



Ropeless Fisher™ Starter Guide

Visit the online ropeless fishing store.

www.ropelessfisher.com



**No more catch theft, ship strikes,
weather damage, or entanglements.**



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**Designed, tested, and made
in Monterey Bay, CA, USA**

Ropeless: A Business Opportunity For Select Fishers

Dear Fisher,

Times have not been easy for fixed gear fishers in North America and around the world. As whale, dolphin and turtle entanglements have increased and gained prominence, closures, fishing restrictions, negative publicity, and perhaps most worryingly an uncertainty about the future of the industry has followed. Yet, these challenges can also present a business opportunity for you the fisher, one that is well worth studying. Our Ropeless Fisher™ system and other methods of 'ropeless fishing' substantially eliminate the entanglement hazard by removing vertical ropes and buoys from the water column, except when under supervision for hauling. This eliminates the need for closures, while providing an opportunity to sell your catch at a premium because of its sustainably caught status.

Many business advantages

These fundamental advantages alone are enough to justify a business investment. But, fishing experience has shown that fishers also benefit in many other ways that by themselves can make 'going ropeless' a very profitable decision. This includes reduced gear loss by avoiding surface hazards, elimination of poaching and reliable catch access in high currents where surface buoys may submerge.

A Proven and Affordable Technique

Firkins of Sydney around 1995 to avoid gear loss from ship strikes, he used simple Galvanic Timed Releases (GTR). Full commercial validation with acoustic commanded releases was achieved with our ARC-1XD in New South Wales after a pilot study in 2010-2012. Canadian and U.S. sea trials started in 2018, further validating the technique and proving that other innovations such as virtual gear marking were effective in competitive grounds.

Ropeless Fishing has now reached a state where your business will benefit tremendously. Like fishers in New South Wales before, you stand to gain financially from avoiding surfaces hazardous such as poaching, gear loss, and cut lines, while in some cases, fishing more efficiently.

Fishers in New South Wales have saved as much as 40% time at sea by being able to access their buoys and catch reliably in high currents where previously they found static buoys often submerged.

How To Get Started

Start with this guide to get the 'big picture,' review several fundamental topics and see some gear selections. Drill down in greater detail and engage in conversation by subscribing to our 'Breakfast Series' of weekly newsletters, which explores one topic per week suitable for discussion over breakfast (or on the dock) with your buddies. Get details about product choice and even download the free 'Ropeless Fisher' virtual gear marking app in our online marketplace at ropelessfisher.com.

Few will make changes to long-held practices easily. Yet, 'going ropeless' is one change that can powerfully benefit your business, livelihood, and future. So, why not take this chance to turn the issue of entanglements into competitive business advantage and come explore with us! - Marco Flagg, CEO, Desert Star Systems LLC

Funding Organizations

- Canadian Department of Fisheries and Oceans (DFO)
- Atlantic Fisheries Fund (AFF)
- Internal Fund for Animal Welfare (IFAW)
- Government of New Zealand
- Government of New South Wales

Fisheries Associations

- Acadian Crabbing Association (ACA)
- Cold Water Lobster Association (CWLA)
- Grand Manan Fisheries Association (CMFA)
- Massachusetts Lobstermen's Association (MLA)
- California Dungeness Crab Gear Working Group



Desert Star Systems
3261 Imjin Road
Marina, CA, USA
www.desertstar.com



Components of Ropeless Fisher™

Acoustic Release

ARC-1XD/2/3

The ARC acts as the release mechanism on the side of the release bag. There are currently three models. ARC-1XD is a ranging release supporting individual release and broadcast operation. Use it in strong currents and deep waters. ARC-2 is a cost-effective broadcast-only release for efficient use in moderate currents. ARC-3 is a ranging release that can trigger an external release device. It's intended for manufacturers who need acoustic commanding, ranging and acoustic marking for their own release.



Deck Box

STM-3/4

This device communicates with and commands your releases. The full-function STM-3 supports both individual release with ranging and acoustic gear marking/identification as well as broadcast release. The simple switch-operated STM-4 is limited to broadcast release. Both deck boxes include a through-hull transducer for permanent mounting, and an 'over the side' transducer as a backup and for testing.



