

Workplan 2021



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EUROPEAN UNION

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Layout

Ray vitality Results of trial

Raised fishing line Results of two trials to date One up coming trial with lights

Survival estimate studies Mobile self-contained unit





Survival and vitality studies conducted in Ireland to date

Species	Fishing gear
Nephrops norvegicus	OTB
Sole	ОТВ
Plaice	OTB and SSC
<i>Raja</i> species	OTB

Raja species previously condition assessed in Ireland

- Cuckoo ray (Leucoraja naevus)
- Blonde ray (Raja brachyura)
- Spotted ray (Raja montagui)
- Thornback ray (*Raja clavata*)



MFV Eblana (D. 379) and study location





Assessment protocol for Raja species

Two indices:
Reflex and injury (nine categories)
Vitality (four categories)





Reflex (RAMP) assessment, injury type and vitality score

Reflex	Description	Unimpaired response	Score
Tail grab	Gently grab ray by the tip of the tail between thumb and index finger (watch out for any spines)	Actively struggles free and swims away	0 or 1
Spiracle movement	Look at the opening and closing of the valves inside the spiracles	The spiracles actively open and close	0 or 1
Startle touch	Tap gently but firmly behind the eyes and spiracles using a fingertip	Actively closes and retracts its eyes	0 or 1
Body flex	Hold the ray by its anterior end of its disc in a horizontal, plane position, one hand on either side of the mid-line (dorsal side facing up); larger specimens may be supported also by their posterior end	Actively moving its pectoral fins, tail, and body	0 or 1

Injury type	Description	Score
Bleeding head	Point bleeding and / or bruising of the head	0-3
Bleeding body	Point bleeding and / or bruising of the body	0-3
Bleeding tail	Point bleeding and / or bruising of the tail	0-3
Open wounds	Areas where skin was removed, and underlying tissue can be observed	0-3
Fin damage	Areas of the fin that were damaged and / or split	0-3

Score	State	Description
Α	Excellent	Vigorous body movement; no or minor external injuries only
В	Good	Weak body movement; responds to touching / prodding minor external injuries
С	Poor	No body movement but can move spiracles, minor or major external injuries
D	Dead	No movement of body or spiracle opening (no response to touching or prodding)

Ray vitality





Box plots of key variables in relation to vitality **B**



Observed and raised counts with proportions of each species in each vitality category

Species	Vitality	Observed	Raised	Total vitality
	Category			
		(N)	(N)	(%)
Cuckoo ray	А	31	31	84.0
	В	4	4	10.8
	С	1	1	2.7
	D	1	1	2.7
	Total	37	37	100.0
Blonde ray	А	144	628	67.9
	В	56	244	26.4
	С	12	52	5.6
	D	0	0	
	Total	212	924	100.0
Spotted ray	А	89	323	56.3
	В	31	112	20.5
	С	34	123	22.5
	D	1	4	0.5
	Total	155	562	100.0
Thornback ray	А	10	16	62.5
	В	4	7	25.0
	С	2	3	12.5
	D	0	0	
	Total	16	26	100.0



Raised fishing line



Raised fishing line

Quantities of species caught during the gear trials 1 and 2. Differences are test compared to the control

	Gear trial 1			Gear trial 2		
Species	Control (kg)	Test (kg)	Difference (%)	Control (kg)	Test (kg)	Difference (%)
Whiting	2,706	5,069	87	974	704	-28
Haddock	1,975	2,713	37	3,507	2,783	-21
Cod	798	514	-36	83	59	-29
Non-commercial species ^{&}	607	352	-42	3,275	982	-70
Mixed Flatfish*	295	116	-61	160	58	-64
Plaice	229	124	-46	356	114	-68
Monkfish	202	57	-72	115	30	-72
Others^	150	141	-6	392	249	-36
Skate and ray ^{\$}	124	33	<mark>-73</mark>	160	44	<mark>-72</mark>
Hake	78	72	-8	184	172	-7
Megrim	60	11	-72	93	16	-73

[&]Lesser spotted catshark and Gurnard species; *lemon sole, witch, turbot, sole, and brill.



^Black and white pollock, John Dory and Ling; ^{\$}spotted and blonde ray, and common skate



Front view of trawl

Mobile survival unit





Water returning to reservoir





Thanks

Questions?

