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re: NSW Animal Welfare Reform Discussion Paper

5 September 2021

To whom it may concern,

Please find below some information relating to a request by the NSW Government for feedback on its NSW Animal Welfare Reform Discussion Paper. My 30 years experience working in the field of aquatic animal health and welfare dictates that the issues discussed below relate only to the proposed treatment of aquatic animals (fishes, crustaceans and molluscs) under the proposed new Animal Welfare Act. In particular, it is noted that the NSW Governments proposes to include not only finfish (presumably both teleosts AND elasmobranchs (aka. sharks and rays)), but also some invertebrates including decapod crustaceans (e.g. crabs, lobsters) and cephalopods (e.g. octopuses, squids) under the new Act at all times (see Proposal 3, Update the definition of an animal).

The words "at all times" suggests the intent of Proposal 3 is to have the new Act govern the interactions people have with fish, crustaceans and molluscs not only in captivity, but in the wild, which means the proposed new Act will specifically regulate fishing. As identified by the Recreational Fishing Alliance of NSW (2021), the proposed wording would undoubtedly lead to "unintended consequences" to recreational and commercial fishing, particularly under Proposals 4 (Introduce a minimum care requirement) and 5 (Update the definition of cruelty), unless the new laws specifically exempt a range of lawful activities undertaken by persons operating in commercial and recreational fisheries in NSW waters (Proposal 8). There are a number of very valid scientific and philosophical reasons why fishing activities should be specifically excluded under Proposal 8, for the reasons outlined in this submission.

Five Freedoms cannot be applied to aquatic animals in their natural ecosystems

Firstly, the discussion paper states that its contents, and the overall objectives of the review, have been "*developed to be consistent with the Five Freedoms and Five Domains models of animal welfare, and to reflect best practice in constructing modern legislation*". However, through its attempt to encompass fish, crustaceans and molluscs "at all times" (including in the wild), the NSW Government appears not to understand that the "Five Freedoms" approach to welfare is a philosophical construct that is inappropriate for application to wild aquatic animals, as the five freedoms are rarely, if ever, experienced by wild aquatic animals in natural food chains (Diggles et al. 2011). This is due to natural ecological processes such as predation, which is necessary if a predator is to fulfil its requirement for freedom from hunger, but in doing so this must contradict the requirement of the prey species (whether they be fish, crustaceans or molluscs) to fulfil the other 4 freedoms such as absence of discomfort, injury, fear, distress and so on (Diggles et al. 2011). The underlying issue arises from the fact that the "Five Freedoms" concept was originally developed for terrestrial animals farmed in captivity, where it is assumed that when the welfare needs of individuals in a population are met, then welfare of the population as a whole can be considered to be good. However, this fundamental assumption is invalid in a food chain consisting of wild animals, due to their need to eat each other in order for them not to go hungry and for the ecosystem to function. Hence, when the Five Freedoms concept originally devised for farmed terrestrial animals is blindly applied in the context of wild aquatic animals in their natural environment, it becomes quickly apparent that it is inappropriate and would result in significant ecosystem dysfunction (Fox 2006, Diggles

et al. 2011). This is because the five freedoms philosophy disrupts critical processes such as predation and natural selection, and it ultimately leads to absurd conclusions such as a need to "humanely kill all predators" or "genetically modify them so that their offspring gradually evolve into herbivores" (Fox 2006, Bramble 2020). Unfortunately this is not a joke, as warned by Fox (2006) and realised by Bramble (2020).

Clearly, conventional feelings based welfare concepts such as the "Five Freedoms" developed for domesticated animals are fundamentally and fatally flawed when applied to environmentally critical natural processes such as predation and natural selection that underpin the basic function and integrity of natural aquatic ecosystems. In effect, the five freedoms approach recognizes all of the individual animals as dots, but is unable to join the dots together into a coherent ecosystem (Fox 2006). Instead, if wild fisheries are to be encompassed under welfare legislation, more pragmatic functional and "nature based" approaches to fish welfare are required (Diggles et al., 2011), as these can be accommodated within a more holistic (and realistic) general ethical theory relating to human interactions with the environment in order to maintain human activities within a functioning ecosystem (Fox 2006, Diggles et al. 2011).