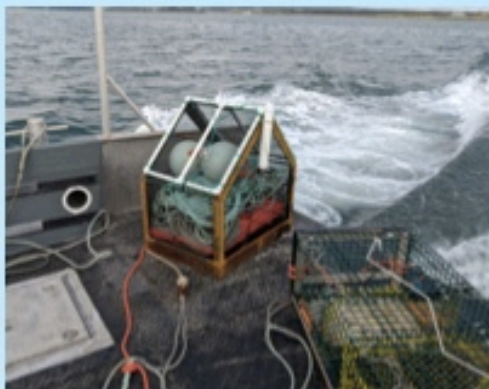
Visit the online ropeless fishing store

www.ropelessfisher.com

Release Bag

Buy a kit, buy a bag, or build your own

Release bags are built to fit specific fishing needs. The pictures provide several examples. In our marketplace (ropelessfisher.com), we also offer bag designs, ready-manufactured, and design tested. Currently available is a compact bag filled with 50 fathoms of 3/8" polysteel rope and topped with two 8" hard floats. Buy one and use it as a reference to test and then build your own. Or, buy them with your releases. We'll make and test other bag sizes for you on request.



How It Works In Four Steps

A. S. M. R.

Arm

A waiting release bag is filled directly from your winch during hauling, or from a bin using a fast hydraulic snood hauler. The bag is held shut by a release cord fed through a retainer and the ARC release mechanism.

Your gear is now ready to be set.

Set

If fishing with a trawl, a release bag is attached via a short stub rope to each anchor. Throw the first bag in and allow the rest to follow as normal: starting anchor, trawl, trailing anchor, and finally trailing release bag. You may also check 'if the ground is clear' by broadcasting public interrogates (acoustic gear marking). Any release on the seafloor nearby will identify itself with the owner and distance from you.

Further Reading

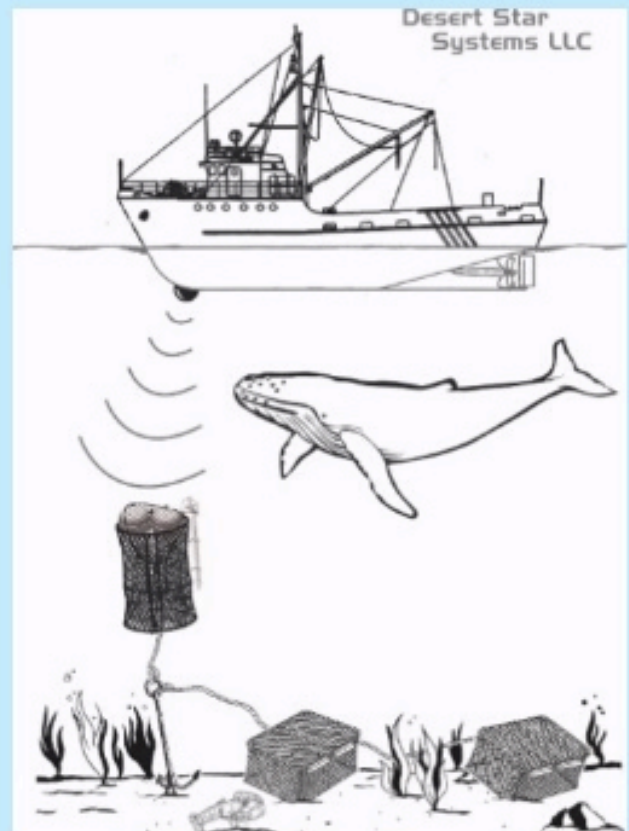
Arming the ARC requires inserting and screwing in a nickel-chromium release wire, which is burned when triggering a release. The release event is triggered via a deck box called an STM. The STM sends a command to a transducer installed in the hull of your boat, much like a depth sounder.

Mark

As you are dropping the trap or trawl, mark the location using the free Ropeless Fisher App™. This will give you gear locations and stop gear overlay from happening.

Retrieve

When you are ready to retrieve your traps, you may trigger them either in broadcast (automatic) mode causing buoys to pop up ahead of you or individual release with ranging and better control in high currents. The 8 inch or 11 inch hard floats will rise at a rate of about 1 fathom per second. Watch for them nearby and hook them quickly.



