



Thunnus UK: The first year of research on Atlantic bluefin tuna off southwest UK

AIM 2: Satellite tagging

UNIVERSITY OF EXETER
Cefas
HOPKINS MARINE STATION OF STANFORD UNIVERSITY
Department for Environment Food & Rural Affairs

Tagging.

Aim.

“To study movements, habitat preferences, and area-specific behaviours of Atlantic bluefin tuna present in aggregations off the southwest United Kingdom”

How?

Work with fishers to catch, tag* and release ABFT of the southwestern United Kingdom

*Use pop-up satellite tags to collect data from individual tuna on both horizontal and vertical movements

The theory....

Record: **light, temperature and pressure** (depth) every 5-15s

Tag ‘Pops-off’ fish on a preset date (**Of 10 tags deployed: 4 due on the 24th August, 4 on the 14th Sept and 2 on the 22nd Oct 2019**)

Data is transmitted via ARGOS

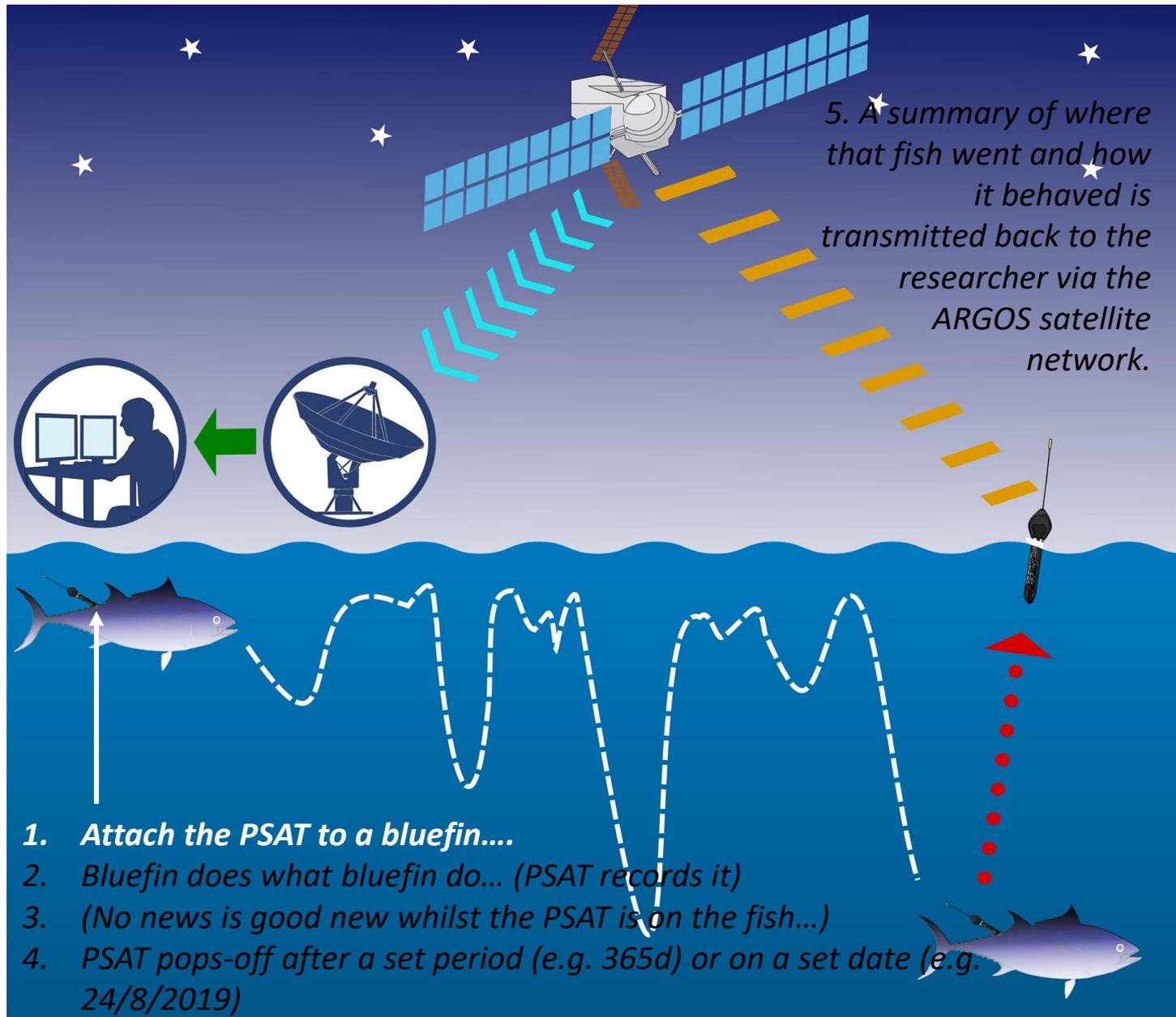
(You don’t need to retrieve the tag, but if you do the data is far better!)

