



GLUE TRAPS

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CONSIDERED

Research Report:

Animal Welfare – Glue Traps (2020 Considered Idea)

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This is a summary report about banning the sale and use of glue traps for rodent control, a potential intervention for improving animal welfare. Since this intervention does not look promising when comparing expected suffering averted by preventing a glue trap death to expected suffering averted by the co-founders working for or donating to existing high impact animal charities, we do not recommend this intervention.

For questions about the content of this research please contact Vicky Cox at vicky@charityscience.com. For questions about the research process, charity recommendations, and intervention comparisons please contact Karolina Sarek at karolina@charityscience.com.

Charity Entrepreneurship is a research and training program that incubates multiple high-impact charities annually. Our mission is to cause more effective charities to exist in the world by connecting talented individuals with high-impact intervention opportunities. We achieve this through an extensive research process and through our [Incubation Program](#).

Research Process

Before opening the report, we think it important to introduce our **research process**. Knowing the principles of the process helps readers understand how we formed our conclusions and enables greater reasoning transparency. It will also clarify the structure of the report.

Our research process incorporates elements that are well established in some fields but uncommon in others. This is partly because of the unique goals of our research (i.e. finding new areas for impactful charities to be launched) and partly because we incorporate lessons and methodologies from other fields of research, primarily global health and medical science. Below is a quick overview of some of the key elements.

Iterative depth: We research the same ideas in multiple rounds of iterative depth. Our goal is to narrow down our option space from a very large number of ideas (often several hundred at the start) to a more workable number for deeper reports. This means we do a quick **20-minute prioritization**, a longer **2-hour prioritization**, and finally an **80-hour prioritization**. Each level of depth looks at fewer ideas than the previous round.

Systematic: The goal of our research is to compare ideas for a possible charity to found. To keep comparisons between different ideas consistent our methodology is uniform across all the different ideas. This results in reports that consider similar factors and questions in a similar way across different interventions, allowing them to be more easily compared. This is commonly used in other **charity evaluations** and **encouraged in other fields**.

Cluster approach: Comparing different intervention ideas is complex. We are not confident that a single methodology could narrow down the field, in part due to **epistemic modesty**. To increase the robustness of our conclusions, we prefer instead to look at ideas using multiple independent methodologies and see which ideas perform well on a number of them (**more information here**). These methodologies include a **cost-effectiveness analysis**, **expert views**, **informed consideration**, and using a **weighted factor model**. We explain the merits and disadvantages of each method, as well as how we apply it, in the linked documents. Each methodology is commonly used in most fields of research but they are rarely combined into a single conclusion.

Decision relevant: Our research is highly specialized and focused. We only research topics that are directly related to the endline choice of what charity to found. Sometimes cross-cutting research is needed to allow comparison between different ideas, but all our research aims to be directly useful to getting new charities started. This level of focus on target practical outcomes is rare in the research world, but is necessary to our goal of generating more charity ideas with minimal time spent on non-charity idea related concepts.

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Description of the intervention

The intervention explored in this report would ban the sale and use of glue traps for rodents. Glue traps are boards with a sticky surface designed to trap animals. They are considered to be one of the cruelest methods of rodent control. Animals caught on them can experience significant and prolonged suffering before they die, with many rodents found to be still alive after 24 hours as users of the traps fail to kill the animals immediately after they are trapped. In the most extreme cases, animals succumb to blood loss after trying to chew through their own limbs to escape [1]. On top of this, glue traps are indiscriminate killers and may also catch “non-target” animals, such as birds [2].

This intervention would be carried out as follows: during their first year of operation, a new charity would look for an opportunity to launch a governmental campaign in a promising country. We have assumed that an opportunity for a governmental campaign will arise either from legislation relevant to glue traps (e.g. wildlife control legislation) being reviewed, or from a charismatic non-target animal (or at least an animal with more charisma than rats and mice) or companion animal becoming caught in a glue trap, and anger towards the use of glue traps rising among the public as a result. Once a promising opportunity has arisen, the charity would launch a governmental campaign calling for a ban on the sale and use of glue traps for rodents (though exemptions may be allowed by application for those in special circumstances).

Summary conclusion

Ultimately, **we do not recommend banning the sale and use of glue traps as a way to improve welfare.**

Based on our research, this intervention does not look promising when considering counterfactuals due to the small amount of suffering prevented by averting a glue trap death. This is mostly because the alternative methods of pest control that would be most commonly used after a ban on glue traps appear to be rodenticides and snap traps, and death from rodenticides seems worse than from a glue trap. Although when compared to a glue trap death, a snap trap death looks better than a rodenticide death looks worse, the average amount of suffering averted is dragged down by this likelihood of replacement. Based on this and on our analysis of the co-founder **counterfactuals**, we do not recommend this charity get started this year. However, we think that it might be worth trying to convince an existing organization to do this intervention themselves. Based on a conversation with

Valerie Thomas of the Regulatory Institute ASBL, we think that trying to convince an existing Australian organization to do this intervention looks most promising. This is because glue traps have already been banned in three Australian jurisdictions, so when working in Australia we would be able to make the case for the harmonization of legislation at a national level rather than the more difficult case for the humane treatment of rodents.

The table below offers a step-by-step summary of our research process for this intervention and the main takeaways from each stage. Color-coding reflects how well the intervention performed at each stage. The idea sort, idea prioritization, supporting reports, and related reports involve background research prior to this report that will not be considered in the final decision on the promise of this intervention.