For more information please visit
www.ropelessfisher.com



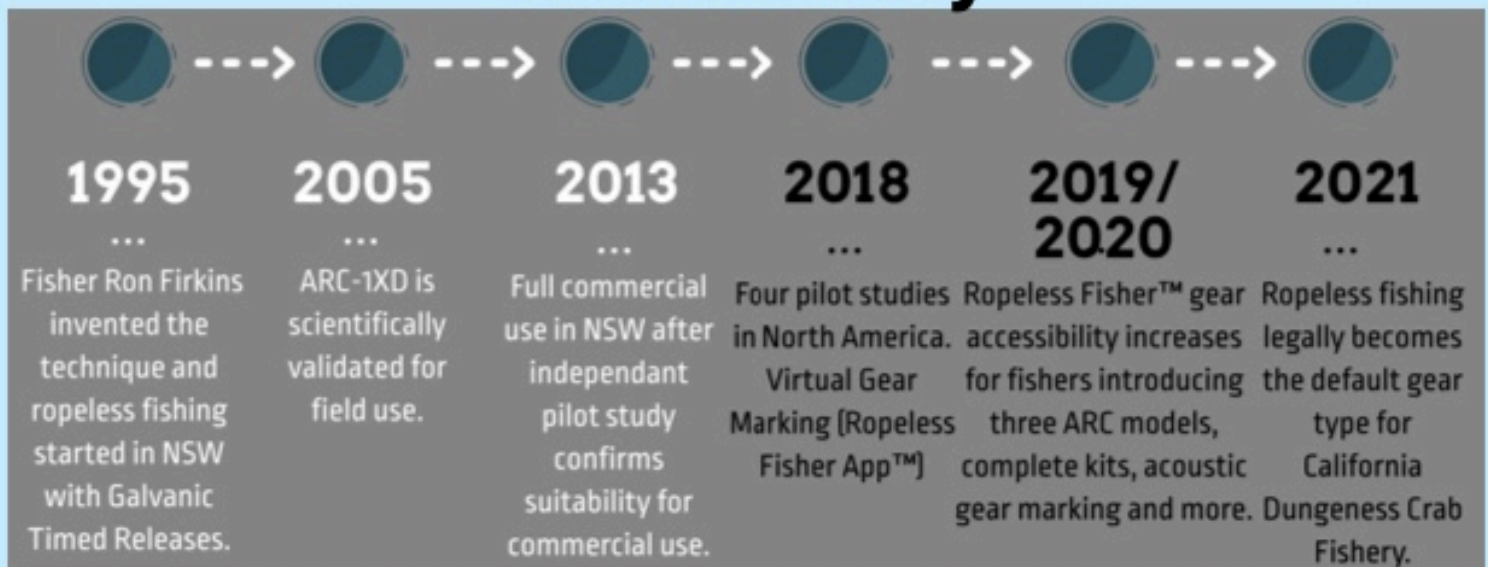
Why Consider Ropeless Fisher™?

Ropeless fishing yields significant benefits for business-minded fishers.

Business Benefits

- Mitigate marine animal entanglements and their industry consequences
- Restore income security by eliminating the need for closures.
- Prevent poaching of your catch and vandalism.
- Stop gear loss due to ship strikes and rough weather.
- More reliable gear access in deep water with high currents
- Less gear overlay and efficient fishing planning with virtual gear marking

A Brief History



Ropeless fishing has been commercially practiced since the mid-1990's. What first began with simple Galvanic Timed Releases (GTR), fishers now can use electronic remote commanded releases. This enables fishers to keep their gear safely on the seafloor while fishing, then retrieve it on demand. This new method also allows fishers to mark their gear both 'virtually' as shared waypoints and 'acoustically' to identify any gear and its owner, even if the gear has moved. To date, Desert Stars ARC-1XD variant has been field-tested, scientifically validated, and commercially used for eight years and executing well over 10,000 release cycles. Fishers from Australia and New Zealand to the Bay of Fundy, Cape Cod Bay, Gulf of St. Lawrence, and Scotland have successfully operated the ARC-1XD during commercial fishing and/or sea-trials.



Virtual Gear Marking

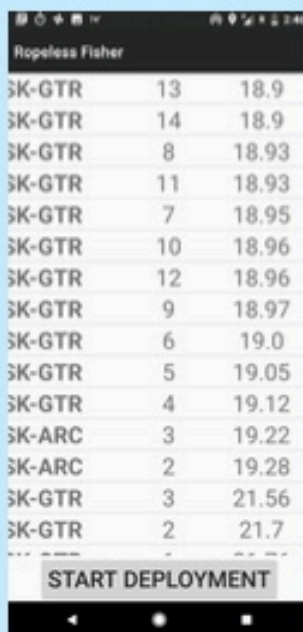
The free Ropeless Fisher App™ does this by logging GPS locations of traps and trawls. These locations automatically become available to another fisher that are within a visibility radius that you define. Inspectors are exempted and can see all gear locations right from their office or the patrol boat.