Locations derived through **light-based geolocation** & refined with depth & T°C

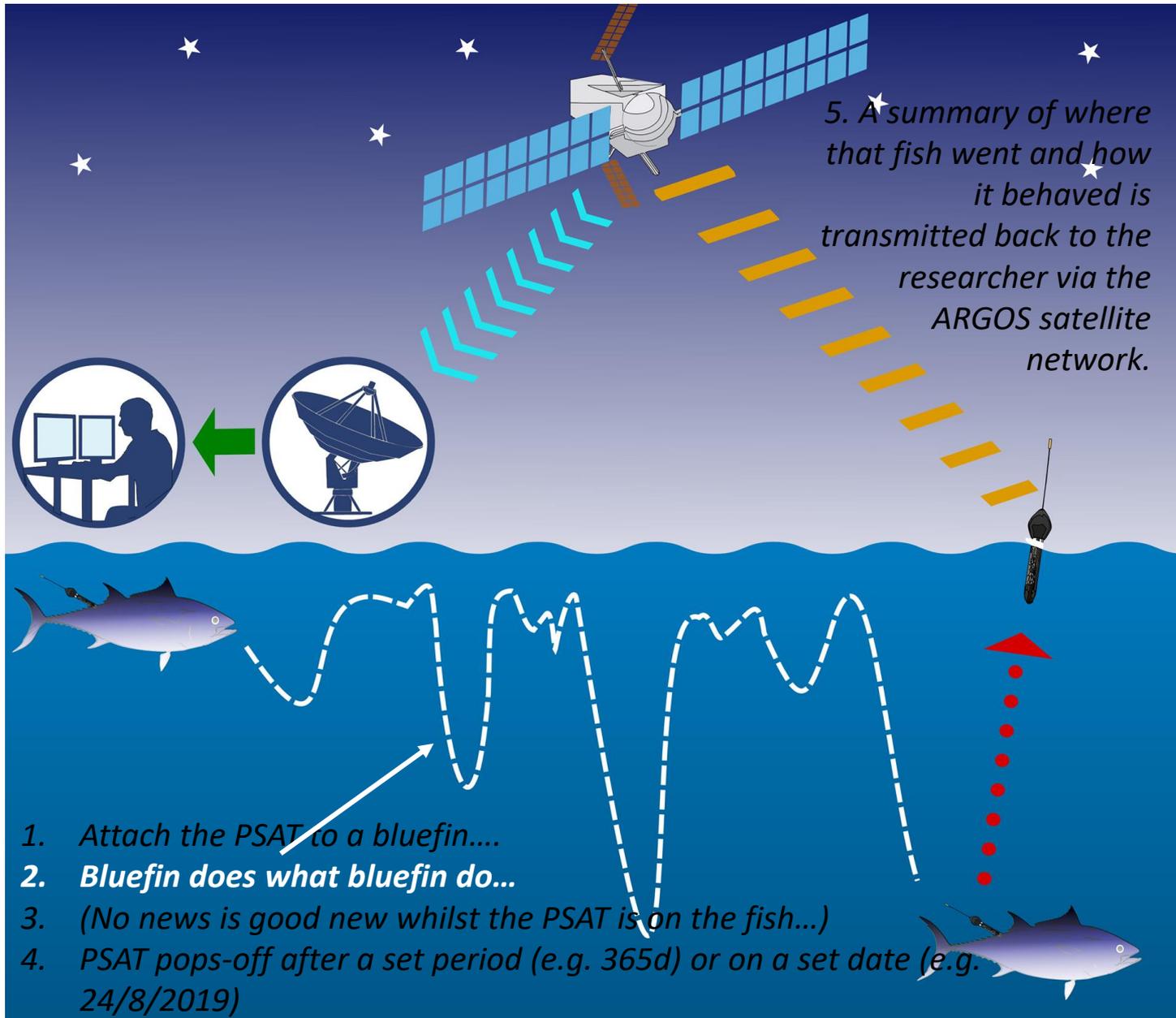
Pop-up Satellite Archival Tags “PSATs”.