Report type	Summary results	Deeper reading
Idea sort report	During the idea sort, this idea showed promise: it was in the top 22 of 395 total ideas, scoring well in all areas.	Full report Process
Idea prioritization report	After two hours of researching a ban on glue traps using the weighted factor model methodology, it was one of our highest priorities for more in-depth research.	Full report Process
Prior view (section 1.)	This 80-hour report begins with a prior view, which summarizes the lead researcher's expectations before starting in-depth research. At this stage, we thought that this intervention showed promise. The main concern was that taking a governmental approach could mean that this intervention would have a low expected probability of success (though we thought that it is more likely to be successful than the average farmed animal legislation).	Process
Informed consideration (section 2.)	Informed consideration occurs at two stages of our research process: the start and the end. Two sections in the report reflect this chronology. At this first stage, we explore what factors are likely to drastically affect the intervention (crucial considerations). We researched: i) countries that have already banned glue traps; ii) the countries with particularly high rodent populations; and iii) whether snap traps are a humane alternative to glue traps. From this, we are happy to promote snap traps as a humane alternative to glue traps, and it seems as if the US could be a promising country for this intervention.	Process

Expert view (section 3.)	After examining crucial considerations, we discussed the intervention with experts including animal advocates and animal welfare science advisers. During these conversations, experts seemed positive about a new charity working in this area as it is currently quite neglected. One concern that arose as a result of these conversations is that previous successes have seemed to be highly situation-related. This could be either good or bad, as this could mean that it is easy to see success when working in this area or it could mean that success will be hard to replicate. We are unsure which possibility is more likely.	Process
Weighted factor model (section 4.)	The next stage of our research involves a weighted factor model. We scored the intervention based on preset criteria and weightings, and generated a causal chain. In this case glue traps scored well, with an overall score of 31/50. The score can be broken down as follows, with the weighting of each criterion in parentheses: 6/10 for the strength of the idea (2), 7/10 for limiting factors (1.5), 6/10 for execution difficulty (1), and 5/10 for externalities (0.5).	Process
Cost-effective ness analysis (section 5.)	In our cost-effectiveness analysis, we quantify welfare in terms of dollar cost. Our findings suggest that a ban on glue traps would affect ~ -33.1 welfare points per dollar (considering co-founder and funding counterfactuals).	Supplement A Process
Informed consideration (section 6.)	The second part of our informed consideration closes the report. This internal contemplation allows researchers to reflect on the data and evidence gathered throughout the process. In this writeup, the lead researcher summarizes key conclusions and offers overall thoughts on banning glue traps as an intervention. We conclude that we do not recommend this charity get started this year, but think that it might be worth trying to convince an existing organization to do this intervention themselves.	Process
Supporting reports	Two supporting reports are relevant for this intervention. Our weighted animal welfare index on wild rats (Supplement B) suggests that wild rodents are likely priority animals due to the expected level of suffering throughout their lifetimes. The “why focus on animals?” report details why we think animal advocacy is a high impact area on which to focus.	Supplement B Why focus on animals?
Related reports	Charity Entrepreneurship’s 2019 report on ethical pest control suggested that this intervention could be promising.	2019 report

1 Prior view

This brief section summarizes our team’s thoughts on this intervention before starting in-depth research.

We think that this intervention shows promise, and we expect it to be in the top third of interventions we are considering.

The main limiting factor for its promise is likely to be the probability of success, as running a governmental campaign is difficult. However, it is important to remember that the pest control industry is unlikely to be as strong an opponent as the farming industry, which could make this intervention easier than expected given that our frame of reference from past research is farmed animal legislation.

At this stage of the research, our subjective likelihood of recommendation is:



This probability estimate assumes that:

- Two animal advocacy ideas (from the 2020 research round) will be recommended at the end of the research process, so being recommended is equivalent to being in the top two ideas.
- With no prior information, each idea is equally likely to be recommended. Because we plan to consider 7 ideas in total, this means the prior probability is $2/7 * 100 = 29\%$.
- Because this intervention looked promising in the previous stage of the research, we have updated the likelihood of recommendation to 75%.
- The 95% confidence interval represents how sure we are that there is a 75% chance this idea will be in the top two ideas. At this stage we had not done very much research in this area, though there are some strong indications that this is a good idea, such as [last year’s research](#) on this intervention.

1.1 Informed consideration

The promise of this intervention will mostly rely on the approach taken. Intuitively, it seems more promising to work at a government level rather than a business level as the number of rodents affected will be greater, but working with governments is

more difficult. We are currently unsure which country would be a priority for this intervention.

1.2 Expert view

This intervention will likely appeal most to those interested in reducing wild animal suffering. It seems like it could be one of the first targeted wild animal suffering interventions carried out by an effective altruist organization. It does not have the drawbacks that many other wild animal suffering interventions have (e.g. whether population reduction is good or bad), especially if we advocate for the replacement of glue traps with snap traps (rather than just banning glue traps) as there is an obvious, guaranteed improvement to animal welfare with less of an outside interest (e.g. commercial) to oppose it.

1.3 Weighted factor model

We expect the execution difficulty to be the main barrier to this intervention scoring well on the weighted factor model. This intervention would likely be most promising if we were to campaign at the government level, and such work is very difficult.

1.4 Cost-effectiveness

This intervention might be uniquely placed to effectively reduce suffering. Although it only affects acute suffering, at the end of an animal's life (rather than chronic suffering throughout), this suffering is particularly horrific. This means it could still stand to avert a significant amount of suffering and be quite cost-effective (likely more so than the average acute suffering intervention).

2 Informed consideration: Crucial considerations

After the prior view, we began the research process by identifying crucial considerations for a ban on glue traps. In this early phase, we:

- identified countries that have already banned glue traps, and countries with legislation that the use of glue traps would violate
- identified the countries and cities of the world with particularly high rodent populations
- considered whether snap traps are a humane alternative to glue traps.

The following subsections summarize our findings on each of these three crucial considerations.

