

July 2020

# Fish Welfare Initiative



Photo Credit: Jeanne M

## Fish Movement Survey Results

# **Fish Movement Survey Results**

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*We are grateful for assistance and feedback from Tom Beggs (Faunalytics, Research Scientist) and Suzanne McMillan (ASPCA, Farm Animal Welfare Campaigns Content Director) on this report. Their assistance does not necessarily imply that they agree with the conclusions we draw.*

## **Summary**

To better understand the growing fish welfare advocacy movement, Fish Welfare Initiative ran a survey of 52 existing animal protection organizations selected due to their current work on fish issues or their intention to do so in the future. The results were encouraging, showing that most of these organizations are already working on fish issues and that a majority of the rest are planning to do so in the next three years. Respondents noted a variety of tactics and regional focuses for their work. The following are our key findings:

- Of the organizations that plan to work on fish issues, the majority (92%) either already work on fish issues or plan to do so in the next three years.
- Fish welfare work has a broad international focus; for every continent except Antarctica, at least 20% of organizations are planning to work on fish issues there.
- The type of work planned is diverse. This diversity is exciting, as we suggest that now is a critical time to “explore” work into fish welfare.
- A lack of scientific research and a low knowledge base remain significant bottlenecks in the fish welfare movement. Organizations want more research into foundational questions around fish welfare.
- 92% of respondents showed some interest in creating a working group to promote collaboration in the fish welfare space.

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## **Introduction**

With billions of fish alive in farms<sup>1</sup> and potentially trillions more caught in the wild each year,<sup>2</sup> it is not surprising that many animal protection organizations are considering how they may be able to improve their welfare. However, fish welfare is a young field, and there are many open questions about how the animal protection movement will engage with it.

Between May and June 2020, Fish Welfare Initiative surveyed 52 organizations on when, where, and how they plan to work for fish. Here we display and analyze the results from this survey. In addition, we reviewed the granting history of three major funding groups (Open Philanthropy Project, EA Animal Welfare Funds, and Animal Charity Evaluators) to assess historical funding for fish and crustacean welfare projects.

Between May and August of 2019, [the American Society for the Prevention of Cruelty to Animals \(ASPCA\)](#) conducted interviews with ten organizations to discuss their plans in the

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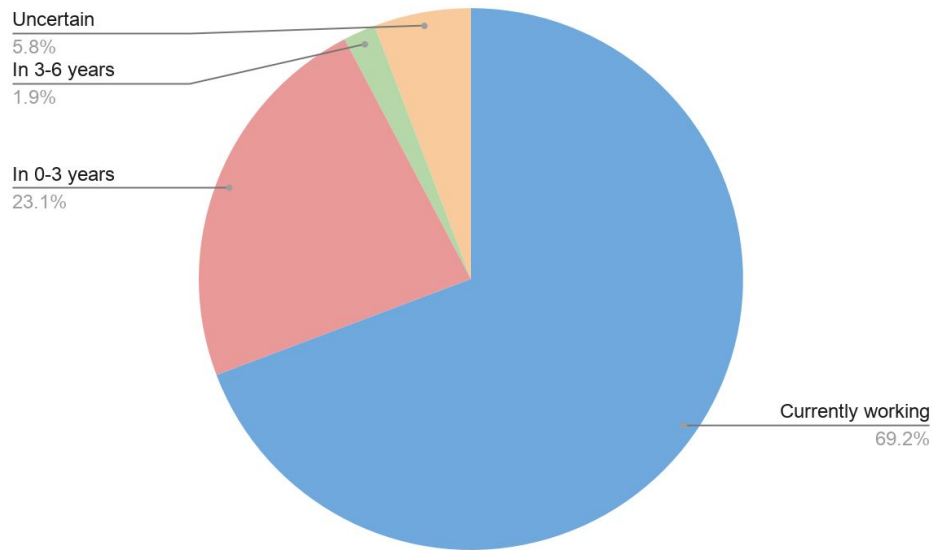
<sup>1</sup> Mood, A. (n.d.). [Numbers of Farmed Fish Slaughtered Each Year.](#)

<sup>2</sup> Mood, A. (n.d.). [Numbers of fish caught from the wild each year.](#)

aquatic animal welfare space (nine of which also answered our survey). We also assess and incorporate lessons from the qualitative data gathered in these interviews.