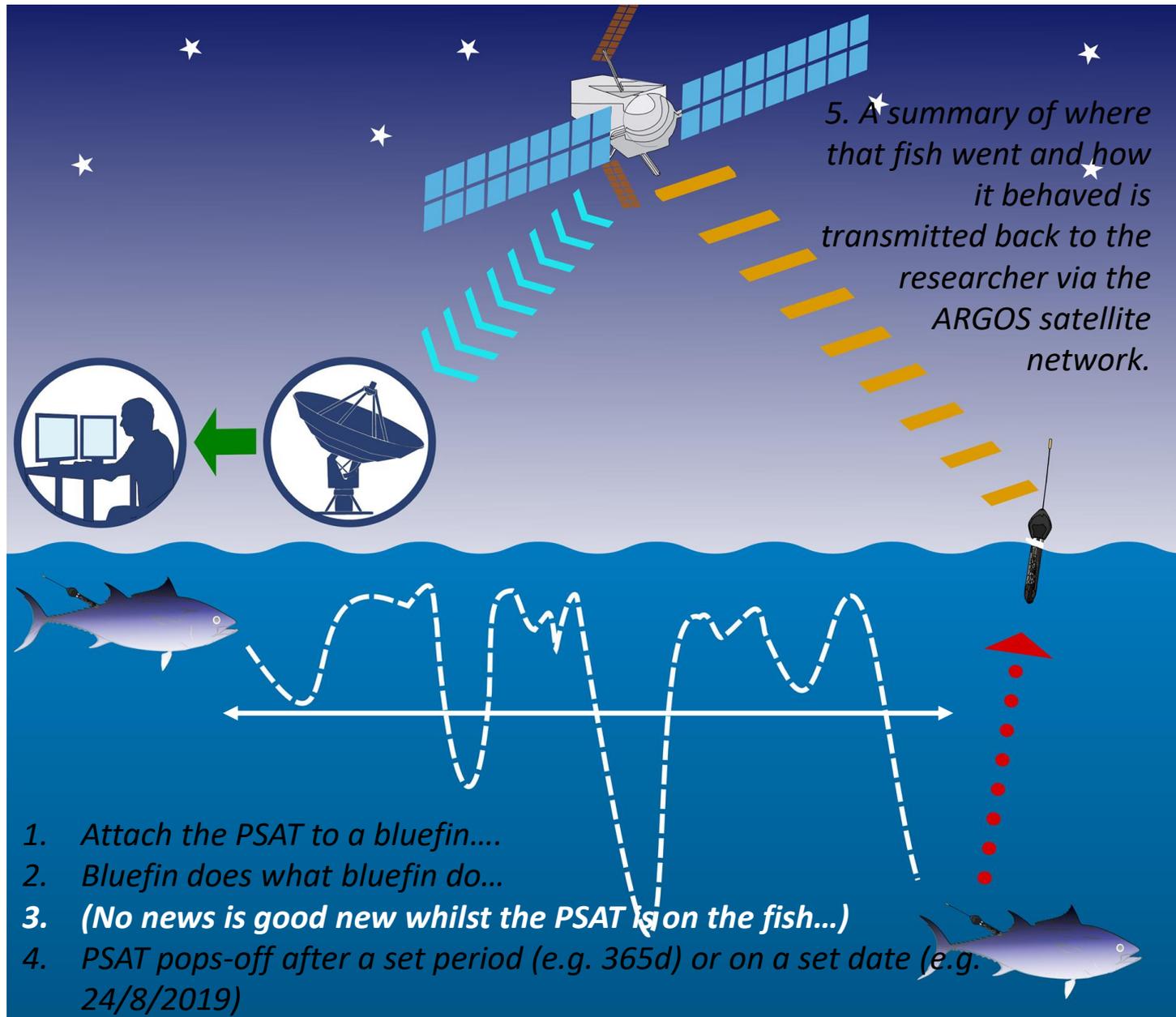
Pop-up Satellite Archival Tags - PSATs



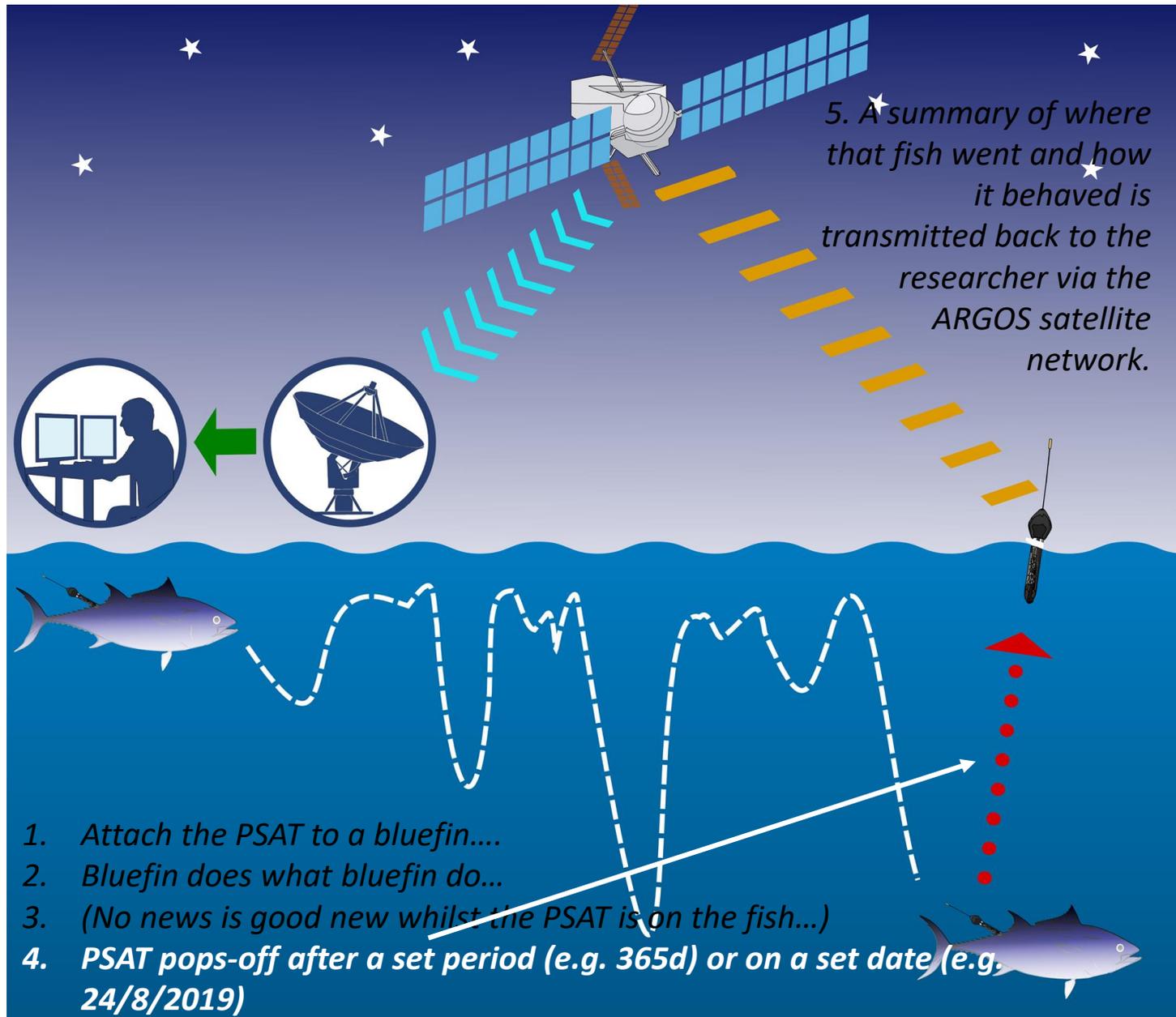