2.1 Which countries have already banned glue traps?

The following countries have bans on glue traps (though some allow limited exemptions):

- Ireland [5]
- New Zealand [6]
- Australia (Australian Capital Territory [7], Tasmania [8], and Victoria [9])

The following countries have animal welfare legislation that would be violated by the use of glue traps, but no specific ban on glue traps:

- Austria [10] [11]
- Germany [12] [13] [14] [15]
- Iceland [12] [16] [17]
- India [18]
- The Netherlands [12] [19] [20] [21]
- Norway [12] [22]
- South Africa [23]

The following countries have legislation limiting the use of glue traps, but that does not prohibit their use:

- Australia (jurisdictions other than Australian Capital Territory, Tasmania and Victoria) has the “Guidelines for the use of Rodent Glueboards” that must be followed by pest control services in the country. If these guidelines are followed, then the number of rodents caught on glue traps will be minimized; any live rodents found on glue traps will be humanely dispatched; the record

keeping requirement will constantly remind pest managers of the animal welfare concerns of using glue traps; trapping of non-target animals is minimized; and pest managers are aware that vegetable oil can be used to release any non-target animals accidentally caught on the glue traps [24].

- The UK has the “Code of Best Practice Humane Use of Rodent Glue Boards” that must be followed by pest control services in the country. They outline principles that must be followed when using glue traps to minimize animal welfare concerns. These include, but are not limited to, that glue traps are used as a last resort, they are only used by a trained and competent user, and the correct size board must be used for the target pest species [25].

2.2 Which countries have particularly high rodent populations?

Google searches along the lines of “cities with highest rat population” yielded as the most common answers various US cities (Chicago, LA, New York, etc.), Paris, and London [26] [27].

In the US, Orkin pest control releases a list of the “Top 50 Rattiest Cities” in the US every year. In 2019, the top 10 cities with the highest rat populations were [28]:

1. Chicago
2. Los Angeles
3. New York
4. Washington DC (Hagerstown)
5. San Francisco-Oakland-San Jose
6. Detroit
7. Cleveland-Akron (Canton)
8. Minneapolis-St. Paul
9. Philadelphia
10. Atlanta

Countries/cities with big waste problems could also be home to many rats as rats mainly consume garbage [29]. The following cities are some of the biggest “trash cities” [30] [31]:

1. Hong Kong, China
2. Mexico City, Mexico
3. Delhi, India
4. Other Chinese cities
5. Manila, Philippines
6. Port-au-Prince, Haiti

7. Jakarta, Indonesia
8. Cairo, Egypt
9. Bangalore, India
10. New York, US
11. Tokyo, Japan
12. Los Angeles, US
13. Mumbai, India

Unfortunately it was difficult to find any information about mice, so we focused on rats here as a proxy for overall rodent populations.

2.3 Are snap traps a humane alternative to glue traps?

Animal protection organizations (such as the RSPCA [32]) advocate for the use of snap traps over live traps and glue traps, and many pest control organizations also recommend using snap traps over glue traps [33] [34].

A study evaluating the humaneness of different methods of pest control found that snap traps are more humane than glue traps. “The best snap traps kill instantaneously, and are thus good from a welfare perspective” whereas “Sticky boards would thus seem to have the same major welfare costs as leghold traps: instant and prolonged distress and trauma, followed by dehydration, hunger and sometimes self-mutilation when animals are held trapped for long periods” [35]. In fact, in this study snap traps are listed as one of five humane methods of pest control, whereas glue traps are “often or always inhumane, either acting in a few hours but with very severe effects, killing in around a day with less acute effects, or causing lower levels of pain and distress but taking several days to induce unconsciousness.”

Another study on the ethics of rodent control states that “Consumers should be advised that snap traps and electrocution traps do not usually require animals first to be captured and held (for potentially long periods of time), and thus produce a more acceptable level of pain or distress”, whereas “Glueboards and other restraining traps are considered inhumane because it takes longer than a few hours and sometimes days before the trapped animals die” [36].

3 Expert view

This section summarizes conversations between the lead researcher and a range of experts, including advocates and animal welfare science advisers.

Overall, experts were positive about more work being done in this area as it is currently quite neglected. However, talking with these experts made us concerned about the probability of success of a governmental campaign, and also made us reconsider whether a governmental campaign was the best approach for this intervention.

All of the previous successes in this area seem very circumstantial and dependent on timing. Some successes have come from animal advocacy organizations making a submission against glue traps at a time when the government is already reconsidering their wildlife legislation, under which the use of glue traps falls, or reconsidering the use of glue traps directly. Other successful campaigns have been launched off the back of public outrage over glue traps. For example, the campaign in Scotland was launched after a blackbird became trapped in a glue trap, reaching national news. These situational successes can be taken in one of two ways. Either we can expect success to be quite hard to replicate, as there is no guarantee that similar situations will arise; or to be quite easy, as previous successes have been quite simple to achieve.

Stephen Ronan

Profile: Stephen is a member of World Animal Net's Board of Directors and, also on a volunteer basis, operates the web sites banglueboards.org and humanepestcontrol.com. He was contacted to learn more about campaigns against glue traps that he has assisted with, and to get his opinion on potentially promising countries to work in and approaches to take when campaigning as he has a quite broad knowledge of this area.

Summary: World Animal Net's work is very small scale. They only work in Massachusetts, so a lot of work remains to be done in the US. Stephen thought that when choosing a country to work in, it would be useful to assess the degree to which glue traps are currently used in various countries contrary to existing law and work with governments to stop this. However, Stephen recommended not being tightly constrained to one particular country. He was open to the use of many different approaches, but thought that asking the US government for a national ban seems premature and that continuing campaigns against retailers seems like a pretty good

idea. However, he noted that since there are so many options for prospective buyers, including via online purchases, it would be tough to make an impact on total purchases this way.

More information can be found in the [conversation summary](#).

Marianne Macdonald

Profile: Marianne works for SAFE For Animals. She was contacted to learn more about how glue traps have been successfully banned in New Zealand.

