Moderate suffering</td>
<td>Severe suffering</td>
<td>Extreme suffering</td>
</tr>
</tbody>
</table>

**SCORE FOR PART B:**

- Summary of evidence
  - **Duration**
    - The major factor in wounding capacity using a shotgun with a given load is the range at which the shot is taken (Noer et al., 2007; Wilson, 1978). Shooting from an effective range will result in a denser shot pattern, killing the bird quickly. Death is caused by damage to vital organs, haemorrhaging and hydrostatic shock. Some birds may be wounded and will require follow-up. Time until death for these birds could be minutes.
  - **Suffering**
    - The lethality of a shotgun wound depends on the number of shotgun pellets entering the body, the organs injured and the amount of tissue damage (Merck, 2007). A well-placed shot, taken from effective range, should render a crow unconscious immediately and it should not suffer. Any wounded birds requiring follow-up may experience moderate suffering.

**CONTROL METHOD**

**Shooting crows**

**OVERALL HUMANENESS SCORE**

- **3A**

**Comments**

- The mode of death for birds wounded by shooting and not followed up could score D.

- Wounding rates - this assessment assumed that crows were shot according to best practice, i.e. with the appropriate weapon and ammunition, from a suitable distance, and the shot accurately placed. However, studies with foxes have suggested that a proportion of the foxes shot at are wounded. One study, based on x-ray evidence of shooting wounds among foxes admitted to wildlife hospitals and vets, estimated wounding rates to be 9% with shotguns and 3% with rifles (Bentley et al. cited in Baker et al., 2006). Another study examined the accuracy of shooting, by shooters of varying skill levels, at life-size paper fox targets, and estimated that wounding rates could be considerably greater (Fox et al., 2005).

- Hydrostatic shock - when an animal is shot its organs can be damaged both by the projectile and by the pressure wave or hydrostatic shock produced when the projectile enters the body (Courtney & Courtney, 2008). In some cases the pressure wave produced may be of sufficient pressure to kill an animal before it dies of blood loss effects (Courtenay & Courtenay, 2007).

- Individual birds that are part of a population that is managed by shooting, but which are not themselves shot, may suffer 'non-target' Part A effects over time.

**Bibliography**


