This information has been compiled from the web and also from a publication produced by INTERCAFE “The INTERCAFE Cormorant Management Toolbox” authored by Ian Russell, Bruno Broughton, Thomas Keller and Dave Carss.

There are various methods recommended by the environment agency for Cormorant control to prevent damage to commercial fisheries. These can be broken down into 2 broad groups:

1. Lethal Control (requires a license)
2. Non-Lethal Control

Lethal control (killing) requires a licence granted by Natural England since Cormorants are a protected species under the Wildlife and Countryside Act 1981, making it illegal to kill them or to destroy their nests/eggs without a licence. Natural England will only grant a licence to use lethal methods if all of 3 strict conditions have been met as outlined below:

1. Serious damage has been shown to be caused or is likely to be caused to the fishery.
2. A variety of Non-Lethal measures have been tried and found to be ineffective or impractical at controlling Cormorant numbers at the fishery. These measures need to have been properly recorded along with the impact seen on Cormorant numbers.
3. Lethal control is a proportionate and effective method to reduce or prevent the damage.

Non-Lethal control methods that should be tried prior to applying for a Lethal licence from Natural England include all or some of the below:

- Scaring – a range of visual and audible devices can be deployed around the fishery in order to scare the birds away and prevent them from coming back.
    - The main drawback of scaring methods is that over time the Cormorants can realise that that the tools used (such as dressed mannequins, scarecrows, reflective materials/CD’s, balloons, kites, gas cannons/crow scarers, shooting to scare, etc) offer no real threat and they can become habituated to them to the point whereby they are no longer effective. The key to successful use of such scaring devices is to make them as unpredictable as possible. This includes regularly moving them around the fishery, changing the frequency and direction of the noises produced, using multiple methods in combination with

each other and ensuring they are accompanied by a physical human presence as often as possible.

  - The committee is currently looking into acquiring a couple of mannequins that we can dress in bright clothing and move around both Wolvey and Copston. We have also acquired a couple of gas cannons that we are hoping to deploy at both sites and have a shoot to scare approach being employed at Copston on a regular basis.

- Physical Barriers – installation of overhead or floating wires, netting or other physical barriers that prevent Cormorants from gaining access to the water.
  - On a commercial fishery such as ours this is not a practical method that can be employed.

- Creating refuges.
  - Refuges are generally man-made structures that are placed in the water to provide fish with a safe area to escape into when being pursued by a predator. To be beneficial the structure, generally a cage, needs to be constructed in such a way that the fish can get into it, but the predator cannot. It can help to add items to the inside of the structure, such as branches or old Christmas trees, that act as an extra barrier to the pursuing predator.
  - The club has previously tried sunken cages to act as fish refuges but as far as the current committee are aware there is no record of whether these proved to be effective or not. Peter Wright has some fresh ideas regarding how we might provide some new refuges that will both allow fish to seek refuge from predation and enhance the invertebrate biodiversity in and around our lakes. These ideas will be further discussed at our next committee meeting.

- Modifying habitat – increasing the natural cover available to the fish.
  - The more natural cover that can be provided the better the chance the fish have of avoiding predation. Natural cover can be provided by not removing fallen trees and planting lily pads or other aquatic vegetation that the fish can use as cover. In a trout fishery there is obviously a fine balance between providing sufficient plant cover and ensuring the lake does not become overgrown and unfishable.
  - The committee has already identified at least 1 location within our lakes that would potentially benefit from the addition of the native *Nymphaea alba* lilies

(White Water-lily). We will continue to look at further options to add plant cover around the margins of our lakes in particular.

- Maintaining a human presence.
    - By far the best way to deter Cormorants in a Non-Lethal manner is to have people present and active around the lakes as often as possible. Cormorants often feed most actively at dawn and dusk and so frequent human activity around the fishery at dawn and dusk is a useful deterrent against their predation.
    - It is impractical to ensure that we have daily human activity around both of our sites at dusk and dawn throughout the winter when Cormorants are at their most troublesome but by using some of the scaring methods outlined above most frequently at dusk and dawn we might be able to drive the birds onto other waters during these times when they are likely looking to feed most intensively.

- Adjusting stocking policies.
    - Cormorants are most commonly seen on inland waters during the winter period and as such it is advised not to stock during this period. Clearly this is not an option for a trout fishery such as ours. However, the stocking of larger, less vulnerable fish is also recommended by the Environment Agency. According to the authors of The INTERCAFE Cormorant Management Toolbox the method of stocking larger trout has proved successful at trout fisheries in the UK, specifically Rutland and Grafham. “The minimum size of fish stocked was increased from 1lb to 1.4lb, with a high proportion of fish above 2lb and although this resulted in higher rearing costs this was accompanied by better catch rates and reduced levels of scarring damage caused by Cormorants”. It was also noted that “the size of the Cormorant roost and breeding populations of Cormorants near Grafham has fallen since these measures were introduced”. Further investigations at another UK fishery supported the notion that larger fish more frequently escape the grasp of a Cormorants beak, leading to lower levels of predation.
    - The committee has already discussed and is going to investigate the possibility of acquiring and stocking a larger stamp of fish to try and reduce the impact of Cormorant predation on our waters. Following the latest committee meeting Roger Press will start to look at other suppliers to see if there are larger fish available for the upcoming stockings due to our current suppliers struggles in raising fish to the size that we have asked for this year. The committee feels that simply stocking only large fish is not the optimal solution here and so we will continue with a policy of stocking a range of sizes in order to ensure that there

is both a good head of stock as well as larger fish that will hopefully be predated less easily by Cormorants.