

## MEMBER STATE NARRATIVE 2018

### 1. General information on any changes in trends observed since the previous reporting period.

Compared to 2017 (543,074 animals used), there is an increase of 2.43% in the number of animals used for scientific purposes in 2018 (556,271 animals used). The increase in 2018 is the result of an increased use of mice in maintenance of colonies of established genetically altered animals (not used in other procedures) and an increased use of other fish in preservation of species (mainly research on the impact of axial flow pumps on different species).

In 2018 it was noted by the European Commission that the percentage of Maintenance in Belgium was lower than the European average of 6%. This raised the question of whether this concept was understood correctly. Therefore, active contact was made with the institutions to explain the concept. Consequently, we see that this category shows a significant increase in 2018. 5.15% of the animal use now falls under Maintenance, which is more in line with the European average.

Number of use in 2016	Number of use in 2017	Number of use in 2018
534854	543074	556271

Since 2015, the numbers of re-used animals continues to decline. Compared to 2017 there is a decrease of 7.17% and even a decrease of 42.57% compared to the numbers of 2016.

Re-Use	Number of use in 2016	Number of use in 2017	Number of use in 2018
No	526723	538043	551601
Yes	8131	5031	4670
<b>Total uses</b>	<b>534854</b>	<b>543074</b>	<b>556271</b>

On the species grouping level, there are no significant changes.

Species	Number of use in 2016	Number of use in 2017	Number of use in 2018
Mammals	441476	442398	454576
Birds	30734	46812	45412
Fish	62221	52462	54843
Amphibians	1226	1241	1116
Reptiles	172	181	324
Cephalopods	0	0	0
<b>Total uses</b>	<b>535829</b>	<b>543094</b>	<b>556271</b>

Within the mammals category we notice that the use of mice is slightly increasing throughout the years (increase of 3.84% compared to 2016 and 4.64% compared to 2017). The use of rabbits increased more rapidly with an increase of 28.18% compared to 2016 and an increase of 6.37% compared to 2017. The use of pigs is also rising with an increase of 49.56% since 2016 and an increase of 9.24% since 2017. The increase compared to the use in 2017 is the result of an increase in research in the domain of the Cardiovascular Blood and Lymphatic System. In recent decades, porcine (pig) models have become very popular for cardiovascular research. Their physiology, heart size, immune system and anatomy closely resemble that of humans and their coronaries have very little collateral circulation.

On the other hand a decrease was noted for rats and guinea-pigs. As you can see in the table below, the use of rats decreased by 34.06% since 2016 and by 16.04% since 2017. This change can be explained at least in part by a reduced use of rat studies (and increased use of mouse studies) in Alzheimer's research. The use of guinea-pigs decreased by 13.52% since 2016 and by 9.72% since 2017 due to a reduction of the use of this species in the Regulatory field.

Animal Species	Number of use in 2016	Number of use in 2017	Number of use in 2018
Mice	336052	334054	348937
Rats	30337	23826	20003
Guinea-Pigs	16223	15541	14029
Rabbits	48036	57888	61575
Pigs	3630	4970	5429

In the birds category, there is an increase for domestic fowl compared to 2016 (49.46%) but a status quo compared to 2017. The other birds increased significantly compared to 2016 (37.86%) but decreased this year (13.01%).

Animal Species	Number of use in 2016	Number of use in 2017	Number of use in 2018
Domestic fowl	26230	39674	39203
Other birds	4504	7138	6209

In the fish category, there is a decrease in the use of zebra fish compared to 2016 (30.47%) and compared to 2017 (8.9%). The decrease in the use of zebra fish compared to 2017 can partly be explained by the fact that a number of large projects requiring more laboratory animals ended in 2017.

The use of other fish however increased by 15.92% compared to 2016 (and by 20.45% compared to 2017). The increase in 2018 is, among other things, due to an increasing use of larvae of North Sea sole (research that was temporarily put on hold in 2017 and was restarted in 2018) and the use of fish in research on the impact of axial flow pumps.

Animal Species	Number of use in 2016	Number of use in 2017	Number of use in 2018
Zebra fish	37256	28435	25904
Other Fish	24965	24027	28939

## **2. Information on significant increase or decrease in use animals in any of the specific areas and analysis of the reasons thereof.**

Between 2017 and 2018, basic research diminished by 7.73%. This was in particular due to decreases in the area of Immune System. Other important decreases were noted in the area of the Nervous System and other basic research. However, the research in the domain of the Cardiovascular Blood and Lymphatic System significantly increased (31.49%) between 2017 and 2018.