Pop-up Satellite Archival Tags - PSATs



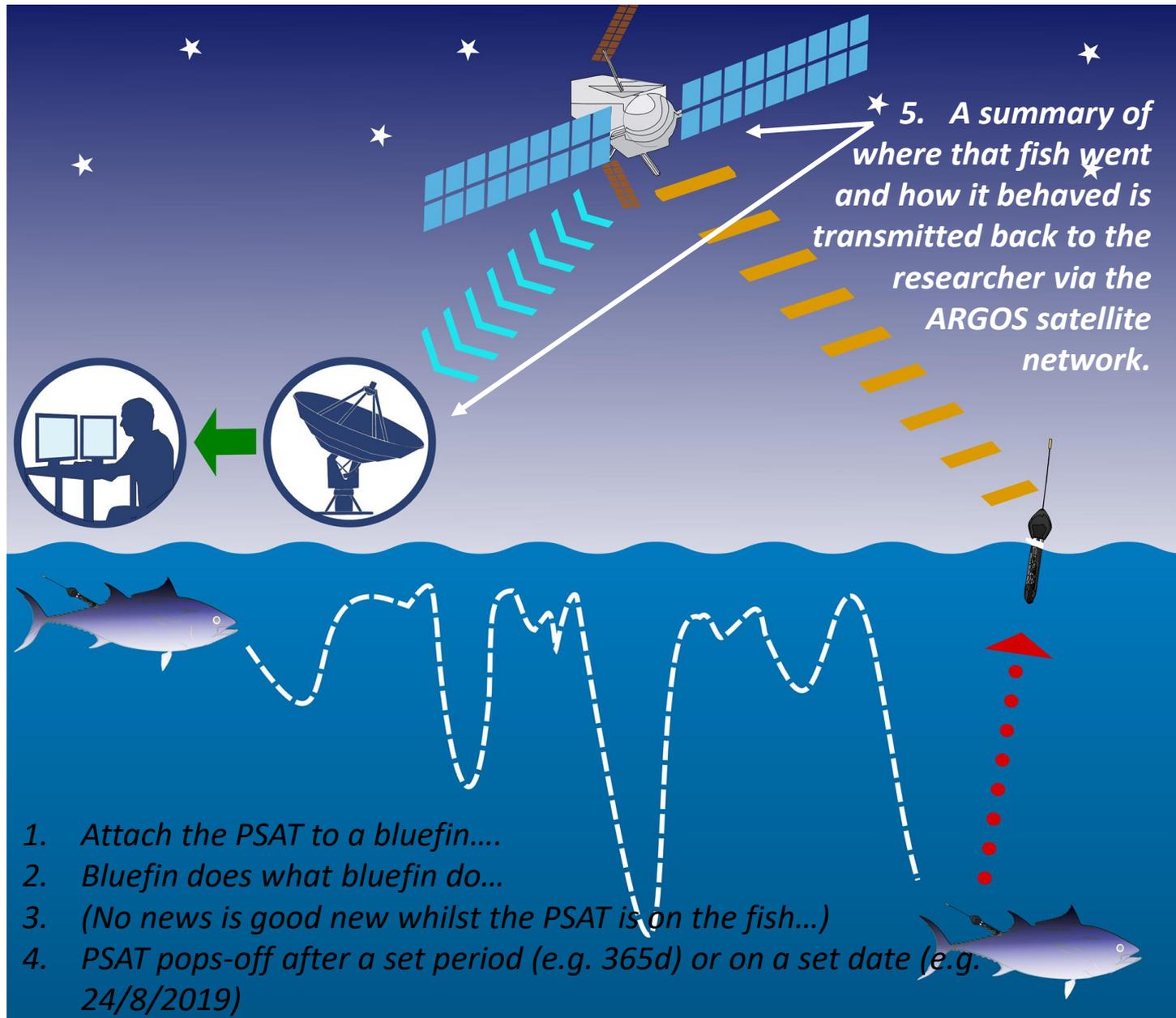
Pop-up Satellite Archival Tags - PSATs