## When and Where

As this was a prerequisite for the survey, all respondent organizations either currently work or plan to work on fish issues. We asked organizations when they plan to engage in this work:



n=52

**Figure 1:** “When does your organization roughly expect to work on fish issues?”

36 organizations are already working for fish in some capacity, with a further 12 planning to in the next three years. The results above are interesting, considering that fish welfare is commonly cited as a neglected topic within animal welfare work. Note that there was no question of the scale of the projects organizations were engaged in, thus smaller projects could constitute a large portion of those identified. However, organizations are conducting large projects. For example, Compassion in World Farming’s [Rethink Fish campaign](#).

Organizations working on fish welfare issues currently include:

- [Eurogroup For Animals](#) increases visibility and pushes for fish welfare issues within the European Union.
- [OneKind](#) petition to stop the expansion of Salmon farming in Scotland
- [Federation of Indian Animal Protection Organizations](#) has received a grant to run legislative campaigns around farmed fish welfare in West Bengal and Andhra Pradesh.<sup>3</sup>

<sup>3</sup> More information on FIAPO’s grant can be found [here](#)

We also asked respondents to specify the continents they are working/expect to work in:

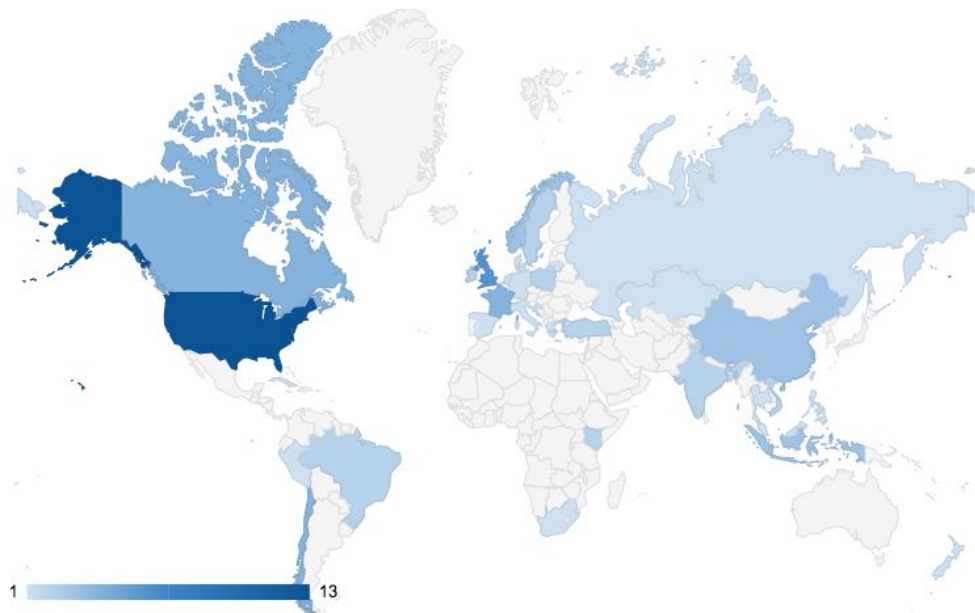
Continent	Number of respondents	Percentage of respondents
Europe	36	69%
The US or Canada	25	48%
Asia	20	38%
Latin America	17	33%
Africa	12	23%
Australia and Oceania	11	21%

*n=52*

**Table 1:** “Where does your organization work or expect to work on fish issues?”  
 Note that respondents could select multiple options.

Each continent has a significant interest (each with >20% of respondents working/planning to work there).<sup>4</sup> This is positive news, and we hope it speaks to a global effort towards better fish welfare.

Respondents also specified the countries they work/expect to work in:



**Figure 2:** “Please specify the exact country(ies), if known.”  
 Note that respondents could select multiple options.

<sup>4</sup> Note that there is a bias in the sample due to Fish Welfare Initiative’s contacts in Asia, Europe, and the US and Canada.

Note that this only includes the countries that respondents listed; many respondents were unsure and did not list any.

Latin American countries were specified only eight times, three times for African countries, and once for Oceanian countries (this compares to 30 times for European countries and 17 times for Asian countries). This discrepancy seems to show that, although groups plan to work broadly across a range of continents, in some continents there is less certainty as to the specific countries.