Pain in fishes, relevance to angling and inclusion of elasmobranchs under the definition of fishes

The rationale behind Proposal 8 to specifically exempt a range of lawful activities undertaken by persons operating in commercial and recreational fisheries in NSW waters is sound, and is supported by science. Contrary to recent claims in the media about "scientific consensus" on the issue of pain in fishes, the issue remains scientifically highly controversial because of severe technical flaws in the "pro fish pain" science and the publication of several studies that contradict the thesis that fish feel pain (Rose et al. 2014, Eckroth et al. 2014, Key 2015, Key et al. 2017, Browman et al. 2019, Hlina et al. 2021). Indeed, these claims for "consensus" are actually based on a random assemblage of unreviewed letters submitted to a publication called "*Animal Sentience*", a forum which was established by animal rights interests to publish opinion pieces on animal rights matters, which is hardly a balanced and informed forum for determining "scientific consensus" (Diggles 2016, Diggles 2021). The facts are: claims that are now widespread on the internet and in various publications that "fish pain" experiments with acetic acid or venom (e.g. Sneddon 2003) are somehow relevant to angling are simply not supported by the available data. This is because angling with hook and line is clearly not like injection of an acid or venom, as it is instead equivalent to the controls used in those experiments (injection with saline) (Diggles 2016), and in all cases control fish did not show signs of "pain". This is absolutely consistent with other studies that show species such as Atlantic cod do not find hooking painful "*possibly reflecting a resiliency to tissue damage in the mouth area related to the tough nature of the Atlantic cod diet*" (Eckroth et al. 2014), and studies of bluegill that found that hooking injury did not result in any significant behavioural differences (Hlina et al. 2021).

A good example of the weakness of the "fish are sentient and feel pain" literature is a study by a "pro fish pain" research group that made headlines worldwide back in 2015 when they claimed that zebrafish could experience stress induced hyperthermia or "emotional fever" (Rey et al. 2015). Several inconsistencies and erroneous conclusions in the Rey et al. (2015) study were pointed out at the time (Key et al. 2017), bringing the study into serious question, but this did not stop various interest groups proclaiming the study as "evidence of fish sentience". A few years later the doubts were confirmed when other researchers independently repeated the study and failed to replicate the results of Rey et al., confirming there was "*no experimental evidence of stress-induced hyperthermia in zebrafish*" (Jones et al. 2019). This inconsistency and failure to replicate is common in the "fish feel pain" literature, which displays many hallmarks of hyperbole and publication bias on behalf of its operatives (Rose et al. 2014, Browman et al. 2019, Diggles 2021).

Finally, it should be noted that it is common for regulatory authorities to lump elasmobranchs (sharks and rays) together with bony fishes (Teleosts) in welfare regulation. While convenient, this has questionable scientific basis, as elasmobranchs are relatively primitive ancestral fishes, separated from the bony fishes

by millions of years of evolution. Furthermore, there is little evidence that sharks and rays even possess the appropriate C-type nociceptors for trauma detection, let alone have the cognitive ability and brain power to experience emotions like pain (Snow et al. 1993, Smith and Lewin 2009, Rose et al. 2014).

Proposed inclusion of decapod crustaceans and cephalopods under the Act

In relation to the proposal to include some decapod crustaceans and some molluscs (cephalopods) as animals under the revised Act, I consider that the NSW Government should be made aware of some recent (and in the case of sharks and rays, not so recent) happenings in the scientific field related to how the welfare of these aquatic animal groups is being defined and measured. I do understand that today there is increasing community awareness of issues related to how people use and treat aquatic animals. Consequently, there is increased scrutiny over a range of historically accepted scientific, fishing and aquaculture practices undertaken on finfish, and more recently invertebrates such as crustaceans and cephalopods (Diggles 2019, Browman et al. 2019).