Summary: For the glue trap ban in New Zealand, there was never a formal campaign launched by animal advocacy groups. Instead, animal advocacy groups, including SAFE For Animals, made a submission against them when the National Animal Welfare Advisory Committee (NAWAC) was looking at these traps many years ago. NAWAC recommended banning glue traps, but it took almost a decade for the Government to act on their advice.

More information can be found in the [conversation summary](#).

An anonymous animal advocate from the RSPCA

Profile: The RSPCA was contacted to learn more about their campaign work against the sale and use of glue traps. We were particularly interested in their work with Amazon to prevent the sale of rodent glue traps on Amazon UK. Preventing the online sale of these traps could be a promising component of any work done in this area, as even if the sale of glue traps were banned in a country, people can still find them widely available online.

Summary: The RSPCA has found success in its business-level approach whereby they ask members of the public to inform them if they see glue traps on sale to the public. The RSPCA will then write to the retailer and ask them to stop selling glue traps, remove all glue traps from their stock, and avoid restocking them in the future to prevent the problem from happening again. The RSPCA's work with Amazon seems like a special case that is unlikely to be as easy to replicate in countries outside of the UK, as Amazon UK had a preexisting policy against the sale of glue traps.

More information can be found in the [conversation summary](#).

Andrea Goddard

Profile: Andrea works for Mad for Wildlife (formerly 'Let's Get MAD for Wildlife'), who is currently campaigning for the Scottish government to ban the sale and use of glue traps. She was contacted to learn more about Mad for Wildlife's work, and why they decided upon the governmental approach over working at the business level, e.g. asking retailers to stop selling glue traps.

Summary: Mad for Wildlife's campaign launched in 2017 after national condemnation following an incident in which a blackbird became trapped on a glue trap. They launched a Scottish Parliament petition to ban the sale and use of glue traps in Scotland. Mad for Wildlife decided that the government-level approach seemed promising as the Scottish Parliament has a very democratic system of considering official petitions, and because they felt that in order to remove glue traps from all stores, only a ban would suffice. When lobbying against glue traps, Andrea recommends to keep it simple and lobby for a total ban (rather than lobbying for the replacement of glue traps with snap traps, for example). Andrea also suggested that having real-life examples of how indiscriminate and inhumane glue traps can be, suggesting alternative means of rodent control (though without making the ban conditional on these alternative methods), and showing how other countries have approached a ban, could all be useful when campaigning.

More information can be found in the [conversation summary](#).

Dr. Tamara Diesch

Profile: Tamara is an animal welfare science adviser for the Ministry of Primary Industries. This is the government body that supervised the ban on glue traps in New Zealand and offers ministerial approval for the sale and use of glue traps in limited circumstances after the ban. She was contacted to learn more about what pest control is like in New Zealand after the ban on glue traps, ie. what method of pest control is being used as an alternative, and how common ministerial approval has been since the ban.

Summary: There have been a total of sixty-four ministerial approvals for the sale and use of glue traps since the ban in 2015. Fifty of these approvals have been for the use rather than the sale of glue traps. The alternative method of pest control that is most commonly used after the ban on glue traps is Integrated Pest Management, where snap traps and baiting (where possible) are likely used widely.

More information can be found in the [conversation summary](#).

Nicole Fenwick

Profile: Nicole works for the [BC SPCA](#). She was contacted to learn more about BC SPCA's AnimalKind Accreditation program, which accredits pest control companies that follow their standards. One component of these standards is that glue traps are prohibited unless used as per program exemptions. We were interested to learn more about the accreditation approach, as it could be a novel approach to replicate.

Summary: It could be difficult for a new charity to run a successful accreditation program. BC SPCA has likely only seen success due to brand name recognition, and because is positioned to be an authority on animal welfare. Accreditation works because companies want the affiliation with BC SPCA. This would not be the case for a new charity or would take a long time to build up this status. However, this new charity could try to persuade organizations comparable to the BC SPCA to develop a corresponding program instead of starting one themselves.

More information can be found in the [conversation summary](#).

Jacqueline Sansonetti

Profile: Jacqueline works for Animals Australia. She was contacted to learn more about Animals Australia's work against the sale and use of glue traps, which has resulted in glue trap bans in Australian Capital Territory, Tasmania, and Victoria.

Summary: Animals Australia's work involved lobbying governments and advisory committees when they were reviewing animal welfare legislation. The Australian Parliament frequently includes a clause in many Acts requiring a review after five years or at regular intervals.

More information can be found in the [conversation summary](#).

Valerie Thomas

Profile: Valerie manages and represents the Regulatory Institute, coordinates freelancers, writes articles at www.howtoregulate.org, and comments on draft regulations. She is the Executive Secretary of the Regulatory Institute ASBL in Brussels.

Summary: There may be value in a federal approach in Australia that would seek to harmonize legislation in the jurisdictions that have not yet banned glue traps like ACT, Victoria, and Tasmania. This would save individual approaches to the

remaining 5 jurisdictions (WA, NT, SA, QLD & NSW) that have not banned glue traps. Although animal welfare regulation is not a federal power, there is a federal commitment to lead on legislative harmony projects, particularly in non-controversial topics.