## A Diversity of Approaches

The following is a list of the various approaches that organizations said they were either employing or planning to in the future:

Category	No. respondents working for fish	No. respondents planning work for fish	Percentage of total respondents
Raising awareness	31	6	60%
Research	21	8	47%
Governmental policy work	20	7	44%
Corporate outreach	17	5	35%
Movement building	11	7	29%
Corporate campaigns	11	5	26%
Certification schemes	9	0	15%

*n*=47
*n*=15

**Table 2:** “If your organization already works on fish issues, what type of work does it do?” or “If your organization \*does not yet\* work on fish issues, what sort of work does it plan to do?”  
 Note that respondents could select multiple options.

Respondents were also able to write additional types of work. Of the eighteen organizations which wrote answers:

- Six mentioned other legal approaches, such as litigation and representing clients.
- Four organizations mentioned investigations or otherwise documenting conditions on farms.
- Three organizations mentioned assisting start-ups (both nonprofit and for-profit) that relate to fish.

It is exciting to see a high diversity around the type of work planned. There remain many unanswered questions around the best approaches towards improving fish welfare, and so testing approaches is extremely valuable (especially during the next three years).

Around 39% of respondents plan to do some kind of corporate work (either outreach, campaigns, or both). For example, [Anima International's](#) Lithuanian branch successfully campaigned to ban the live sale of carp.<sup>5</sup>

In the ASPCA's interviews, they also asked organizations about which fish groups they are working or plan to work for:

Fish Group	No. respondents
Salmon	4
Tilapia	4
Catfish	3
Seabass	2
Sea Bream	2
Pangasius	2
Carp	1

*n=10*

**Table 3:** Interest in working for fish groups

However, groups also had reservations around working on certain fish groups. Catfish were mentioned as a fish that is potentially less affected by poor welfare conditions, and thus should be a lower priority. Some groups also questioned whether working on Salmon was the most effective. They argued that Salmon's already comparatively high-welfare conditions and their general unsuitability to farming means that it is difficult to make substantial welfare improvements for them.<sup>6</sup>

<sup>5</sup> Vaitkevičiūtė, G. (2020). [Victory for fish in Lithuania](#).

<sup>6</sup> For an assessment on Salmon welfare in modern aquaculture, see [Fish Welfare Initiative's report](#). For a review of welfare for Atlantic Salmon see: Studer, B. H. (2018). [Salmo salar \(Summary\)](#).

The ASPCA also asked about which welfare improvements organizations are implementing/interested in implementing. Respondents focused mostly on farmed fish, giving a broad range of responses for on-farm improvements. Slaughter, stocking density, water quality, handling, and environmental enrichment were all mentioned. One organization mentioned aligning welfare asks with environmental benefits as a possible tactic for increasing the likelihood of success (for example, projects targeting ocean systems).

## Remaining Bottlenecks for Work on Fish Issues

“Bottleneck” is a term describing a problem that prevents progress in an area. We asked respondents to choose what they thought the key bottlenecks were for fish welfare work and what would alleviate them.

### Perceived Bottlenecks

We asked respondents to choose key bottlenecks for fish welfare work:

Category	Total respondents	Percentage of respondents
Lack of scientific research and knowledge base	24	44%
Lack of funding	23	42%
Lack of public support	23	42%
Currently focused on other issues	21	38%
Difficulty getting corporations/producers to commit to changes	18	33%

*n=55*

**Table 3:** “What are or what do you expect will be your organization’s key bottlenecks for work on fish issues, if any?”

*Note that respondents could select multiple options.*

Organizations saw all the bottlenecks given as significant concerns (with each bottleneck being chosen by over 30% of respondents).



More distinction arises when we divide responses by those who are currently working for fish and those who are not yet:

Category	Percentage of Respondents		
	Work for fish	Don't yet	Difference
Lack of scientific research and knowledge base	43%	44%	-1%
Lack of funding	35%	56%	-21%
Lack of public support	51%	22%	29%
Currently focused on other issues	32%	50%	-18%
Difficulty getting corporations/producers to commit to changes	46%	6%	40%

n=55

**Table 4:** *Difference in bottlenecks between organizations currently working for fish and those that are not yet*

These results could suggest that organizations currently working on fish welfare are more aware of the difficulty of winning corporate commitments and gaining public support, while those organizations that do not yet work on fish welfare are constrained by lack of funding and work on other issues. However, note that this compares 37 respondents currently working for fish against 18 who do not, and as such, we may question the validity of conclusions drawn from these smaller sample sizes.

