August 2021

Tindale Marine Research Charitable Trust

Species already in the tagging program

Inshore Fish Tagging Program

Who are we?

An Introduction to Scott and Sue Tindale

Accomplished, internationally acclaimed recreational anglers, underwater photographers and marine researchers, Scott & Sue Tindale have spent a lifetime working together inspiring and engaging with the public and like-minded organisations on ethical angling, conservation and sustainability to reduce our impact on the marine environment. By leading from example and developing new initiatives they have influenced the way modern recreational angler's fish while enhancing the fishing experience. Their angling and guiding abilities have been sort after by international anglers, scientists, academics, researchers, print media articles, TV shows, radio interviews, film documentaries, National Geographic photographers and more.

In 2018 Scott and Sue formed the Tindale Marine Research Charitable Trust with the support of volunteers, marine Scientists and academics to collate their many past and present projects and to create a citizen science platform for the public to engage, helping future generations make better informed decisions. The flag ship project is the inshore fish tagging program involving all sectors of the community both on and off the water throughout NZ. The Trust is a platform to share information, support & undertake marine research for a better understanding of our marine environment.

Scott & Sue are very accomplished anglers with a combined total of over 260 International Game Fish World records and countless NZ National & club angling records. All of these outstanding achievements were caught in NZ waters with a majority released live or donated to science. Scott & Sue have spent most of their lives committed to the conservation of fish and the promotion of responsible, ethical angling practices through science and education. They introduced 'length records to NZ in early 2012' as a way to recognise released live fish as a sustainable alternative to weighed dead fish in fishing competitions changing the culture of recreational fishing.

Their promotion of using barbless circle hooks in order to reduce unwanted fish mortality or harm to seabirds is now largely adopted throughout the recreational sectors. They have donated their expertise, time and money to assist in the field on many satellite tagging programs of vulnerable marine species for DOC, Niwa, Conservation International & Fisheries NZ. Their valued support has been credited in many scientific research papers. When not at sea, Scott attends many MPI fisheries working groups, steering committees and forums discussing sustainability and mitigation measures and recently was appointed to the IGFA Oceania Regional Council Conservation and Marine Research Committee.

Both have volunteered at numerous boat shows and fishing events engaging with the public. They are long time ambassadors for Southern Seabird Solutions educating the public on mitigation methods that they have developed in preventing harm to sea birds and are 2019 Award recipients of the Seabird Smart Awards for their contribution to educating the fishing public.

Dedicated volunteers both on and off the water much of their time is spent guiding or collecting, specimens for research facilities, scientists & museum collections. Both Scott & Sue volunteer at Auckland War Memorial Museum wet lab collating & preserving fish specimens providing a resource for marine researchers & the public.

For their environmental stewardship, in promoting environmental education, conservation, sustainability and furthering our knowledge through citizen science and research. They have become valuable contributors at many Government organisations, NGO's, steering committees, scientific research organisations, public forums and fisheries related management groups to find solutions for concerns in our shared fishery.

At the New Zealand Seafood Sustainability Awards 2020 – *recognising and celebrating significant contributions to sustainability and innovation*, Scott and Sue were both finalists in two awards, the **Minister of Fisheries Award** and the **Kaitiakitanga Award** for their "*outstanding dedication and innovation towards the sustainability of New Zealand's seafood sector. Your contributions will help ensure the long term health and sustainable use of our moana."* Hon Stuart Nash, Minister of Fisheries NZ.

"I am impressed by your achievements as anglers and commitment to sustainable practice and community education, which sets an inspiring example to others in the seafood sector." Dan Bolger, Deputy Director-General of Fisheries New Zealand.

Background

New Zealand as an island nation is unique in its isolation and wildlife, it is home to thousands of marine species that we know very little about but strive to better understand. Our 15,000km of coastline stands before a marine environment we love to explore. Be it work or play it's never far from our minds or daily lives

Tindale Marine Research Charitable Trust, a registered charity, has been formed to *Promote and encourage environmental education, conservation and research:*

Globally the public has always been a great source of information. Scientists established early that seafarers, Fishermen and fishing records were invaluable to helping scientific institutions worldwide in their research, finding new species, supplying specimens and reporting observations.

The members of the trust feel including the public in marine research projects collating and sharing academic and citizen science findings while promoting sustainable initiatives will benefit all of New Zealand's inhabitants both on land and in the sea. The Trust's initiatives hope to help bridge that gap.

Public Interest in the health of our fishery has increased in recent years but we still face massive knowledge gaps of many of the marine species. Much of what we know is out of date. Environmental factors including climate change, acidification from runoff, pollution, urban development, population increases and consumer demand and legislative policies all impact marine life, highlighting the need for additional & continuous research monitoring ongoing situations. More than ever there is a need for a well-managed fish tagging program inclusive of all sectors, recreational, commercial and customary, working together to collect much needed data in real time supporting the fishery that we are so passionate about, highlighting any downward trends early. Fishermen are really good at going out & finding fish, but to understand & track population trends we all need to do our part.

Tagging is a useful tool that has been extensively used around the world in obtaining quantitative & quality information on fish stocks & aspects of management since the early 20th century. Fish tagging programs were started as early as the 1930's. These programs are routinely used to individually identify fish in order to acquire information on growth, movements & to provide estimates of population size & natural mortality. Knowing the biology of the fish, how productive they are, how fast they grow, where or how far they go is vital to the conservation & management of marine species.

