



## **Agreement on the Conservation of Albatrosses and Petrels**

### **Fourth Meeting of Seabird Bycatch Working Group**

*Guayaquil, 22 – 24 August 2011*

---

### **AC5 Annex 7: Summary advice statement for reducing impact of pelagic longline gear on seabirds**

**Secretariat**

‘This paper is presented for consideration by ACAP and may contain unpublished data, analyses, and/or conclusions subject to change. Data in this paper shall not be cited or used for purposes other than the work of the ACAP Secretariat, ACAP Advisory Committee or their subsidiary Working Groups without the permission of the original data holders.’



**ANNEX 7**

**ANNEX 7 SUMMARY ADVICE STATEMENT FOR REDUCING IMPACT OF PELAGIC  
LONGLINE GEAR ON SEABIRDS**

**Summary**

Streamer lines have been widely promoted to deter seabirds in pelagic longline fisheries since the 1990s. However, recent evidence shows that streamer lines of either conventional or 'light' design, used in either single or double configuration, are inadequate for reducing seabird bycatch unless combined with other mitigation measures. To be effective they must be used with branchline weighting and, preferably, night setting.

The most effective measures to reduce incidental take of seabirds in pelagic longline fisheries are:

- use of an appropriate line weighting regime to reduce the time baited hooks are near or on the surface and thus available to birds;
- avoiding peak areas and periods of seabird foraging activity;
- setting at night; and
- actively deterring birds from baited hooks by means of bird scaring lines, in combination with appropriate line weighting.

Responsible management of offal and discards can also assist.

It is important to note that there is no single solution to reduce or avoid incidental mortality of seabirds in pelagic longline fisheries, and that the most effective approach is to use the above measures in combination.

**Introduction**

The incidental mortality of seabirds, mostly albatrosses and petrels, in longline fisheries has been of growing global concern. This was a major reason for the establishment of the Agreement on the Conservation of Albatrosses and Petrels (ACAP). A large number of mitigation methods to reduce and eliminate seabird bycatch has been developed and tested over the last 10 to 15 years, especially for pelagic longline fisheries. Although most mitigation measures will be broadly applicable, the feasibility, design and effectiveness of some measures will be influenced by the type of longlining method and gear configuration used. In particular it should be noted that most scientific literature relates to fleets of larger vessels, with longline usage from artisanal fleets receiving less attention. Some of this advice may need to be modified for smaller vessels. ACAP has comprehensively reviewed the scientific literature dealing with seabird bycatch mitigation in pelagic fisheries and this document is a distillation of the review (Annex 6).

Best practice mitigation measures for pelagic longline fisheries are listed below; the first recommendation is a general measure followed by those for line setting and line hauling.

**Best practice measures - general**

**Area and seasonal closures**

- The temporary closure of important foraging areas (e.g. areas adjacent to important seabird colonies during the breeding season when large numbers of aggressively feeding seabirds are present) has been very effective in reducing incidental mortality of seabirds in fisheries in those areas.

## **Best practice measures - line setting**

### **Line weighting**

- Lines should be weighted to get the baited hooks rapidly out of the range of feeding seabirds. Research on line weighting is still in progress and head-to-head comparisons of the effectiveness of line weighting regimes (and associated sink rates) as seabird deterrent are encouraged. Further studies on the effects of line weighting on the economics of fishing (catch rates of target and non target fish taxa) are required.
- Metrics pertaining to sink rates to target depths should recognize the importance of the “initial” (e.g. 0-2 m) and “final” (e.g. 4-6 m, or thereabouts) sink rates. A fast initial sink rate reduces visual cues in the critical shallow depths and a fast final rate maximizes the rate at which baited hooks sink deeper in the water column. Both considerations are likely to be important to seabirds that seize baits at or near the surface (e.g. albatrosses) and seabirds that hunt deeper in the water column (e.g. *Procellaria* spp. petrels and *Puffinus* spp. shearwaters).
- In practice, a trade off exists regarding the relative importance of the initial and final sink rates of baited hooks. In general, the closer the weight is to the hook the faster the initial sink rate. Additionally, the heavier the weight the faster the final sink rate. Thus, a heavy weight placed close to the hook will best reduce seabird by-catch.
- Best practice line weighting will maximize sink rates at the surface without overly compromising sink rates at deeper depths. The 60-75 g swivels  $\pm$  4 m from hooks commonly preferred by industry in coastal state fisheries are unlikely to deter seabirds (used with an effective streamer line) in all circumstances. Future research should be based on weighting regimes that contrast strongly, such a comparison of 120 g  $\leq$  2 m from hooks with a regime similar to that mentioned above. An alternative to the latter regime is to use smaller amounts of weight (e.g. 40 g) located at the hook.
- To improve crew safety issues associated with the use of a point source of weight (e.g. leaded swivels) in pelagic gear, use of the recently developed “safe” leads is encouraged. Safe leads slide away from crew during bite offs or when the line breaks under tension, thereby greatly reducing the incidence of dangerous fly-backs towards the vessel, as can occur with leaded swivels.