In the ASPCA’s interviews, on top of many of the bottlenecks discussed above, organizations also mentioned that it has been challenging to make progress within the aquaculture industry due to a lack of engagement from the industry itself. One respondent said they usually find that industry groups were responsive until presented with materials on fish welfare and potential improvements.

**Bottleneck Alleviation**

We asked respondents, *“Are there any specific projects you would like to see other organizations do that would alleviate these bottlenecks?”*. This was an open-ended question with no prompts. Here are some of their responses:

**“Coordination and sharing amongst organizations”**

Kathy Hessler, Aquatic Animal Law Initiative

**“People do not connect to fish, and we need a better understanding of why that is and how to change public perceptions in order to make real headway.”**

Lauri Torgerson-White, Mercy For Animals

**“Research that determines what reforms would truly improve fishes' well-being in aquaculture.”**

Chris Holbein, Humane Society of the United States

We generated categories for popular themes through the projects people suggested. Below is a table presenting the common themes and their usage:

Category	Number of respondents	Percentage of respondents
Research	12	32%
Consumer knowledge and awareness	9	24%
Collaboration	7	18%
Investigations/help with investigations	6	16%
Scientific or academic knowledge	4	11%
Funding	3	8%
Proof of concept/ existing work to emulate	2	5%

n=38

**Table 5:** “Are there any specific projects you would like to see other organizations do that would alleviate these bottlenecks?”

*Note that one response could be in multiple categories.*

The category “Scientific or academic knowledge” refers to research efforts which we felt fell outside of the realm of the secondary research capable by non-academic organizations such as Fish Welfare Initiative, requiring primary research, or high levels of specialization.

Research was the largest trend we noticed that groups believed would alleviate major bottlenecks. Many of the questions relating to research seemed crucial to overcome before committing to work in fish welfare. For example, whether we should focus on farmed or wild-caught fish.

The second most common trend, consumer awareness, was also often cited as being foundational to successful fish welfare work. How much people care about fish welfare is still an open debate, although there is some suggestion that Europeans may care about fish welfare to a similar degree that they care about the welfare of chickens and pigs.<sup>7</sup>

### Still a Need for More Research

We also asked respondents, *“If it would be helpful to your [future] projects for other organizations to conduct fish-related research, what sort of research or which research projects would be most helpful?”*. Here are a few responses:

**“More research on consumer perception and materiality of terms like “humane,” “sustainable,” “natural” in the context of fish products.”**

Jay Shooster, Factory Farming Fellowship Program, Richman Law Group

**“Mapping the major needs of species in aquaculture and designing enrichments and interventions to meet those needs.”**

Douglas Waley, Eurogroup For Animals

**“Primary research on farming conditions and their impact on fish welfare. Whether water quality, oxygen levels, stocking density etc.”**

Shreya Paropkari, Humane Society International, India

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<sup>7</sup> Šimčíkas, S. (2020). [How much do Europeans care about fish welfare?](#).

We generated tags for popular themes through the projects people suggested. Here are the resulting numbers:

Category	Number of respondents	Percentage of respondents
Research into specific interventions and intervention prioritization	18	50%
Foundational research	11	31%
Information on specific species and species prioritization	8	22%
Information on slaughter and species-specific slaughter methods	6	17%
Scientific or academic-style research	6	17%
Information on the conditions found on farms	5	14%
Consumer and consumption behaviour	3	8%
Information on the value chain, economics, and industry	3	8%
Environmental impacts, public health impacts, and worker welfare	3	8%
Country research	2	6%

*n=36*

**Table 6:** *“If it would be helpful to your [future] projects for other organizations to conduct fish-related research, what sort of research or which research projects would be most helpful?”*

Research into interventions was the most popular theme, with eighteen instances in the responses. Six of those eighteen spoke specifically about slaughter, while most others called for research into interventions more generally.

As above, the category “Scientific or academic-style research” refers to research efforts that require primary research or high levels of expertise and specialization. “Foundational research” refers to questions that we felt were fundamental to working for fish. For example, whether fish are sentient (3 organizations mentioned this) and how to measure their welfare (2 organizations mentioned this).