During the same time period Translational and applied research augmented by 3.74%. We noted a significant increase in the research on Human cancer (18,138 animal uses in 2018 compared to 12,720 in 2017) and in Animal Diseases and Disorders (22,693 animal uses in 2018 compared to 17,960 in 2017). A decrease was noted in Non-regulatory toxicology and ecotoxicology (10,308 animal uses in 2018 compared to 13,111 animals in 2017).

### 3. Information on any changes in trends in actual severities and analysis of the reasons thereof.

Within the actual severities classification we noted that the category "severe" decreased from 15.61% to 12.48%. The decrease in severity is mainly the result of a decrease in research in Oncology and Immune System. These types of research are more often classified as "severe" because of the induction of tumours leading to metastases, tumours that lead to cachexia, invasive bone tumours, ulcerating tumours, loss of immunity, etc.

### 4. Particular efforts to promote the principle of replacement, reduction and refinement and its impacts on statistics if any.

No specific new initiatives in 2018. Continuation of the RE-Place project to create a database that brings together expertise on alternative methods for animal testing.

### 5. Further breakdown on the use of "other" categories if a significant proportion of animal use is reported under this category.

#### 1. Other fish

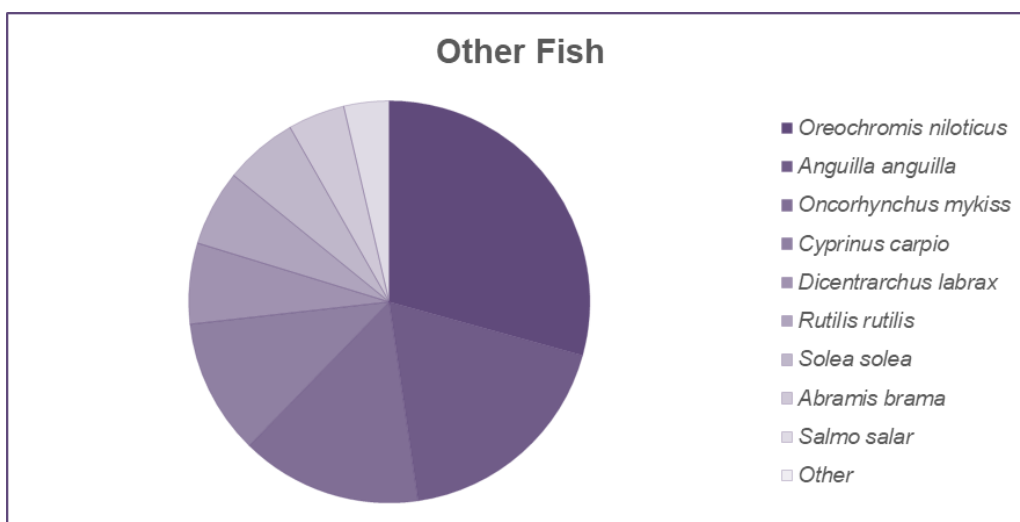
52,77% of the fishes are reported under the "other" category.

They are mostly Cichlidae (*Oreochromis niloticus* represents 26.46% of other fish), Anguillidae (*Anguilla anguilla* represents 16.62% of other fish), Salmonidae (*Salmo salar* and *Oncorhynchus mykiss* represent 16.50% of other fish), Cyprinidae (*Cyprinus carpio*, *Rutilus rutilus* and *Abramis brama* represent 19.54% of other fish), Moronidae (*Dicentrarchus labrax* represents 5.87% of other fish), Soleidae (*Solea solea* represents 5.34% of other fish).

Other Species	Number of uses
<i>Oreochromis niloticus</i>	7656
<i>Anguilla anguilla</i>	4811
<i>Oncorhynchus mykiss</i>	3820
<i>Cyprinus carpio</i>	2853
<i>Dicentrarchus labrax</i>	1700
<i>Rutilus rutilus</i>	1600
<i>Solea solea</i>	1544
<i>Abramis brama</i>	1200
<i>Salmo salar</i>	955
<i>Nothobranchius furzeri</i>	567
<i>Gasterosteus aculeatus</i>	547
<i>Kryptolebias marmoratus</i>	460
<i>Poecilia reticulata</i>	300