Available now for Android on Google Playstore.

Features

- Mark trap or trawl present gear locations with GPS.
- Set a "visibility radius" for your gear.
- Fishers outside the radius cannot see your gear.
- See marked gear at night and in rough weather when buoy spotting may be difficult.
- Get the 'big picture' of the gear field now for a more efficient gear setting.
- View your gear locations from anywhere, anytime.

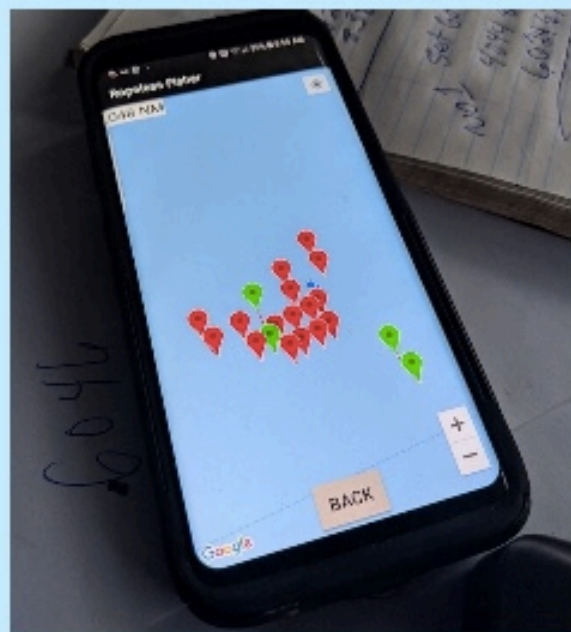
The bottom left shows the gear in the vicinity sorted by distance. The center is a map view of the gear field. Right shows the app used in conjunction with the surface station controlling your releases.



Ropeless Fisher

3K-GTR	13	18.9
3K-GTR	14	18.9
3K-GTR	8	18.93
3K-GTR	11	18.93
3K-GTR	7	18.95
3K-GTR	10	18.96
3K-GTR	12	18.96
3K-GTR	9	18.97
3K-GTR	6	19.0
3K-GTR	5	19.05
3K-GTR	4	19.12
3K-ARC	3	19.22
3K-ARC	2	19.28
3K-GTR	3	21.56
3K-GTR	2	21.7

START DEPLOYMENT



Acoustic Gear Marking

Used in conjunction with virtual gear marking, acoustic marking means identifying and localizing gear on the seafloor. In a basic form, it means interrogating and ranging to one of your releases that may have moved while running a search pattern. And recently, we added an efficient fisher public identifier (PID) to our ranging releases. Now, by merely putting your deck box in public broadcast mode, you will be alerted to any gear on the seafloor, including distance from your position and owner identity. Gear logging, mapping, and sharing functions are in progress. Use it to make sure the ground is clear, to help find any 'lost' gear, or as an inspector to cross-reference virtual gear marks and actual locations.

Is It Legal?

Ropeless is already a legal practice in some fisheries, including California Spiny Lobster and NSW Rock Lobster. It is practiced, although often in a simple form such as grappling in jurisdictions that don't have contrary gear marking regulations such as the UK and Ireland. And other jurisdictions are set to make it default practice, including California Dungeness Crab by 2021. If your jurisdiction requires marker buys, take a close look at the wording and discuss it with your inspector. Often, the regulation only requires that a marked buoy is attached, not that it is at the surface. No float is always at the surface. Give it a strong enough current, and it will submerge (see diagram). And fishing with buoys that do submerge is already an ordinary and necessary practice in offshore and high current areas. So, ropeless is only rigging a short vertical while your gear is fishing to keep your equipment and catch secure and eliminating hazards to navigation and marine animals. And virtual and acoustic gear marking can be a more effective marking method, in particular at night or in rough weather. If your jurisdiction will not allow it, an Exempted Fishing Permit is an option in U.S. Federal waters. Here, our form application that provides much of the information needed will streamline the process for you. Give us a shout for assistance.