Pop-up Satellite Archival Tags - PSATs

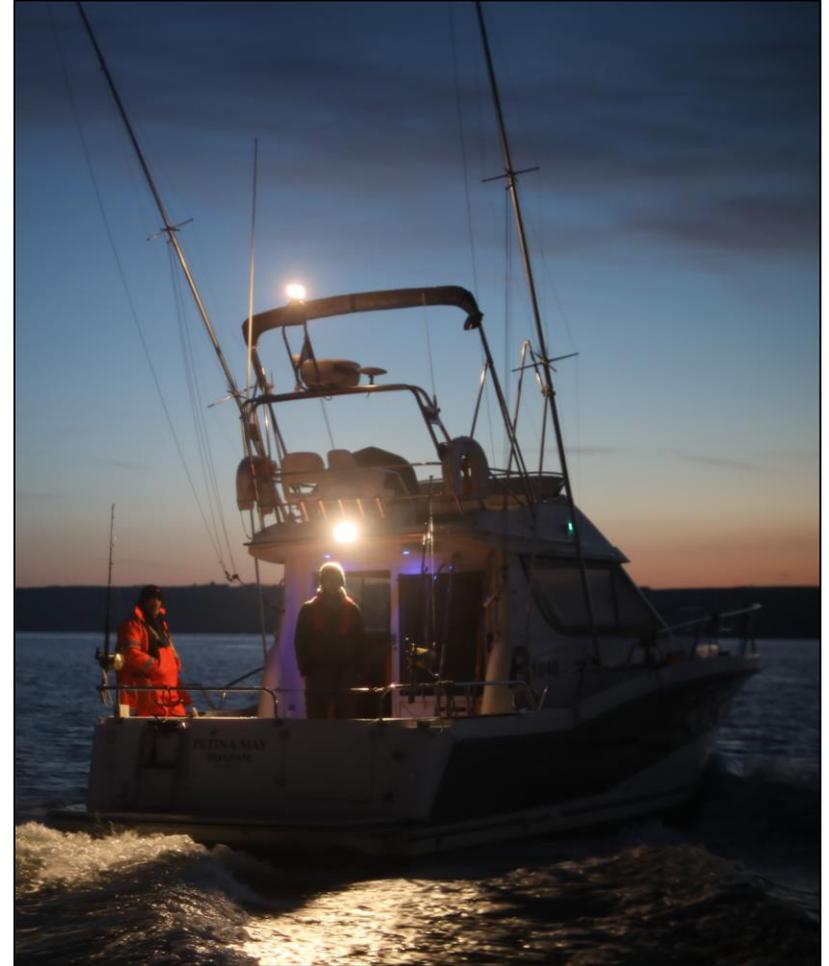


Pop-up Satellite Archival Tags - PSATs



Tagging ABFT in 2018.