<i>Lota lota</i>	270
<i>Pleuronectes platessa</i>	131
<i>Limanda limanda</i>	104
<i>Gadus morhua</i>	65
<i>Clarias gariepinus</i>	50
<i>Raja clavata</i>	38
<i>Ophthalmotilapia ventralis</i>	28
<i>Synodontis grandioops</i>	26
<i>Microsynodontis batesii</i>	16
<i>Pseudotropheus saulosi</i>	14
<i>Neogobius melanostomus</i>	12
<i>Ophthalmotilapia nasuta</i>	11
<i>Pygocentrus nattereri</i>	9
<i>Poecilia sphenops</i>	8
<i>Raja brachyura</i>	8
<i>Nimbochromis venustus</i>	7
<i>Parophidion vasali</i>	7
<i>Myleus schomburgkii</i>	6
<i>Synodontis eupterus</i>	6
<i>Alosa fallax</i>	5
<i>Carassius auratus</i>	5
<i>Catoprion mento</i>	5
<i>Metynnis hypsauchen</i>	5
<i>Piaractus brachypomus</i>	5
<i>Pygopristis denticulata</i>	5
<i>Gerochromis niloticus</i>	4
<i>Raja undulata</i>	4
<i>Synodontis njassae</i>	4
<i>Synodontis soloni</i>	4
<i>Botia morleti</i>	3
<i>Chromobotia macracanthus</i>	3
<i>Idotropheus sprengerae</i>	3
<i>Myloplus rubripinnis</i>	3
<i>Pantodon buchholzi</i>	3
<i>Pygocentrus cariba</i>	3
<i>Sahyadria denisonii</i>	3
<i>Serrasalmus maculatus</i>	3
<i>Serrasalmus spilopleura</i>	3
<i>Synodontis ilebrevis</i>	3
<i>Ancistrus dolichopterus</i>	2
<i>Botia modesta</i>	2
<i>Epalzeorhynchus bicolor</i>	2
<i>Helostoma temminckii</i>	2
<i>Idotropheus sprengerae</i>	2
<i>Maylandia zebra</i>	2
<i>Pangasianodon hypophthalmus</i>	2
<i>Pangasius sp.</i>	2
<i>Pygocentrus piraya</i>	2
<i>Raja montagui</i>	2

<i>Serrasalmus elongatus</i>	2
<i>Synodontis sp.</i>	2
<i>Colossoma macropomum</i>	1
<i>Corydoras panda</i>	1
<i>Corydoras sp.</i>	1
<i>Hyphessobrycon sp.</i>	1
<i>Hypostomus plecostomus</i>	1
<i>Metynnis lippincottianus</i>	1
<i>Pterophyllum confer scalare</i>	1
<i>Puntigrus tetrazona</i>	1
<i>Serrasalmus manuei</i>	1
<i>Synodontis victoriae</i>	1
<b>Total uses:</b>	<b>28939</b>



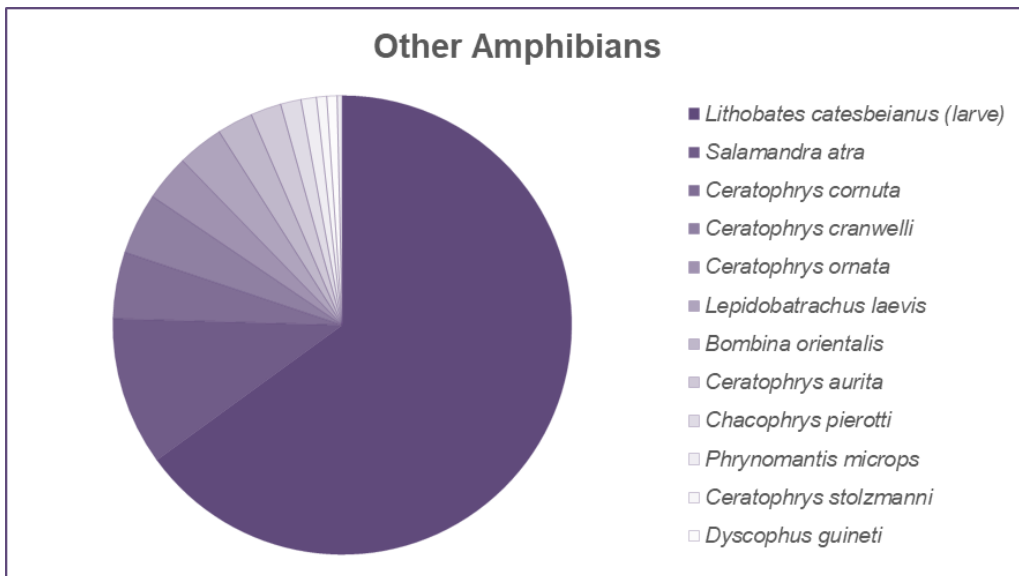
## 2. Other amphibians

24.82% of the amphibians are reported under the “other” category.