## Interest in Collaboration

Finally, we asked respondents for their interest in joining a new fish working group

Responses	Number of respondents	Percentage of respondents
Yes	33	63%
Maybe	15	29%
No	4	8%

*n* = 52

**Table 7:** “Would a representative from your organization be interested in being involved with a working group to promote collaboration in the fish welfare space?”:

In the ASPCA’s interviews, respondents also offered suggestions for the kinds of collaborations that would be useful, mentioning sharing research and information, mapping out the landscape of the aquaculture and fisheries industries, coordinating messaging on fish welfare, and creating joint efforts to align certification standards. The ASPCA’s respondents also mentioned potential collaboration with non-animal protection organizations such as environmental organizations or welfare workshops with producers.

For those interested, [Eurogroup For Animals](#) currently runs a fish working group.

## Current Funding in Fish Welfare

To further explore the landscape of the fish movement, we also reviewed the granting history of three major funding groups: Open Philanthropy Project, EA Animal Welfare Funds, and Animal Charity Evaluators.

For each fund, we searched their respective databases for the keywords “fish,” “crustacean,” and “aquaculture.” We then assessed each result to ensure that they were, in fact, instances of organizations working directly for fish or crustacean welfare (some results, for example, discussed the value of ethical consumerism in areas with high fish consumption). Below are the results of this method:

- [Open Philanthropy Project](#) has given 15 grants to projects working on fish or crustaceans, the sum of which totals 9% of the funding they have given to farmed animal welfare projects (\$10,412,051).

- [EA Animal Welfare Funds](#) has given seven grants to projects working on fish or crustaceans, the sum of which totals 5% of the funding they have given to farmed animal welfare projects (\$4,597,000).
- [Animal Charity Evaluators](#) has given one grant to a project explicitly working on fish or crustaceans, the sum of which totals 2% of the funding they have given to farmed animal welfare projects (\$40,000). However, we expect that more organizations have done work for fish with ACE grants but were not flagged as doing so (many of the organizations who have said they work for fish in this survey have received money from the Animal Charity Evaluators fund).

The EA Animal Welfare Funds has explicitly stated that they want to fund projects for fish and crustacean welfare, stating that "efforts that aim to improve the welfare of neglected farmed animals such as fish, or invertebrates, especially shrimp and prawns... are of particular interest to the fund managers."<sup>8</sup>

Our impression is that all three of these funds are highly interested in funding more work on fish-related projects in the future and that the bottleneck so far has primarily been a lack of suitable funding matches.

## Fish Welfare Initiative's Takeaways

This section speculates on what the data above means for fish within the animal protection movement and outlines Fish Welfare Initiative's main takeaways.

Firstly, it is encouraging to see the wide variety of approaches organizations are planning to take for fish welfare. Considering previous successes, many organizations working for chicken welfare have made change through influencing corporations; we found that 39% of respondents plan to do corporate work of some kind. However, 46% of organizations currently working for fish believe "difficulty getting corporations/producers to commit to changes" to be a key bottleneck. This number is dramatically higher than the 6% of organizations not currently working for fish, implying that it may be surprisingly difficult to obtain commitments for fish. Furthermore, 42% of organizations said that public support (which is often considered an essential element of a successful corporate campaign) was a key bottleneck of fish welfare work. Thus, it is encouraging to see diversity in the planned approaches, allowing for new strategies to be tested. Ultimately, we do not believe that we can draw any firm conclusions on what approaches do and do not work for fish welfare from this data. Instead, we think these results highlight the need to explore approaches for fish welfare.

It is exciting to see that work for fish welfare is (and is planned to be) broadly distributed globally. Each continent received over 20% of respondents planning to work there or

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<sup>8</sup> Greig, K., Bollard, L., Beck, A., and Sarek, K. (2020). [Request for proposal - EA Animal Welfare Fund](#).

currently doing so. We hope that this broad distribution reflects a global focus for fish welfare work.

There appears to be a need for more knowledge and understanding of fish welfare within the animal movement. 44% of respondents said that a lack of scientific research and knowledge base was a key bottleneck. Furthermore, we considered 31% of the desired research to contain “foundational questions,” such as whether fish are sentient or whether farmed or wild-caught fish should be the focus. Thus, there seems to be a deficit of knowledge around fish welfare issues that is preventing organizations from progressing. Some of this research likely exists already and merely needs to be shared with organizations.<sup>9</sup> However, we expect the majority of research questions to be currently unexplored.