- Tagging fieldwork was conducted September 24th – December 12th 2018 with the Sea Wolf, Aquila and the Petina May
- The MMO granted dispensation for scientific fishing operations
- 25 days were spent at sea and feeding ABFT were sighted on every day
- Scientific fishing was conducted by trolling to minimise capture times and ensure high welfare standards of ABFT for satellite tagging.



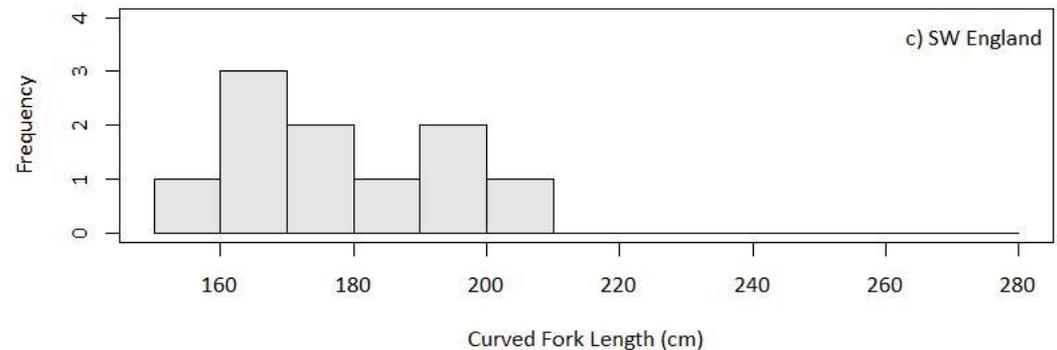
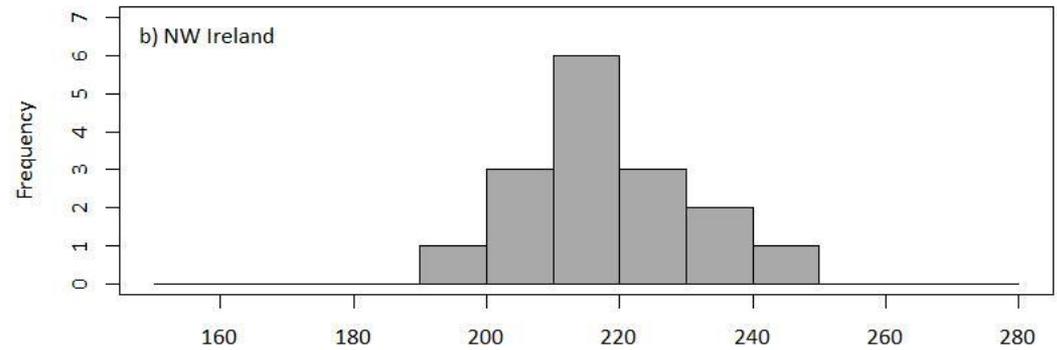
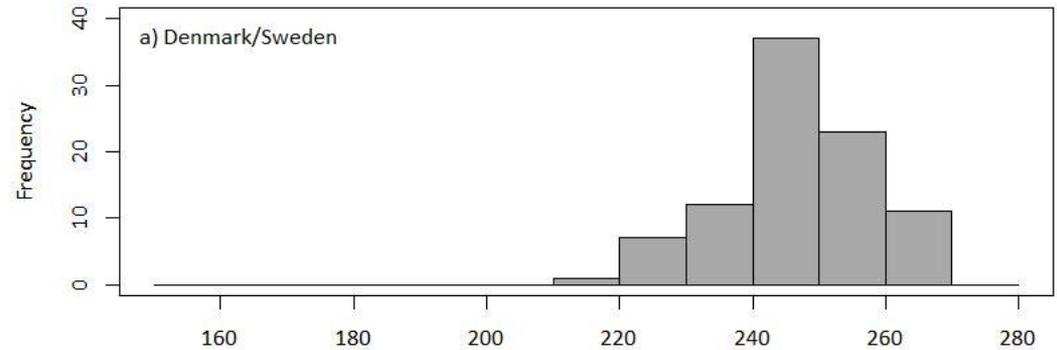
Tagging ABFT in 2018.