Nevertheless, the inclusion or proposed inclusion of decapod crustaceans and cephalopods under animal welfare Acts in QLD, NT, NSW and other jurisdictions is notable as there is significant scientific uncertainty regarding whether not only teleost finfish (see above), but also crustaceans and cephalopods can experience pain, distress or the emotions which may be experienced in more evolutionarily advanced taxa such as birds and mammals (Rose et. al. 2014, Key 2015, Diggles 2019, Browman et al. 2019). Furthermore, sharks and rays do not possess the C-type nociceptors (trauma receptors) from which the signals from damaged body parts to the brain originate (Snow et al. 1993, Smith and Lewin 2009). Because of this, sharks and rays appear to lack the neural apparatus essential for the sensation of pain, hence it appears impossible that sharks and rays can experience the emotions of pain or suffering (Snow et al. 1993, Rose et al. 2014). For these reasons, some of the definitions under these Acts may not be legally defensible, particularly when relating to treatment of sharks and rays where the neural apparatus essential for the sensation of pain are absent. This is why many scientists (e.g. Diggles et al. 2011, Rose et al. 2014, Browman et al. 2019) recommend a pragmatic approach to aquatic animal welfare that embraces functional and nature based welfare definitions for aquatic animals, rather than the poorly defined and scientifically questionable suffering-centred welfare definitions required under these Acts.

Crustacean case study. The NSW Government may be aware that in the past year or two there has been a very long and concerted public animal rights campaign to include crustaceans under welfare legislation in Europe. This has been driven mainly by the group "Crustacean Compassion" funded by a grant from Open Philanthrophy in order to "Advance UK welfare reforms for crustaceans" (Figure 1). Due to the publicity drive to change the welfare legislation in the UK (and also the EU), there has been a flood of very biased reviews of the scientific literature on crustacean welfare which have been recently published. However, the NSW Government needs to know that in order for these reviews to be published, the normal scientific peer review process has been corrupted. The first hand experience of myself and my colleagues overseas have found at least some of these reviews are being rejected in peer review, but the papers are still being published anyway by open access "pay to publish" (i.e. predatory) journals. For example, the recently released review by Conti et al. (2021) on *Humane Slaughter of Edible Decapod Crustaceans* was published in *Animals*, but only after being rejected multiple times for technical inadequacy by at least 2 reviewers (See Appendices 1, 2). We later found out that the guest editor invited by *Animals* to handle the review process was actually a member of the animal rights group Voiceless (Appendix 1). This is similar to the recent emergence of "journals" such as "*Animal Sentience*" which have been funded by animal rights groups as a way for them to get "scientific opinion" on animal welfare subjects published without proper objective peer review. In other words, these publications seem to be a "means to an end" which sidestep normal scientific processes as part of a political/ animal rights activism process which includes, amongst other things, getting "marginal" animal groups such as crustaceans considered under welfare legislation. https://www.bva.co.uk/news-and-blog/blog-article/grasping-the-moment-recognising-decapod-crustacean-sentience-in-2021/

Figure 1. Animal rights group Crustacean Compassion recently received around $786,000 USD to advance UK welfare reforms for decapod crustaceans.

What happened with Conte et al. (2021) once it was published has been illuminating. Crustacean Compassion were immediately claiming the results of the review proved sentience in crustaceans (Figures 2, 3). This demonstrates that certain activist research groups are keen to sidestep normal scientific peer review to provide activist groups such as "Crustacean Compassion" ammunition to influence public opinion by claiming pain perception and sentience in decapods (Figures 2, 3). This is being done with the aim of pressurising politicians to add crustaceans to welfare legislation in the UK and elsewhere.

Figure 2. The contents of recent “scientific” reviews of crustacean welfare which were published following corruption of the normal scientific peer review process, were immediately embraced by activist groups such as “Crustacean compassion” in public awareness campaigns as “scientific evidence”.

Figure 3. Public awareness campaigns by “Crustacean compassion” were underpinned by “scientific evidence” that crustaceans “feel pain” and “are sentient”, however independent scientific reviewers of these same publications recommended “rejection” multiple times during the review process.