Some of the research required is academic; we considered 17% of desired research as requiring scientific or academic expertise. Thus, it is encouraging to see groups like [Aquatic Life Institute](#) regranting to promising academic work.<sup>10</sup> However, much of the needed research is combining existing literature on fish welfare and stimulating dialogue around best strategy. We currently expect research of this nature to be particularly high-value. Of the research projects respondents were interested in, the most popular theme was information on welfare interventions. 50% of desired research involved information on interventions, with 17% being specifically about slaughter.

In general, it appears that organizations are finding many barriers to improving fish welfare. For each bottleneck, over 30% of respondents flagged it as a key issue. In the ASPCA's interviews, organizations discussed that some living conditions for fish are so complicated that there's no easy solution to improving their welfare. This is partially due to established engineering structures that are hard to change.

From this survey, Fish Welfare Initiative suggests the next steps should be to increase communication between organizations (perhaps through another working group), a plan be made involving interested organizations to address key bottlenecks through research and experimentation, and finally that both successes and failures are shared in order to inform a broader strategy to promote better welfare outcomes for fish.

## Conclusion

Fish welfare is an emerging topic and looks to continue to grow in the animal protection movement. However, our intuition is that lots of the current work is small in scale and that much more research and exploration is needed before this can change. The main gaps that

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<sup>9</sup> For a list of resources on fish welfare, [see below](#)

<sup>10</sup> Bench, W., King-Nobles, H., Billington, T., and Schwartz, R. (2020). [New EA Fish Orgs: Collaboration between Fish Welfare Initiative and Aquatic Life Institute](#).

we have identified are research into foundational questions of fish welfare, exploration of different possible welfare improvements (or “asks”) that organizations can make, and knowledge around whether the public is interested in fish welfare.

Many of this survey’s results seem to show that the animal protection movement is aligning itself into an “explore mindset” (a large number of organizations are working or will soon work on fish, presumably at a small scale, exploring different approaches and countries).<sup>11</sup> These results are encouraging, and it will be important to capture the insights gained, share them broadly, and utilize existing information.

With fish welfare emerging as a potential focus of the animal protection movement, now is a particularly important time for research and experimentation that aims to resolve the questions stunting progress for fish welfare. We hope to continue to see growth in this area.

If you would like to know more about the results of Fish Welfare Initiative’s survey, feel free to [contact us](#). If you would like to learn more about the ASPCA’s findings from their interviews, you can also [contact them](#).

## List of Resources

The ASPCA also asked their respondents to share resources they had found valuable when researching the welfare of fish or other aquatic animals. Below is this list with some additions from Fish Welfare Initiative.

### Animal Welfare NGO General Materials

- Mercy For Animals investigations:
  - [Catfish slaughter](#)
  - [Driftnets](#)
- Eurogroup for Animals’ [fish welfare page](#) and [#Act4Fish](#)
- Compassion In World Farming’s [fish welfare webpage](#)
- The Humane League’s [pescetarianism information page](#)
- Eurogroup for Animals’ [website on the welfare of wild-caught fish](#)
- ASPCA’s [plant-based seafood product list](#)
- Fishcount’s [estimates of numbers for wild fish caught, farmed fish slaughtered, crustaceans slaughtered, and forage fish killed for feed](#)
- Fishcount’s [report on the welfare of wild-caught fish](#)
- Fishcount’s [strategy towards more humane fishing in the United Kingdom](#)

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<sup>11</sup> The “explore mindset” refers to the concept of exploring versus exploiting. For more on this topic, see Conor, T. (2018). [The Multi-Armed Bandit — to explore or exploit?](#)



### Public/Consumer Attitudes Data

- [Eurogroup for Animals /CIWF 2018 public survey](#)
- Mercy For Animals' 2017 research into [public concern for farmed fish welfare](#)
- Schweitzer Foundation/Kaufland [joint consumer survey](#)
- Rethink Priorities' [How much do Europeans care about fish welfare? \(An analysis of relevant surveys\)](#)

### Grant Funding Landscape

- Open Philanthropy Project's fish strategy-related materials:
  - [Blog](#)
  - [List of all grants issued](#)
- ACE granting history
  - [Spring 2019](#)
  - [Fall 2019](#)
- EA Animal Welfare Fund
  - [Grant proposal request](#)
  - [List of all grants issued](#)