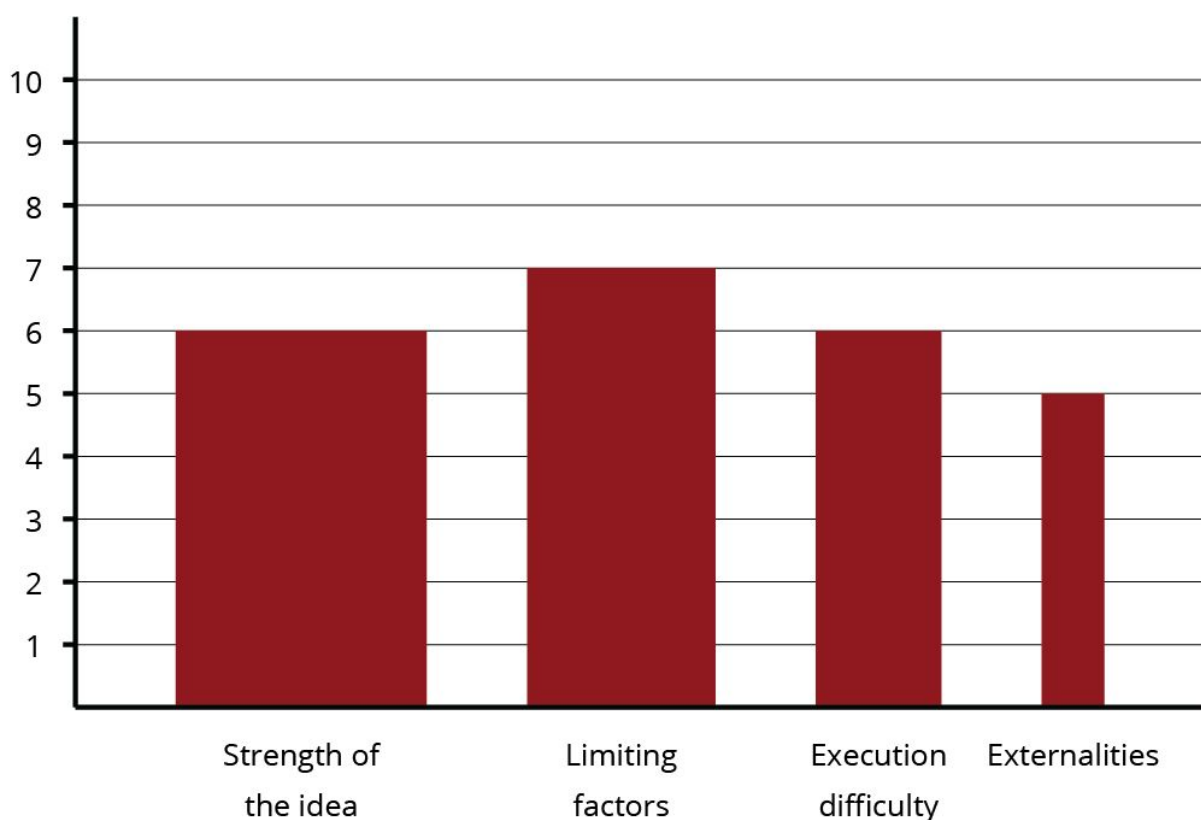
More information can be found in the [conversation summary](#).

4 Weighted factor model

In this stage of research, we scored this intervention based on preset criteria and weightings. We also generated a causal chain.

Overall, the weighted factor model suggests that a ban on glue traps is likely to be promising, placing it in the top quarter of interventions considered.

The graphic below shows the intervention's score out of ten on each criterion. Width of the bars reflects the weight accorded the criterion within the overall score of 31/50:



4.1 Strength of the idea

Score: 6/10

The evidence base for this intervention was higher in quality than expected. A total of four literature reviews were found which considered the efficacy and humaneness of glue traps and, in some cases, other methods of pest control. To evaluate the humaneness of pest control, these literature reviews used various proxies: time

until unconsciousness/death; physical observation of the rodents when caught on glue traps (e.g. what parts of their body are caught); the percentage alive after 24 hours; and behavioral observation of the rodents when caught on glue traps (e.g. vocalization, escape behavior etc.). When looking at these proxies, it is almost unanimous that glue traps are one of the most inhumane methods of pest control.

This intervention is expected to be quite cost-effective. However, this estimate is quite sensitive and based on a number of assumptions. This makes us less excited about this intervention as a whole, as we remain quite uncertain about the estimates of suffering averted per dollar spent on this intervention. For this reason, we cap the score for this factor at 6. The two main assumptions we have had to make for this intervention concern: 1) the opportunity for a governmental campaign presenting itself, and 2) the counterfactual impact of this intervention. We have modeled this intervention as having ten years of counterfactual impact. It is difficult to get a sense of whether this is realistic or not, as it is difficult from an outside perspective to determine the plans and trajectory of future work of animal advocacy organizations. However, it seems unlikely that any work in this area is going to be started anytime soon. Nothing has been done in this area aside from asking retailers to stop selling glue traps, in the time since New Zealand passed legislation banning glue traps in 2015.

4.2 Limiting factors

Score: 7/10

In-depth research revealed no significant updates, so our thoughts here are similar to after the [two-hour weighted factor model research](#). In brief, the limiting factor seems most likely to be funding or talent. Identifying two co-founders interested in starting the project would probably be the immediate bottleneck. A longer-term bottleneck will be acquiring large donations from funders. The size of the problem and replaceability are unlikely to be a concern in the long or short term.

4.3 Execution difficulty

Score: 6/10

Although this intervention involves a governmental campaign, we expect this governmental campaign to be easier than the average campaign for farmed animal issues. This opinion is mostly informed by the high success rate (~62.5% [37]) of previous campaigns against glue traps. Moreover, for those previous campaigns

that were not successful, there were mostly understandable reasons for this. For example, the campaign in the European Parliament against the use of glue traps across Europe was unsuccessful as it was poorly prepared and submitted by MEPs from the extreme right without the necessary political support (read more about this [here](#)). We expect that some part of this high success rate is because glue traps are a non-partisan issue and because opposition by a powerful industry against the campaign is unlikely. There does not seem to be a sector analogous to the “big meat” and farming industries, which affect the probabilities of success of farmed animal welfare campaigns.

Despite this expected high probability of success, we have capped the score for this factor at a 6 as we expect it to be difficult to advocate for a direct replacement for glue traps in legislation. Advocating for the use of snap traps or electrocution traps as an alternative to glue traps would be ideal as we expect these methods of pest control to be the most humane. However, this seems unlikely to be possible.

