

Additional data on protected animals not reported as used within experimental procedures (2017 & 2018).

Cefas conducts applied research using fish which aims to: protect wild populations, biodiversity and the environment; and reduce disease and improve welfare in cultured stocks.

In the UK all experimental work with protected (sentient) animals which has the potential to cause suffering is regulated under the Animals (Scientific Procedures) Act 1986 (Amended Regulations 2012)ⁱ. This regulation, referred to as ASPA, is administered by the Home Office. ASPA requires researchers to minimise animal use and harm, and Establishments to record the “*source, use and final disposal of all protected animals bred, kept or used at the establishment for any regulated activities*”ⁱⁱ.

The Home Office requires annual reporting of the numbers of individual animals used in regulated procedures and the severity of the harm they experienced; national Statistics of Scientific Procedures on Living Animals are then publishedⁱⁱⁱ. As a signatory of the [Concordat on Openness on Animal Research](#) Cefas publishes data on our experimental use of animals in regulated procedures^{iv}.

Once every 5 years, the Home Office also collects “additional data” on the numbers of protected animals bred at establishments that were killed or died but not reported as used in regulated procedures. To date, the Home Office has only collected these data for 2017. With the intent to be open about our animal research, Cefas is publishing its “additional data” for 2017 and 2018 (tabulated below). Supplementary data on the numbers of fish of farmed and wild origins (i.e. not laboratory-bred) are also included for completeness.

The majority (ca. 86%) of our non-procedure fish were laboratory-bred for use in research. The species reflect their use as laboratory animals and/or relevance to the applied research. Cefas regularly reviews the numbers of broodstock held and the production of surplus animals, at both AWERB and management levels. The reduction in number between 2017 and 2018 reflects our response to changing demands for experimental use. The numbers represent:

- fish used in experiments that were not regulated procedures;
- broodstock used to produce eggs and pre-feeding larvae for non-regulated use (e.g. three-spined stickleback, zebrafish, cod, plaice);
- broodstock used to produce later developmental stage animals for regulated use (e.g. three-spined stickleback);
- surplus fish associated with rearing batches, not used after development to an unsuitable stage or size, and contingency animals (all species);
- fish that died after the first-feeding stage.

Farmed-origin fish contributed a further 13% to the total numbers, with wild-origin fish comprising <1%. The species of farmed and wild fish reflect their importance as Biodiversity Action Plan (BAP) species, and to fisheries, environmental quality, aquaculture and recreational fishing.

All fish killed were euthanised in accordance with the ASPA Schedule 1 Appropriate Methods of Humane Killing^v and where appropriate were also used to enable mandatory staff training.

Glossary

Protected animal: “All living vertebrates, other than a human, including certain immature forms, and any living cephalopod.” “Larval forms of fish and amphibians are protected animals once they are capable of feeding independently.”

Establishment: “A place holding a licence which has been granted under section 2C of ASPA”

Regulated procedure: “A procedure is regulated if it is carried out on a protected animal for a scientific or educational purpose and may cause that animal a level of pain, suffering, distress or lasting harm equivalent to, or higher than, that caused by inserting a hypodermic needle according to good veterinary practice.”

AWERB: Animal Welfare and Ethical Review Body

Additional data on the numbers of animals that were killed or died in 2017 and 2018 but were not reported as used within procedures.

Origin	Species		2017		2018		% Change 2017-2018
	Common name	Scientific name	Number	% Total	Number	% Total	
Bred for scientific use	Atlantic salmon	<i>Salmo salar</i>	4,778		2,643		
	Rainbow trout	<i>Oncorhynchus mykiss</i>	4,482		2,184		
	Atlantic cod	<i>Gadus morhua</i>	2,505		-		
	Zebrafish	<i>Danio rerio</i>	826		929		
	Three-spined stickleback	<i>Gasterosteus aculeatus</i>	680		640		
	Common carp	<i>Cyprinus carpio</i>	-		1,097		
	European plaice	<i>Pleuronectes platessa</i>	970		-		
	Sub-total		14,241	88%	7,493	83%	-47%
Farmed	Ballan wrasse	<i>Labrus bergylta</i>	939		812		
	Sea bass	<i>Dicentrarchus labrax</i>	627		167		
	Turbot	<i>Scophthalmus maximus</i>	81		339		
	Common carp	<i>Cyprinus carpio</i>	103		29		
	Barbel	<i>Barbus barbus</i>	92		-		
	Chub	<i>Leuciscus cephalus</i>	92		-		
	Goldfish	<i>Carassius auratus</i>	-		62		
	Atlantic salmon	<i>Salmo salar</i>	-		20		
	Sub-total		1,934	12%	1,429	16%	-26%
Wild-caught	European plaice	<i>Pleuronectes platessa</i>	35		5		
	Sandy goby	<i>Pomatoschistus minutus</i>	-		30		
	Dab	<i>Limanda limanda</i>	-		27		
	Atlantic cod	<i>Gadus morhua</i>	6		11		
	Common sole	<i>Solea solea</i>	7		7		
	Dragonet	<i>Callionymus lyra</i>	-		7		
	Thornback ray	<i>Raja clavata</i>	3		-		
	Bull rout	<i>Myoxocephalus scorpius</i>	2		1		
	European eel	<i>Anguilla anguilla</i>	1		-		
	Greater pipefish	<i>Syngnathus acus</i>	1		-		
	Pogge	<i>Agonus cataphractus</i>	-		1		
	Three-bearded rockling	<i>Gaidropsarus vulgaris</i>	-		1		
	Subtotal		55	0.3%	90	1%	64%
All	Total		16,230	100%	9,012	100%	-44%

ⁱ <https://www.legislation.gov.uk/uksi/2012/3039/contents/made>

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/662364/Guidance_on_the_Operation_of_ASPA.pdf

ⁱⁱⁱ <https://www.gov.uk/government/collections/statistics-of-scientific-procedures-on-living-animals>

^{iv} <https://www.cefas.co.uk/about-us/policies-plans-and-reports/>

^v <https://www.legislation.gov.uk/ukpga/1986/14/schedule/1>