Fishing In High Currents

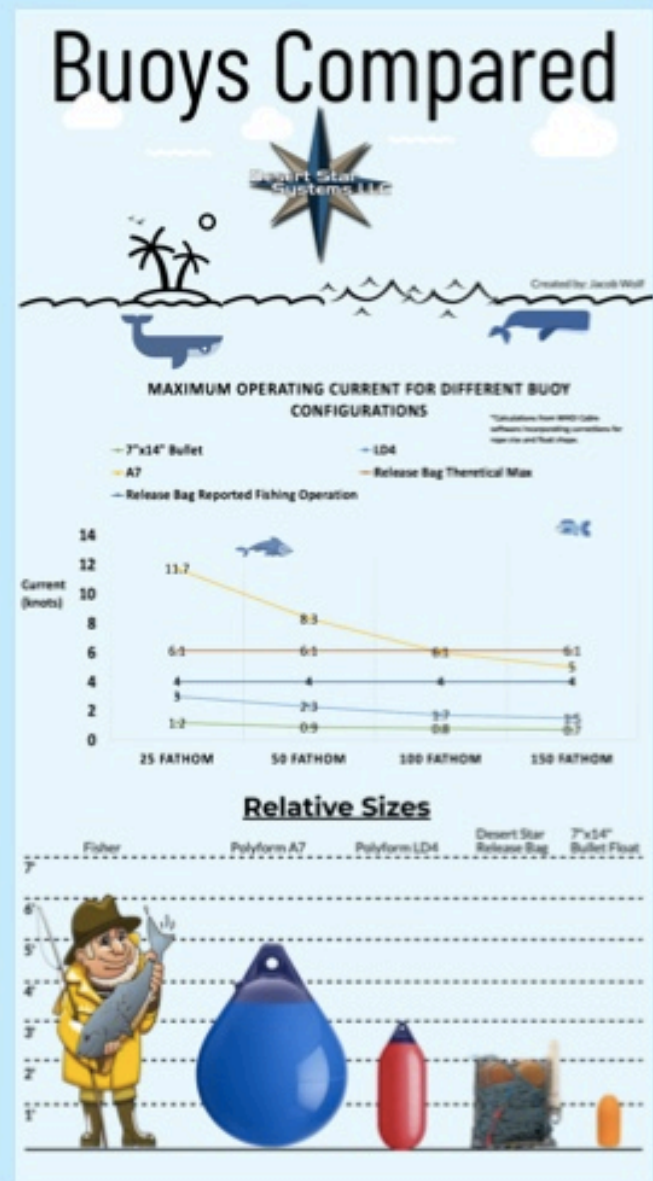
Any buoy will submerge in high currents. But, with submerged bag ropeless, you can operate in considerable currents that would otherwise require a much bigger buoy and anchor. That's because of the slack rope in the bag. After release, the buoys rise from this down current drifting slack, surfacing for a while until the slack is gone. With small 8" buoys, it's been practiced by fishers in currents to 4 knots, and the theoretical maximum is even higher.

Is It Safe For Marine Life?

YES! A study done by John Terhune of the University of New Brunswick for the Cold Water Lobster Association and funded by the Atlantic Fisheries Fund (Canada) found the following (this has also confirmed our own findings per NMFS guidelines):

"If a porpoise were swimming under the boat when the interrogation signals began, they would be exposed to loud, short-duration clicks that, in human terms, would resemble a very loud finger snap or a toy "cricket" held very close to the ear. While this would likely disturb the porpoise, it is unlikely to cause permanent hearing loss, especially as the porpoise could swim away and would only be exposed to a few such clicks at most. This analysis is different than the one used by M. Flagg (2018), but both conclude that the use of acoustic release devices are unlikely to cause hearing loss or "noise pollution" problems with marine mammals."

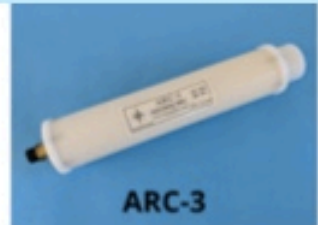
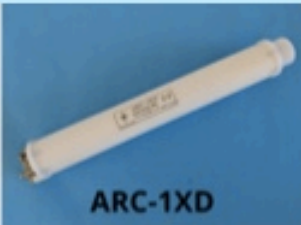
*Terhune, J. "An Evaluation of at-Sea Field Trials of a Ropeless Lobster Fishing Method in LFA 34." n.d.



st of an ARC should be viewed in terms of its value over its lifetime, very similar to how

Category	Sub-category	Value
Total

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