4.4 Externalities

Score: 5/10

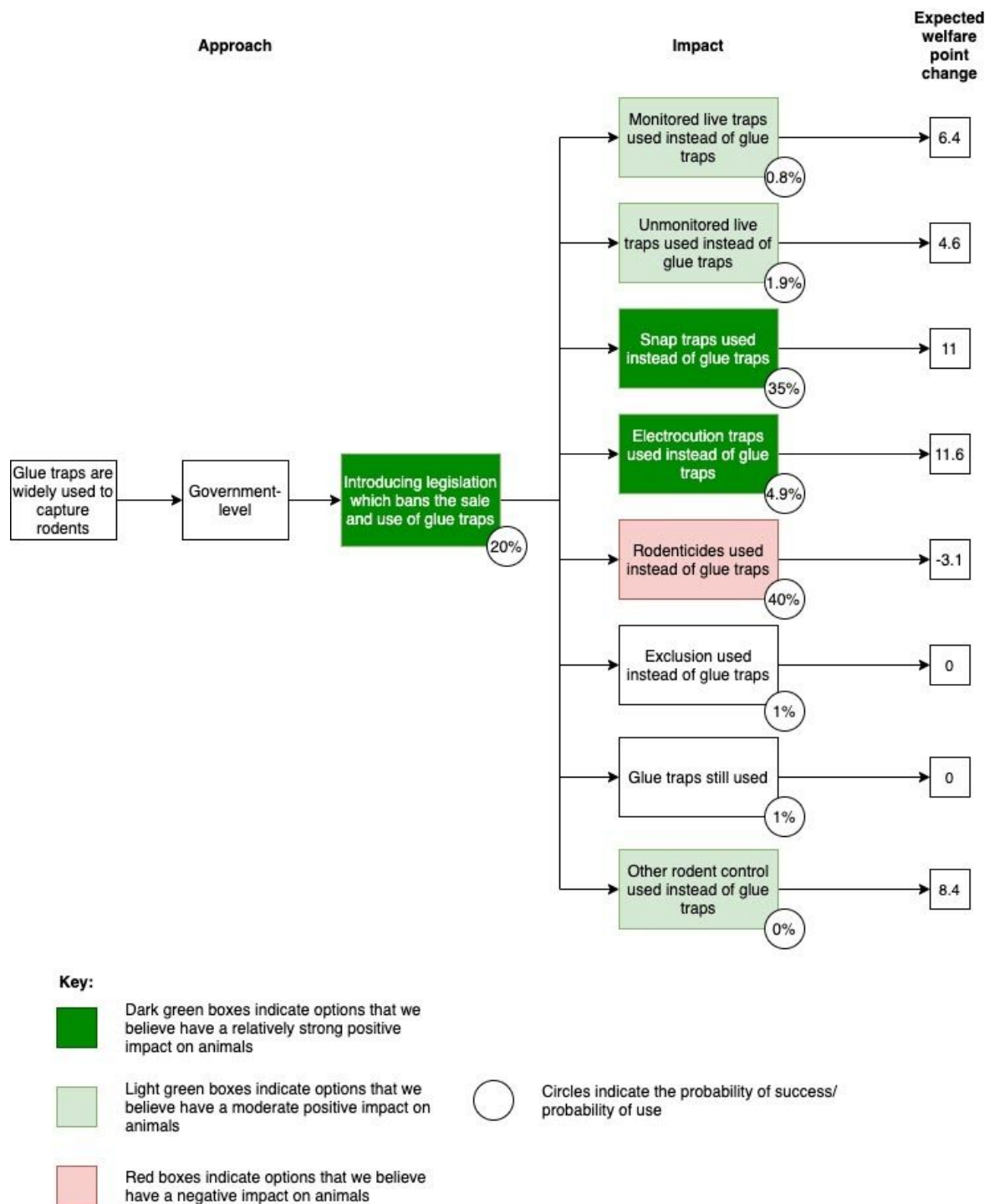
Mostly, pest control is disconnected from the larger animal movement, with minimal inspiration or flow-through effects to other animals.

The main positive externality we expect to see from this intervention is that it could help to promote values around improving wild animal welfare as this intervention would be the first targeted wild animal suffering (WAS) intervention carried out by an effective altruist organization. Moreover, given the relative neglectedness of this field, there might be some benefits to establishing the field strategically, instead of allowing it to be passively created as a domain within animal issues.

The main negative externality we expect to see from this intervention is the potential lost welfare that could result from a less humane method of pest control being used as an alternative to glue traps. It will likely be difficult to include the condition that these more humane traps must be used as an alternative to glue traps in legislation banning glue traps, instead this legislation will likely just state that glue traps are a prohibited method of pest control. Fortunately, the method of pest control that seems worse for welfare than glue traps, anticoagulants, already has quite a limited use as, for example, you cannot use rodenticides around food and their use is banned in some places (e.g. in California, the use of second-generation anticoagulants is restricted in “environmentally sensitive” areas such as state and

national parks in response to decreasing populations of animals such as bobcats who were impacted by secondary poisoning [38] [39]). Also, as Integrated Pest Management is becoming increasingly more common, even if these rodenticides were used, they are unlikely to be the only method of pest control used, which will reduce the number of rodents killed by this method in expectation.

4.5 Causal chain



5 Cost-effectiveness analysis (CEA)

This section summarizes our CEA, which weighs the likely cost of this intervention against the likely good accomplished. To quantify impact for animal welfare interventions, we use a system of **welfare points** (adjusted for probability of sentience and expected lifespan). Our cost-effectiveness analyses quantify the number of such welfare points we expect to affect per dollar spent. Detailed discussion of the CEA is laid out in [Supplement A](#).