- Ten Atlantic bluefin tuna were tagged and successfully released
- On deck:
 - gills were irrigated with a salt-water hose
 - eyes were covered with a soft cloth
- Handling time was a mean of 3m 35s \pm 44s

PSAT Serial	Deployment Date	Programmed Detachment Date	Length (CFL; cm)	Estimated Weight (lbs)	Estimated Age (years)	Handling Time (mm:ss)
17P0711	03-Oct-2018	24-Aug-19	193	250	7	03:50
16P2192	08-Oct-2018	24-Aug-19	184	225	7	03:56
17P0960	08-Oct-2018	24-Aug-19	166	175	6	02:34
16P1553	09-Oct-2018	24-Aug-19	191	300	7	03:06
17P0786	22-Oct-2018	14-Sep-19	158	150	5	03:50
16P1898	23-Oct-2018	14-Sep-19	163	160	5	03:07
16P1483	25-Oct-2018	14-Sep-19	206	325	8	03:30
16P1144	25-Oct-2018	14-Sep-19	176	200	6	03:06
18P0812	02-Nov-2018	22-Oct-19	175	200	6	03:40
18P0814	15-Nov-2018	22-Oct-19	168	175	6	05:15

Tagging ABFT in 2018.

- Sizes ranged from 158-206cm CFL (mean size $178 \pm 15.3\text{cm}$).
- Estimated ages between 5-8y.
- Difference in sizes of ABFT in the southwest UK to those tagged in other operations.



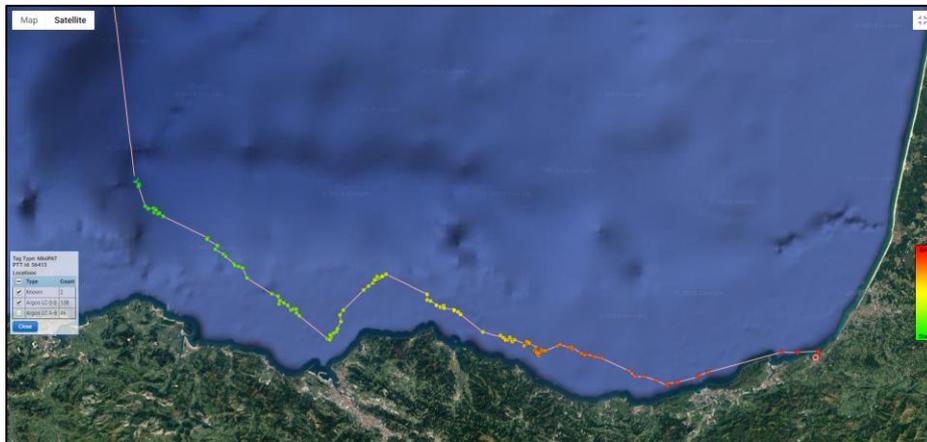
Tagging ABFT in 2018.

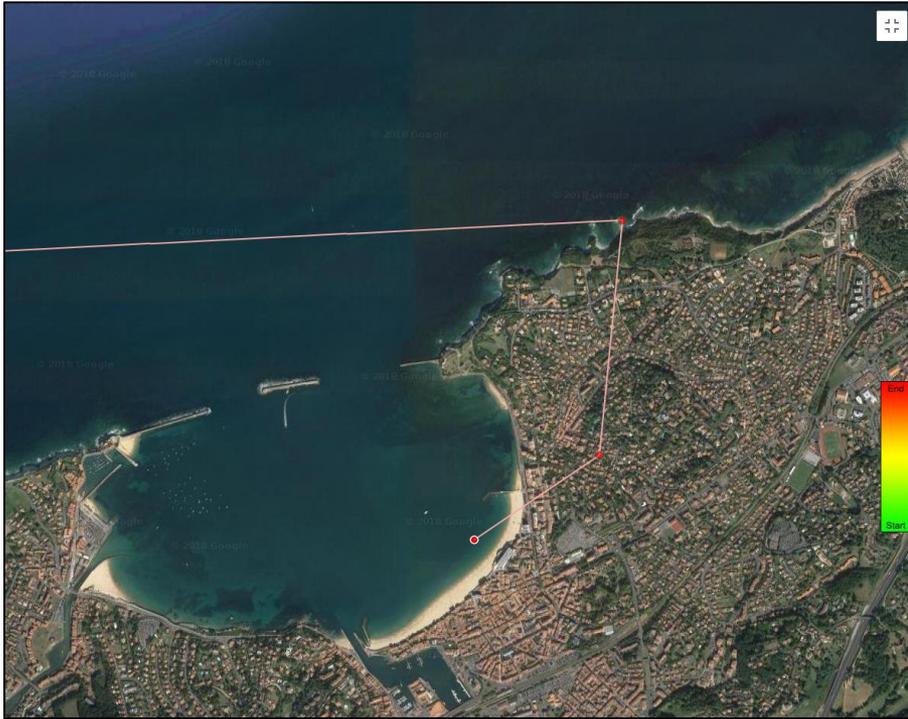
- All ABFT were towed until they showed strong signs of rejuvenation before release.
- All tagged fish survived post-release.