### Animal Welfare Science

- Fair Fish's [fish ethology and welfare research group](#), including [Species-specific ethology page \(FishEthoBase\)](#)
- Global Aquaculture Alliance [virtual conference Oct 6-8, 2020](#)
- [Aquaculture division of EU Fisheries Commission](#)
- World Animal Protection reprinted [scientific studies](#) on fish cognition, etc.
- Presentations from Summer Shoal fish ethology & welfare conferences:
  - [2017](#)
  - [2018](#)
  - [2019](#)
- HSUS's "Industry Impacts on Aquatic Animals" materials (within their broader [Farm Animal Welfare Science](#) page)
- [2017 paper: Domestication and Welfare in Farmed Fish](#)
- World Animal Protection: Two Concepts in Animal Welfare modules – (1) [wild-caught and farmed fish](#); and (2) [farmed fish and aquatic invertebrates](#)
- 2018 Eurogroup report: [Fish Welfare in European Aquaculture](#)
- [Animal Domestication book with recent fish domestication footnotes](#) (free access online)
- [2020 online fish welfare book](#)
- Humane Slaughter Association's ["Humane Harvesting of Fish" guide](#)
- [Welfare findings compiled by Norwegian research body Norecopa](#)
- European Commission 2017 study on farmed fish transport & slaughter:
  - [Executive Summary](#)
  - [Report](#)

### Legal Standards

- [OIE guidelines for the welfare of farmed fish during transport and slaughter](#)
- [European Union organic production rules](#) including some fish standards
- European Council regulation on [farmed animal welfare during transport \(includes fish\)](#)
- EU Council regulation on [animal welfare during slaughter \(including fish\)](#)
- Council of Europe's [farmed fish welfare recommendations](#)
- European Commission's [directive on farm animal welfare \(including fish\)](#)
- European Commission's [2018 report on potential for fish slaughter standards](#)

### Marketplace Standards for Production/Sourcing

- Compassion In World Farming's [retailer sourcing recommendations](#)
- Retailer-developed fish-sourcing criteria:
  - [Marks & Spencer](#) - (noted as the most detailed criteria out there)
  - [Aldi-US](#)
  - [Aldi-Nord](#)
  - [Aldi-UK/Ireland](#)
- Global Aquaculture Alliance's best practices/certification (through [Best Aquaculture Practices](#) farmed-fish certification program) including animal welfare standards:
  - [Finfish and Crustacean Farms](#)
  - [Salmon Farms](#)
  - [Mollusk Farms](#)
  - [Hatcheries & Nurseries \(for finfish, crustaceans, mollusks\)](#)
  - [Feed Mills](#)
  - [Seafood Processing](#)
- [Global Coalition for Animal Welfare \(GCAW\)](#)—founded by Aramark, Compass Group, Elior Group, IKEA Food Services, Nestlé, Sodexo, and Unilever—[includes "farmed fish welfare" as one of 5 current priority areas](#). (Not public intel: they're starting with salmon)
- [RSPCA Assured standards](#) for farmed Atlantic salmon and farmed Rainbow trout
- Australia RSPCA's [standards for farmed Atlantic salmon](#)
- Global GAP certification's [aquaculture standards](#)
- [Aquaculture Welfare Initiative](#) - convened by Schweitzer Foundation to create corporate aquaculture welfare standards. (Retail members: Aldi Nord, Aldi Süd, Aldi International, Edeka Südwest, Kaufland, Lidl, Lidl Stiftung (Int'l), Rewe.)
- Aquaculture Stewardship Council's [Fish Welfare project](#)
- Friend of the Sea, including [aquaculture certification program](#) (for which it is [developing welfare standards](#))
- Friend of the Sea's [fish welfare and aquaculture webinar](#)
- [Atlantic Sapphire](#) - Scaling what will be largest indoor salmon farm in the world. Farm Forward has notes from a 2018 conversation with them; for more information, contact Andrew DeCoriolis: [andrewd@farmforward.com](mailto:andrewd@farmforward.com)

## Fish Welfare Initiative Report

- [Blue North](#) - Fishing company with a "[Humane Harvest](#)" initiative that includes pre-slaughter stunning equipment on a fish boat. Farm Forward has notes from a 2017 conversation with them; for more information, contact Andrew DeCoriolis: [andrewd@farmforward.com](mailto:andrewd@farmforward.com)