However, when the claims of groups such as “Crustacean Compassion”: are objectively reviewed, the quality of the science behind them is appalling. For example, a review undertaken by Diggles (2019) for CSIRO found that the scientific literature on the subject of welfare and pain in crustaceans is immature. It is based largely on a few dubious and disputed studies done on a small number of decapod species in instances where nociception was not confirmed, laboratory artefacts occurred, all variables that potentially influenced the results were not fully controlled, and interpretations of results were questionable or contradictory. Many studies were based on external application of benzocaine or acetic acid (vinegar) on crustaceans in a manner that would stimulate other receptors besides trauma receptors (nociceptors), and in fact in many papers it was not demonstrated that the substances applied even activated nociceptors at all. Instead, other chemosensations, such as olfaction (smell) and gustation (taste) were probably responsible for the behavioural changes observed, and these other chemosensations were not being controlled for in those studies (Diggles 2019). Indeed, chemicals such as vinegar are well known gustatory and olfactory attractant compounds for arthropods, including insects (*Drosophila* is the vinegar fly), as well as fishes and humans. So to assume vinegar is aversive, and not attractive, to crustaceans, without any evidence, then suggest that the resulting behavioural responses in crustaceans are "a bit like pain", is not science, its pure speculation. Furthermore, if proto-arthropods like decapod crustaceans are being included in welfare legislation based on these criteria, then there is no scientifically valid reason not to include more advanced arthropods (i.e. insects) in the Act as well.

In summary, the proposed criteria for pain being applied to crustaceans since 2014 has set the “evidential bar” for pain so low it is impossible to have confidence that the behaviours observed in many experiments are even due to nociception, extinguishing scientific confidence that these behaviours are in any way analogous to how the word pain is defined, used, and understood by humans. So by shifting the goalposts on what pain is, then lowering the scientific bar to allow crustaceans to meet the new “pain” definitions, we now have a situation whereby if you accept these definitions as valid and include crustaceans under welfare legislation, there is no reason why the more advanced arthropods like insects should be excluded. Which means this sort of precautionary approach quickly renders normal welfare concepts meaningless.

Given the critical flaws in design and interpretation of several crustacean “pain” studies, acceptance of claims of pain for these animals, even as a precautionary measure, represents acceptance of a much lower evidential bar than is usually dictated by normal scientific standards. This may lead to circumstances whereby the precautionary principle, underpinned by weak science, is used by decision makers to justify unnecessary constraints on scientific research or other uses of crustaceans, imparting significant costs to scientific programs (and potentially food production industries like fisheries and aquaculture), which are likely to exceed any benefits from changes in welfare status that may (or may not) accrue to these animals. As an example of the sorts of problems that arise from such poor science, see the mudcrab case study in Victoria (Appendix 3) which occurred in June 2019. As pointed out in Diggles (2019), such cases highlight how misunderstanding of crustacean welfare needs by government authorities and, in this case, untrained and underqualified RSPCA inspectors resulted in not only a gross misuse of inspectorate powers, but also would have resulted in adverse welfare outcomes for the animals concerned. In this case, removing ties from the mud crab claws would have obviously resulted in crabs autotomising limbs and killing other crabs inhabiting the same display tanks. Not only that, there are the equally obvious dangers of injury for those people handling crabs. In other words, the mud crab case study (Appendix 3) highlights how poor quality scientific evidence can be misused via animal welfare legislation to affect a massively reduced welfare outcome for both crabs and humans, all under guidance from the RSPCA.

This last case study highlights how important it is for the broader scientific community to ensure that the highest scientific standards are upheld in the field of aquatic animal welfare. If the precautionary principle is used to justify inclusion of certain animal groups (such as fish, crustaceans and cephalopods) under welfare regulation, or to enact certain regulations (i.e. for example, that some crustaceans cannot be killed by placing them in boiling water), policy-makers should be obliged to regularly review the scientific

criteria used to justify such decisions, with withdrawal of such regulations if more robust scientific data becomes available at a later date which invalidates the preliminary results used to trigger the precautionary decision (e.g. see the previous example of Jones et al. 2019 which debunked the "emotional fever" paper by Rey et al. (2015), and also see Appendix 2 for examples of recent literature that indicates how boiling may be the quickest and most humane method of dispatch of some crustacean taxa, without any possibility of recovery).