No news is good news... **16P2192**

- “16P2192” was deployed on the 8th October 2018 on a 184cm ABFT
- It popped-up (detached) 20nm offshore from Bilbao on 22nd January
- Attached for 106 days
- Attempts are being made to collect the tag..





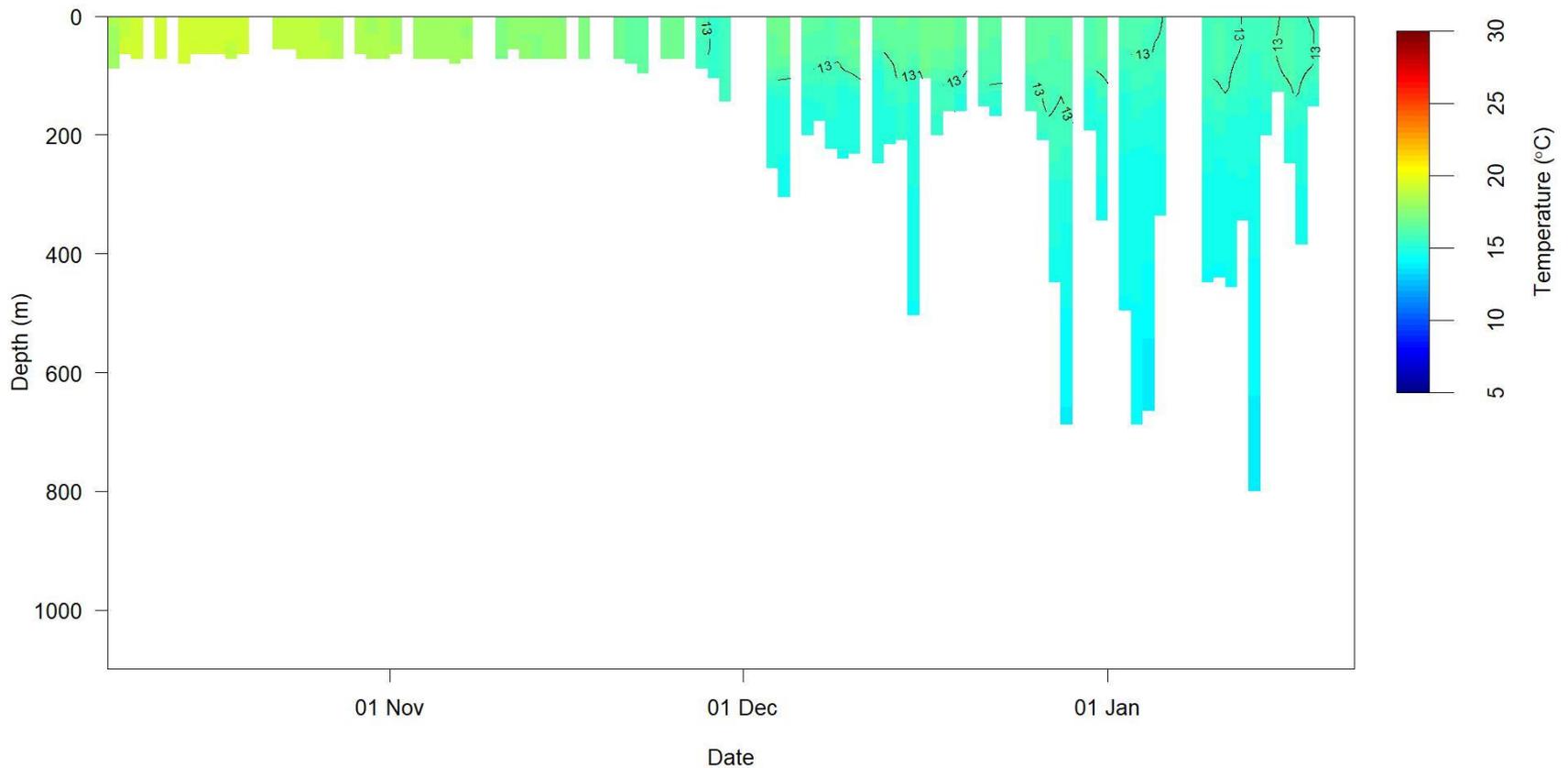
No news is good news... **16P2192**

- Sometimes even careful planning can get scuppered by a man with a tractor!
- Tag 'went silent' whilst we were searching for it
- The assumption is that it was buried by the tractor....



No news is
good news...
16P2192

- ... started reporting again just after the high tide (0200 GMT).
- The search is back on.....



No news is
good news...
16P2192

- Fish remained on-shelf until the 2nd of December
- After leaving the fish repeatedly dove to depths in excess of 400m attaining a maximum dive depth of 800m
- Min temp = 10.7 °C, max temp = 17.8°C

Thanks!



...and all the others I don't have pictures of !