Information that can be gained by tagging a variety of species important to all New Zealanders:

- Seasonal patterns of movement, where do they go to in summer/winter?
- Bycatch management, do the fish survive after being released? Areas to avoid seasonally.
- Movement dynamics
- Extended range & depth, how deep do they go? How shallow do they go?
- Preferred habitat, what things impact their environment?
- Survivability, do fish survive after being pulled up from the deep then being released again?
- Growth, how fast do they grow? Do they have growth spurts at different times of the year?
- Stock assessment
- Who is catching what, % makeup of a shared harvest? Taking the guesswork out.

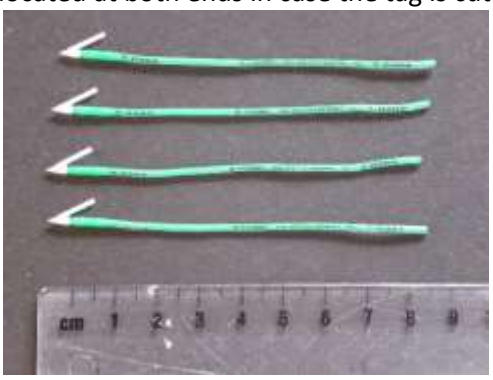
Changing environmental factors will require all of these points being monitored for change. Trends can easily be seen in tagging data analysed seasonally against these factors.

Tindale Marine Research Charitable Trust
Inshore Tagging Program

What is tagging?

We have refined the best parts of other tagging programs around the world and adapted these to suit our NZ conditions.

Tags come in various configurations and all are a used to identify an individual fish. The Trust inshore fish tagging program has adopted the standard Hallprint PDL plastic tipped dart tag. These are a small non-invasive serial numbered plastic dart marker tags. We have chosen the colour green to blend in with the surrounding waters as tag shedding or tags chewed off by other fish can be a problem. Our extensive research and experience has shown that this colour also avoids predation from other fish mistaking the tag for food. It is also thought it represents weed so it is not interesting to carnivores. However the serial numbers are located at both ends in case the tag is cut in half.



The Program

In overcoming the inadequacies of other tagging programs it was decided not to provide just tags only. For this tagging program to succeed it was imperative to have consistency, clear and precise instructions, a code of practice and as much support as needed.

The trust designed and assembled a comprehensive "Tagging Starter Kit" that includes everything needed to undertake tag and release of any inshore fish species.

Taggers can purchase tagging kits and accessories from the Trust website. These kits include an introduction letter, registration form, membership card, a 1500mm roll out reinforced PVC measure mat with solid headboard, a tag applicator needle with handle, 10 serial numbered fish tags in a cartridge, tagged fish recording sheets, full instructions, and a tagging code of practice, all in a handy carry bag. Also included are wanted posters & stickers to promote the reporting of recaptures in their area. There are regular updates, handy hints and instructional videos on the Trust website and social media pages. All inshore fish of a suitable size are included in the program.

The process starts with appropriate tackle selection, ideally barbless hooks. A suitable fish is caught and evaluated to be healthy. Gut hooked, bleeding, embolised or injured fish are not suitable candidates. A comprehensive tagging code of practice and instructions are available from our website and in the tagging kits.

These tags are designed to be inserted into the fish with the barb hooking around the pterygiophone bones just below the dorsal fin. The fish is ideally photographed prior to release & the following details are recorded:

1. Date of capture
2. Tag serial number
3. Species
4. Fish straight line measurement:
   - Finfish are measured nose to v in tail (VL)
   - Sharks are measured total length, nose to tip of tail (TL)
   - Rays are measured span width (SW)

5. Location of catch
6. GPS co-ordinates. To avoid any conflict all GPS locations are kept confidential by the Trust and are used only for displacement calculations and direction of travel.
7. Depth of water the fish was caught in
8. Anglers name and any comments or observations.

The fish is then released carefully into the water to carry on with its normal life. The tagging is carried out quickly & methodically so that there is little or no stress to the fish. This ensures a better survival rate & little or no change in the behaviour of the fish. This process takes less than 30 seconds to complete and tutorial videos and instructions are on our website.

At the earliest convenience tagging data is sent into the Trust to be added to the comprehensive data base. The Trust website has a convenient online tag and release reporting form or regular taggers can email their updated spreadsheets. As an incentive to keep the data current a monthly sponsored prize is drawn from the tag returns received each month.

Recaptures

When the fish is recaptured all of the same details as above are recorded again along with any photos & comments. From this information it can be established how far the fish has travelled & how big it has grown over a certain length of time. Growth rates are a good indicator of sufficient food sources in the area and the health of the environment. The angler has the choice of either keeping the fish or re-releasing the fish hopefully to be recaptured again and again. A reward system is in place for all recaptures. Both the original tagger and the person who recaptures the tagged fish receive recapture certificates. These certificates include the information collected and are popular with the recipients. Additional copies are sent to charter and commercial boat skippers. Sponsored prizes are also sent out with the certificates as an incentive to report tagged fish recaptures. These are promoted on social media and in the reports. Other handy resources like fish ID posters are sent out or downloaded from our website.

The Tindale Research Charitable Trust inshore fish tagging program offers recreational anglers the ability to adopt ethical and sustainable fishing practices while inviting everyone who shares in our fishery to participate in marine research or report tagged fish recaptures and contribute to a better understanding of our marine environment. Our aim is to include customary and commercial taggers in the future to better represent the shared fishery model. The data collected will help fill the knowledge gaps that limit our ability to manage the resources and monitor any changes to the marine ecosystems over time.

Access to the trust data is on a case by case basis. Applicants will be required to submit a proposal outlining their research requirements for consideration. For more information visit our website https://tindaleresearch.org,nz

Tagged fish recaptures Auckland area