Of course, this does not mean that I am advocating that fish or crustaceans or cephalopods should be used (or abused) carelessly or indiscriminately. But it is important that the quality of any scientific research that may influence regulatory decisions that constrain research, food production or wild catch fisheries should be maintained to a very high standard. The science used for such important decisions should NOT be a product of the high motivational states of certain research groups (which is the antithesis of the normal skeptical hypothesis testing which characterises sound science), the erosion of robust scientific review, or the emergence of predatory journals, social media and scientific hype. And surely, we all agree that corruption of scientific review or other scientific processes as a "means to an end" to get groups like crustaceans listed under welfare legislation should never be tolerated as part of this process.

Sincerely

Ben K Diggles

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Appendix 1. Evidence of corruption of peer review process for Conte et al. (2021) Humane slaughter of edible decapod crustaceans.

------- Forwarded message follows -------
From: "Browman, Howard" <HowardB@hi.no>
Subject:Re: Humane Slaughter of Edible Decapod Crustaceans
Date sent: Fri, 23 Apr 2021 08:37:52 +0000

And I reviewed another article by Conte et al. for this journal and rejected it twice, but it was still published, with superficial changes that did not address the concerns.

So when they sent me this newest one to review, I responded that I will not longer review for them because they are wasting my time, since they do not respect the reviews that recommend rejection when the changes required are not made.

That is simply a reflection of the editorial model of these journals – the non-academic staff pushes the academic editors to go through as many iterations as it takes until the paper is accepted.

And here is the person who is listed as the editor of this article
https://voiceless.org.au/team/clive-phillips/
[https://voiceless.org.au/wp-content/uploads/2012/02/clivephillips.jpg]<https://
voiceless.org.au/team/clive-phillips/>

Clive Phillips | Voiceless<https://voiceless.org.au/team/clive-phillips/>
voiceless.org.au
Clive Phillips PhD is an Associate at the Curtin University Sustainable Policy Institute, whose research interests include the welfare of farmed,

_____
From: DigsFish Services <ben@digsfish.com>
Sent: April 23, 2021 10:25 AM
Subject: Re: Humane Slaughter of Edible Decapod Crustaceans

The explanation for this is actually thus:

I was given the paper to review. I reviewed and suggested rejection. See attached review. There were the obvious problems due to their selective biases, and pre-concieved ideas which ignored some of the more recent research that conflicted with their theories (e.g. evidence of boiling being the fastest way to kill some crustaceans).

As I recommended rejection, and the authors obviously disagreed with the review, I was not provided with further copies of the manuscript, which is why they have gone ahead and misquoted the various papers I pointed out were missing and, I noted, presented strawman arguments on the contents of my review (where I did NOT say there is "no requirement to be concerned about their welfare", but instead clearly state "the author is examining the science and is in no way advocating for careless or indiscriminate use of crustaceans by researchers or industry, out of fundamental respect for life itself".)

So I guess this is par for the course these days when there is minimal or no proper editorial oversight.

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From: "Browman, Howard" <HowardB@hi.no>
Subject: Re: Humane Slaughter of Edible Decapod Crustaceans
Date sent: Fri, 23 Apr 2021 06:31:22 +0000

> Thoughts about the context in which they cite Browman et al. (in the very last sentence of the Discussion)?
>
> _____
> From: Browman, Howard <HowardB@hi.no>
> Sent: April 23, 2021 8:29 AM
> Subject: Humane Slaughter of Edible Decapod Crustaceans
>
>
> https://www.mdpi.com/2076-2615/11/4/1089
[https://www.mdpi.com/img/journals/animals-logo-sq.png?1e820eb61dd8d573]<https://www.mdpi.com/2076-2615/11/4/1089>