### **Night setting**

- Setting longlines at night, between the times of the end of nautical twilight and before nautical dawn) is effective at reducing incidental mortality of seabirds because the majority of vulnerable seabirds are diurnal foragers.

### **Bird scaring lines**

- Bird scaring lines are designed to provide a physical deterrent over the area where baited hooks are sinking.
- Two bird scaring lines should be used.
- The design of the bird scaring lines should include the following specifications:
- The attachment height should be at least 7 m above sea level.
- The lines should be at least 150 m long to ensure the maximum possible aerial extent.
- Streamers should be brightly coloured and reach the sea-surface in calm conditions, and placed at intervals of no more than 5 m.

- A suitable towed device should be used to provide drag, maximise aerial extent and maintain the line directly behind the vessel during crosswinds.

### **Mainline tension**

- Mainlines should be set in the 'surface set tight' configuration. Baited hooks connected to mainline set tight sink faster in surface waters than hooks attached to mainline set loose, as in deep setting. Mainline can be set tight either off the drum holding the mainline or with a line shooter. Enough gear should be set at the start of lines to prevent hooks dragging towards the vessel and being pulled up the water column where they are more accessible to seabirds.

### **Bait life status**

- Avoid the use of live bait. Use dead bait only. Many individual live baits remain near the water surface for lengthy periods (e.g. up to 120 seconds) after deployment. The use of live bait increases the likelihood seabirds will be caught

### **Bait species and size**

- Use small species of fish bait (and small individuals) in preference to squid bait. Common fish baits are pilchards, sardines and various species of mackerel (Japanese, blue, yellow-tail). The difference in sink rates between large and small fish baits of the same species is minor. The important point is that large squid bait sinks considerably slower than small fish bait.

### **Bait thaw status**

- Baits need only be thawed to the 'fisherman's thawed' state (i.e. to the point where individual baits can be separated from others in blocks of bait and hooks can be inserted by hand without undue effort). Bait thaw status has either no effect on sink rates (gear with leaded swivels) or an effect that is very minor (gear without leaded swivels). In practical terms the thaw status of baits has no effect on the sink rate of baited hooks.

### **Bait hooking position**

- To ensure fast sink rates, hook baits in either the head (fish) or tail (fish and squid), not in the middle of the back or top of the mantle (squid).

### **Offal and discard discharge management**

- Seabirds are attracted to offal that is discharged from vessels. Ideally offal should be retained onboard but if that is not possible, offal and discards should not be discharged while setting lines.

### **Best practice measures - line hauling**

- During hauling operations birds can accidentally become hooked as gear is retrieved. Best practice line hauling in pelagic longline fisheries is currently unknown.

### **Offal and discard discharge management**

- Ideally offal should be retained onboard, but if that is not possible offal and discards should be either, preferably, retained on board during hauling or released on the opposite side of the vessel to the hauling bay.
- All hooks should be removed and retained on board before discards are discharged from the vessel.

**Further options**

- New technologies such as underwater setting devices and hook pods are currently under development. They show considerable promise and will be reported on in the near future.

The following mitigation options are **not** recommended best practice:

**Hook design and olfactory deterrents** have been insufficiently researched.

**Side setting** has been insufficiently researched and there have been operational difficulties on some vessels.