5.1 Overview

A ban on glue traps may affect a total of -33.1 welfare points (WP) per dollar spent when including co-founder and funding counterfactuals.

Model		Welfare points affected (WP per \$)
Google Sheets	With counterfactuals	-33.1
	Without counterfactuals	90.3

We took into account the following factors in our CEA:

- Probability of success
- Affecting factors
- Direct effects
- Indirect effects
- Costs
- Counterfactuals
- Years operating
- Where our CEA could go wrong

Our considerations for these issues are laid out in the sections below. Further discussion can be found in [Supplement A](#).

5.2 Probability of success

We have modeled the probability of success as 20%. Our prior on the probability of success of an average governmental campaign is lower than this, but our view was updated after modeling the success rate of previous glue trap campaigns. Looking at eight previous campaigns, we can see a success rate of ~62.5% [37]. We decided not to take this success rate at face value as it is unlikely that these campaigns have

been the only glue trap campaigns ever run, and we are much more likely to have found evidence of successful campaigns than of unsuccessful campaigns so the success rate of previous campaigns is likely lower in expectation. However, the fact that five out of eight of the campaigns we have found have been successful is a positive update towards the success of this campaign, hence our updated priors.

5.3 Affecting factors

Affecting factors are the variables that could change cost-effectiveness the most. The table below shows the impact of affecting factors in each scenario.

The r^2 value used here for each factor shows how much of the variance in cost-effectiveness is explained by variance in that factor. Factors are color-coded to reflect the extent to which they alter cost-effectiveness, from red (does not change cost-effectiveness) to green (significantly changes cost-effectiveness). That is, using an example from the table below, if the co-founder counterfactual cost is changed, this will change the cost-effectiveness of the intervention by a significant amount.

	Co-founder counterfactual cost (r^2)	Time taken until legislation comes into force (r^2)	Estimated number of mice saved annually from glue trap ban (r^2)
Glue trap ban	0.71	0.26	0.10

5.4 Direct effects

To calculate the direct effects of banning glue traps, we took into account:

- Welfare point gain from death from an alternative method of pest control
- Expected number of years from the start of the governmental campaign until legislation comes into force
- Estimated number of rodents spared from painful death annually from glue trap ban
- Expected number of exemptions granted for glue trap use after glue trap ban
- Number of rodents killed from exemptions
- Expected number of years of counterfactual impact from glue trap ban
- Time discounting of 4% as these effects will be in the future as this is a policy intervention

Putting these all together, we estimate that we could affect **50 million welfare points**. This makes up 58% of the total welfare points affected.

5.5 Indirect effects

To calculate the indirect effects of a glue trap ban, we focused on the welfare point effect on non-target animals who often get caught in glue traps laid for rodents and the potential increase in the probability of success of future governmental campaigns for a ban on glue traps if this ban is successful. We took into account:

- Probability of success of governmental campaign without success in California
- Probability of success of the governmental campaign with success in California
- Estimated number of animals affected by a future glue trap ban
- Number of non-target animals caught on glue traps per year
- Welfare point gain from non-target animals no longer being caught in traps laid for rodents
- Time discounting of 4% as these effects will be in the future as this is a policy intervention

Putting these all together, we estimate that these indirect effects could affect **14 million welfare points**. This makes up 42% of the total welfare points affected.

5.6 Costs

We calculated:

- Staff costs: \$240K
 - Based on: number of founders; founders' salaries; number of other staff; other staff's salaries.
- Logistics & administration costs: \$31K
 - Based on: travel (international & domestic); office space; subscription costs; and campaign support materials.

Using these numbers, we estimate the following costs:

- First year costs: \$95K
 - Based on: co-founder salaries; international and in-country travel; office costs; and subscription costs.
- Charity costs per year: \$270K
 - Based on: staff costs and logistics and administration costs.

5.7 Counterfactual costs

We calculated:

- Co-founder counterfactuals: 49M WP
 - Based on the value co-founders could contribute at other high-impact organizations or through earning to give.
- Funding counterfactuals: 330K WP
 - Based on: amount of funding diverted per year from high- and medium-impact charities; estimated impact of high- and medium-impact charities.

5.8 Years operating

We have assumed that this charity will operate for ~4 years. Of these 4 years, the first will be spent looking for an opportunity to launch a campaign against glue traps and 3 years will be spent working on securing this campaign.

5.9 Where our CEA could go wrong

We considered how our CEA could go wrong in each step. Some general potential issues include:

- Best guesses and value judgments: certain figures are estimates by Charity Entrepreneurship staff. Another person could look at the same evidence and come to a different conclusion.
- Incomplete knowledge: there is no information available for the number of mice and rats in a given country, and there is no information available for the number of mice and rats that get caught on glue traps per year. Therefore, these have had to be calculated and estimated based on the information that is available and on our informed judgment.
- Other factors: with an 80-hour summary report, it is impossible to exhaust every angle. There are likely factors that may affect the CEA in ways we cannot predict. Equally, factors inherent to our modeling may influence the results of the CEA.

6 Informed consideration: Internal contemplation

In this stage, we analyzed all the data and insights gathered through previous steps in the research process. The most important conclusions from each are summarized here, as are our overall thoughts on banning glue traps as an intervention.

6.1 Crucial considerations

Summary: There were no major updates at this stage of the research process other than confirming that glue traps are one of the most inhumane methods of rodent control, and snap traps are a humane alternative.

The main benefit of crucial considerations research was to confirm that we would be happy to advocate for snap traps as a humane alternative to glue traps. Other than this there were no major updates during this research phase. We were surprised by how many countries had animal cruelty legislation that would be violated by the use of glue traps, and yet no specific ban on glue traps.

