

SUSTAINABILITY And The Tackle Trade

FOCUS ON FISHING LINE

Fish21's Director of Sustainable Angling, Stuart McLanaghan explores the future of fishing lines.

The environmental problems from discarded fishing line are well-known and include unnecessary wildlife deaths from entanglement, drowning or starvation. So-called 'ghost fishing' occurs when lost or discarded fishing tackle, mainly from commercial fisheries, carries on 'fishing' and ensnaring wildlife. Other issues include lines fouling boat propellers, a risk to divers and creating litter.

It has been estimated that modern fishing line take hundreds of years to decompose; had they been available when Isaac Walton's Compleat Angler was published in 1653, some might still be around today! Successive generations of anglers have inadvertently added to this problem. If every US angler purchased one 100m spool of monofilament line every other year,



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this would be enough to circle the earth 41 times.

Modern fishing lines started with the use of Nylon, invented in 1935 by DuPont. Today, lines are also made from a variety of other man-made materials e.g. Fluorocarbon.

The most common type is 'monofilament' – a single strand known for its elasticity. Whilst synthetic lines can chemically break down in sunlight, they cannot biodegrade – in other words, be decomposed by micro-organisms into simple compounds such as carbon dioxide, water and trace elements that easily disperse in the environment. Instead they become brittle and break into smaller pieces which contribute to the ever-rising amount of micro-plastics in the

environment.

So, what would more sustainable line use look like? A combination of biodegradable lines; extending recycling of synthetic lines to keep them out of the environment; and responsible line use.

"Fish21 is a Global Ghost Gear Initiative participant, working in partnership to develop solutions to the problem of lost recreational fishing / angling gear worldwide."

BIODEGRADABLE LINES

If product claims are accurate, biodegradable lines harmlessly decompose in only a few years; potentially creating a 99 per cent or more reduction in their long-term threat to wildlife, compared with discarded synthetic line.

Biodegradable fishing line was inspired by absorbable medical sutures (dissolvable stitches.) Bioline®Fishing applied this technology to produce what is understood to be the world's first commercially available 100

per cent biodegradable fishing line (Bioline®). The line used a highly UV-resistant polymer which was broken down by microbes found in sediment, soil and water. Once spooled on a reel, it was claimed that the line would retain 100% of its tensile strength for 10 to 12 months, with a five-year shelf-life sealed in its specially designed foil packaging. Clear in colour, the product's marketing included excellent knot strength, zero water absorption and UV / abrasion resistant.

Bioline® was sold to Eagle Claw; product launch interest apparently far exceeded expectations. Angling forums from the time indicate high product interest but concerns on line durability, strength and cost. The line was independently tested (2009 and 2012) by the Australian National Sportfishing Association; indicating high consistency with the manufacturer's stated line breaking strains. Australasian Bioline® distributor DigsFish also conducted biodegradability trials and it is understood the product met all manufacturer's claims. After two-years Eagle Claw decided to withdraw from retailing the line.

Currently, there seems to be only one commercially-available biodegradable line from Japan-based line manufacturer Toray International, marketed under the brand 'FieldMate™' (possibly pre-dating Bioline®). However, it doesn't appear to be available outside Japan. Some related product testing is also being conducted in Asian countries.

RECYCLING

Line recycling programmes are operating in a number of countries; Fish21's survey found that they were particularly well developed in some U.S. States; where most schemes send collected line to Pure Fishing (Berkley®) in prepaid shipping boxes. It is then sorted, melted and converted, for example into tackle boxes. Starting with in store 'respooling stations', Berkley® was at the forefront of line recycling; since 1990 claiming to have recycled over 9 million miles of fishing line.

Recycling schemes mainly target monofilament lines and not, for example, containing wire, or biodegradable varieties. Removing unwanted line is time consuming but necessary since re-processors might otherwise reject deliveries due to



contamination.

Looking at the different approaches a good scheme needs to include:

- Public education on the problems caused by discarded line. Engage stakeholders from tackle shops to local government, marinas, diving clubs, conservation and youth groups

- Secure funding to ensure viability; for example, grants and/or donations from central/local governments, non-profits and private sector (e.g. boating community.) The ongoing resource need shouldn't be underestimated; a scheme may otherwise fail

- A volunteer network to build collection bins which need to be regularly inspected, maintained and emptied; and subsequently sort, clean, weigh and send the line off for recycling.

- A management plan which can help set clear short- to long-term objectives. Online resources include instructions on making recycling bins (e.g. Florida's Monofilament Recycling and Recovery Programme). Identify strategic locations to site recycling containers (e.g. fishing lakes, marinas, tackle stores and beach walkways etc.), gaining agreement from the landowner to site collection bins and clarify maintenance responsibility

- A communications strategy to promote the scheme through local newspapers and radio; websites and phone apps to provide up-to-date information on collection points

- A partnership with re-processors to ensure recovered fishing line is repurposed into new products (e.g. Bureo skateboards) and does not end up in landfill. Scope may also exist to collaborate with an existing commercial fishing net / rope recycling scheme

REFLECTIONS

Mainstreaming biodegradable lines will require widespread customer confidence on

quality and performance, as well as being cost competitive compared with synthetic varieties. Field-testing new products with sustainability features – for example, giving angling club members free samples (perhaps with a voucher redeemable against future purchases) – could prove invaluable. Line manufacturers also have an important ongoing duty of care to promote responsible use of their products – what's good for sustainable target fish populations is also good for business. There are currently no sustainability categories in any of the new product competitions across the major trade shows; this is an exciting area ripe for development.

The earliest fishing lines were made from silks and vines, and later braided horsehair. Whilst far from perfect, they used natural biodegradable materials. Today, new product development is increasingly innovating around these materials. The prize for environmentally-friendlier fishing line is potentially huge given the size of the global market.

Next month's 'sustainability and the trade' considers product packaging. You can contact Stuart on all sustainability topics by e-mail: stuart@fish21.co.uk www.fish21.co.uk TTW