They are mostly Ranidae (*Lithobates catesbeianus larva*) (64.98% of other amphibians), Ceratophrydae (in order of importance: *Ceratophrys cornuta*, *Ceratophrys cranwelli*, *Ceratophrys ornata*, *Lepidobatrachus laevis*, *Ceratophrys aurita* and *Ceratophrys stolzmanni*) (18.41% of other amphibians) and Salamandridae (*Salamandra atra*) (10.47% of other amphibians).

Other Amphibians	Number of uses
<i>Lithobates catesbeianus (larve)</i>	180
<i>Salamandra atra</i>	29
<i>Ceratophrys cornuta</i>	13
<i>Ceratophrys cranwelli</i>	12
<i>Ceratophrys ornata</i>	9

<i>Lepidobatrachus laevis</i>	9
<i>Bombina orientalis</i>	7
<i>Ceratophrys aurita</i>	6
<i>Chacophrys pierotti</i>	4
<i>Phrynomantis microps</i>	3
<i>Ceratophrys stolzmanni</i>	2
<i>Dyscophus guineti</i>	2
<i>Xenopus muelleri</i>	1
<b>Total uses:</b>	<b>277</b>



### 3. Other birds

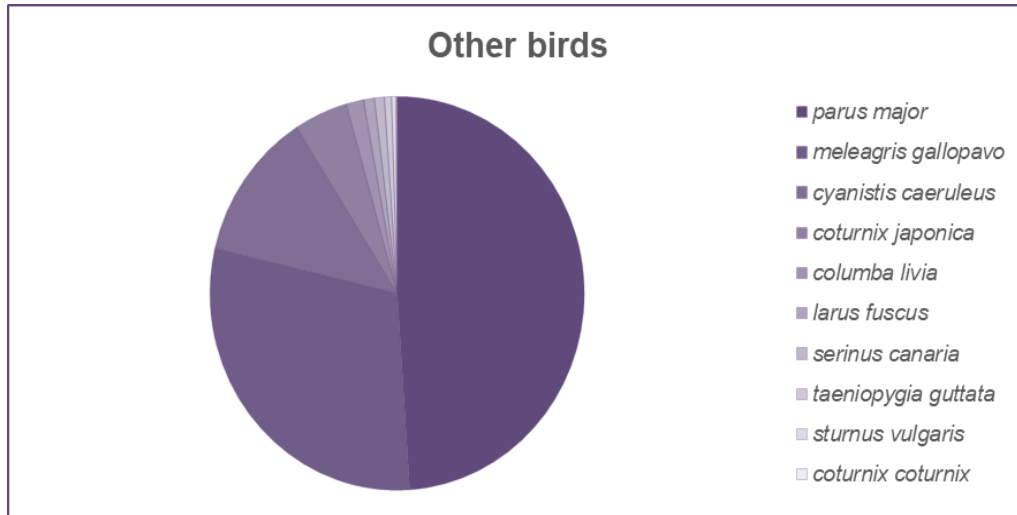
13,67% of the birds are reported under the “other” category.

They are mostly Paridae (*Parus major* and *Cyanistis caeruleus*) (61,23% of other birds) and Phasianidae (*Meleagris gallopavo*, *Coturnix japonica*, *Coturnix coturnix*) (34.47% of other birds).

The other birds are members of Columbidae (*Columba livia*), Laridae (*Larus fuscus*), Fringillidae (*Serinus canaria*), Estrildidae (*Taeniopygia guttata*) and Sturnidae (*Sturnus vulgaris*).

Other Birds	Number of uses
<i>Parus major</i>	3038
<i>Meleagris gallopavo</i>	1847
<i>Cyanistis caeruleus</i>	764
<i>Coturnix japonica</i>	287
<i>Columba livia</i>	94
<i>Larus fuscus</i>	58

<i>Serinus canaria</i>	53
<i>Taeniopygia guttata</i>	38
<i>Sturnus vulgaris</i>	24
<i>Coturnix coturnix</i>	6
<b>Total uses:</b>	<b>6209</b>



**6. Details on cases where the 'severe' classification is exceeded, whether pre-authorized or not, covering the species, numbers, whether prior exemption was authorised, the details of the use and the reasons why 'severe' classification was exceeded.**

As in previous years, there were no cases in which the 'severe' classification was exceeded.