6.2 Expert opinions

Summary: The main update from this stage of the research process was that a governmental approach appears to be most promising for this intervention. We expect the opportunity for a governmental campaign to arise in one of two ways: 1) a review of legislation relevant to glue traps (e.g. wildlife control legislation), or 2) an incident involving a charismatic non-target animal (or at least an animal with more charisma than rats and mice) or companion animal becoming caught in a glue trap and subsequent public outcry.

The expert view was used a little differently for this intervention than it has been for other interventions. For this intervention we asked experts directly what approach they thought would work best and spoke to experts who have worked on banning glue traps from different approaches to try and determine the optimal approach based on past experiences. We felt that this strategy was necessary for this intervention as from the crucial considerations research and initial weighted factor model research we were still unsure what approach would work best. This is unusual as we usually use the expert view to get an opinion on an intervention as a whole (with an approach already in mind).

Based on the expert view, we thought that the governmental approach seemed most promising. The number of animals previously helped from this approach was found to be much higher than the number of animals previously helped from any other approach we were considering. However, based on conversations with advocates who had previously used the governmental approach we were unsure how successful this approach would be in practice. Previous successes in Australia and New Zealand were successful in a big part because the government was already reviewing relevant legislation. This meant that animal advocacy organizations could make a submission asking for the government to ban glue traps in the updated legislation, rather than having to propose a change in legislation themselves. The ongoing campaign in Scotland which looks to be successful was launched as a result of public outrage after a blackbird got caught in a glue trap. As these previous successes were very situational, we were unsure whether a new charity would be able to replicate these successes. However, we were more strongly convinced that these accounts just provide evidence that banning glue traps seems like a relatively simple ask.

One approach that we were considering that we were unable to properly assess was a ballot initiative. Since many cities in the US were commonly cited in studies and articles evaluating large wild rodent populations, we thought that a ballot initiative in one of the states whose cities were most often mentioned could be promising. We were unable to get in touch with HSUS, the Fund for Animals, or the Humane Society Legislative Fund (as the biggest donors to previous animal welfare ballot initiatives in the US) to get their opinion on how promising a ballot initiative on this intervention could be. However, of the experts we did talk to about this they thought that the resources were not likely to be available for this approach to be successful in the next several years, though they did think that launching a ballot initiative could be good for raising awareness on the issue of glue traps. We were also concerned about what ballot initiative might be displaced if a ballot initiative asking for a ban on the sale and use of glue traps were launched. Although it was unfortunate that we could not explore this possibility further, we think it would have been unlikely to be the approach selected for this intervention anyway.

6.3 Weighted factor model

Summary: The main update from this stage of the research process was how much evidence there was for this intervention.

We were surprised to find four literature reviews considering the humaneness of glue traps and other methods of pest control, however the findings of the studies cited in these literature reviews were not surprising.

The main update from the directed research at this stage came from learning how ineffective glue traps seem to be at actually trapping rodents. This slightly negatively updated us on the promise of this intervention as the sales figures we had found for glue traps would have to be discounted by this unexpectedly low efficacy.

6.4 Cost-effectiveness analysis

Summary: Modeling the cost-effectiveness of this intervention was difficult. This model updated us negatively on the promise of this intervention as it does not look promising given co-founder counterfactuals.

This is the most difficult intervention we have had to create a cost-effectiveness estimate for so far. This is mostly due to incomplete knowledge. There is no available data on the number of wild rodents in a given country, let alone the number of rodents that are caught on glue traps. Because of this we had to use the information that was available to try and estimate the number of animals that this intervention would affect, so this estimate could be far from the actual number of animals that will be affected. As the third most significant affecting factor (the number of mice saved annually from glue trap ban, $r^2=0.10$) is rooted in calculations such as this, the cost-effectiveness could change quite a bit if these estimates are far off.

This cost-effectiveness analysis is the one we are most uncertain about so far due to the incomplete knowledge mentioned above, and because two assumptions have been made. These assumptions are: 1) that an opportunity for a governmental campaign against glue traps will arise, and 2) the length of the counterfactual impact of this intervention. If these assumptions turn out to be far from the truth then the cost-effectiveness of this intervention will be greatly changed.

6.5 Overall thoughts

This intervention does not look promising for a new charity to work on given co-founder counterfactuals. Given this consideration, it would still look promising to spend some time trying to convince an existing organization to do this intervention.

Based on a conversation with [Valerie Thomas](#), we updated towards spending time trying to convince an Australian animal or wildlife organization to run this intervention. Australia looks like a particularly promising country for this intervention as glue traps have already been banned in three jurisdictions, so when working here we would be able to make the case for the harmonization of legislation at a national level rather than making the case for the humane treatment of rodents. We might also be able to convince the organizations that have already worked on previous successful glue trap ban campaigns in ACT, Victoria, or Tasmania (e.g. Animals Australia) to try and get glue traps banned at the national level, which might also increase the probability of success of this intervention.

This intervention would affect more welfare points on average if we could ensure that rodenticides will not be used as an alternative to glue traps. Therefore looking into banning rodenticides (or at least banning the most inhumane rodenticides) alongside banning glue traps would make this intervention look even more promising.

If one thinks that wild rats' lives are net-negative and it is ethically good to shorten their lives, then glue traps being replaced by snap traps might actually look a lot more promising than is currently modeled* as snap traps are a more effective method of rodent control than glue traps. Therefore, more rats will be spared from living net-negative lives if snap traps are used as a replacement for glue traps. Based on our weighted animal welfare index model of a wild rat ([Supplement B](#)), sparing a life would affect ~28 welfare points. It is important to note that the size of these effects will depend on the population mechanisms of wild rats, that is, if there will be more rats born for every rat that will be killed. So if there is a replacement in the population, then the judgment here becomes how bad the death is vs how bad life is.

** Note: We have not included the welfare point gain from sparing rat lives in the final CEA as some philosophical views hold that we cannot compare existence with non-existence.*

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