Animals | Free Full-Text | Humane Slaughter of Edible Decapod Crustaceans<https://www.mdpi.com/2076-2615/11/4/1089>
www.mdpi.com
Vast numbers of crustaceans are produced by aquaculture and caught in fisheries to meet the increasing demand for seafood and freshwater crustaceans. Simultaneously, the public is increasingly concerned about current methods employed in their handling and killing. Recent evidence has shown that decapod crustaceans probably have the capacity to suffer because they show responses consistent with pain and have a relatively complex cognitive capacity. For these reasons, they should receive protection. Despite the large numbers of crustaceans transported and slaughtered, legislation protecting their welfare, by using agreed, standardized methods, is lacking. We review various stunning and killing systems proposed for crustaceans, and assess welfare concerns. We suggest the use of methods least likely to cause suffering and call for the implementation of welfare guidelines covering the slaughter of these economically important animals.

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Appendix 2. Conte et al. Slaughter of crustaceans – Review by BK Diggles (1 Sept 2020)– Recommendation: Rejection.

This manuscript reviews various methods of slaughtering crustaceans for human consumption. Throughout the manuscript there is an underlying assumption that the scientific literature has confirmed that crustaceans can experience pain and have the capacity to suffer. This assumption is incorrect. There are several fundamental technical scientific errors within the various research papers claiming pain and suffering in crustaceans, for example the definition for pain used, inability to distinguish between normal stress or startle responses and pain, as well as erroneous and inconsistent interpretation of behaviour in crustaceans exposed to various assumed stressors including known arthropod olfactory and gustatory feeding stimulants such as acetic acid (see Diggles 2019, Browman et al. 2019).

The review presented in the manuscript is selective in its overview of relevant literature and does not include several recent (and not so recent) high quality papers relevant to the field of arthropod welfare (Adamo 2019, Adams et al 2019, Broadhurst and Millar 2018, Ghanawi et al. 2019, Puri and Faulkes 2010, 2015, Stevens et al. 2015, Stoner 2012, Weineck et al. 2018, Wycoff et al. 2018 amongst others). For these reasons, the review is technically deficient and the authors' sometimes strident claims for pain are a distraction and are at odds with the equivocal and immature nature of the actual scientific evidence. For these reasons, the manuscript is of poor quality and cannot be recommended for publication in its present form.

If the authors wish to persist with this review, they need to provide a more complete, skeptical and balanced representation of the relevant scientific literature. They need to temper their statements in regard to alleged pain perception (e.g., see Ghanawi et al. 2019 - "pain in crustaceans is not understood") and instead better emphasise a broader and more workable view of the welfare status of crustaceans which relies on verifiable physiological parameters (e.g. haemolymph parameters, heart rate, see papers by Adams et al. 2019, Weineck et al. 2018), instead of assuming unverified and unmeasurable allegations of "pain".

Furthermore, given the wide range of crustacean species harvested from such an extremely broad range of ecological niches (e.g. large bodied cold water species, vs small bodied warm water species), any attempt to achieve "broad harmonization" of techniques for crustacean slaughter are likely to result in unintended consequences and reduced welfare outcomes for at least some of those species, as it appears highly unlikely that "one size will fit all". This shown by the results of Weineck et al. (2018) who found that ice slurry and electroshocking may paralyze crabs, but their neural circuits remained functional; however, in shrimp and crayfish the neural responses were absent. The results of Adams et al. (2019) further reinforce a more pragmatic approach, as they found that heating by placing crayfish directly in boiling water was the quickest and most effective method for killing that species without possibility of recovery. Thus, the available scientific evidence suggests that the slaughter methods used for crustaceans should vary depending on species, and that methods such as placing them in boiling water must remain "on the table", and not be summarily dismissed based, presumably, on preconceived bias on behalf of the authors. Therefore, if a more pragmatic , science based approach is undertaken to this topic, and all the relevant literature is reviewed and skeptically analysed, a worthwhile and scientifically defensible review article may eventually be achieved.

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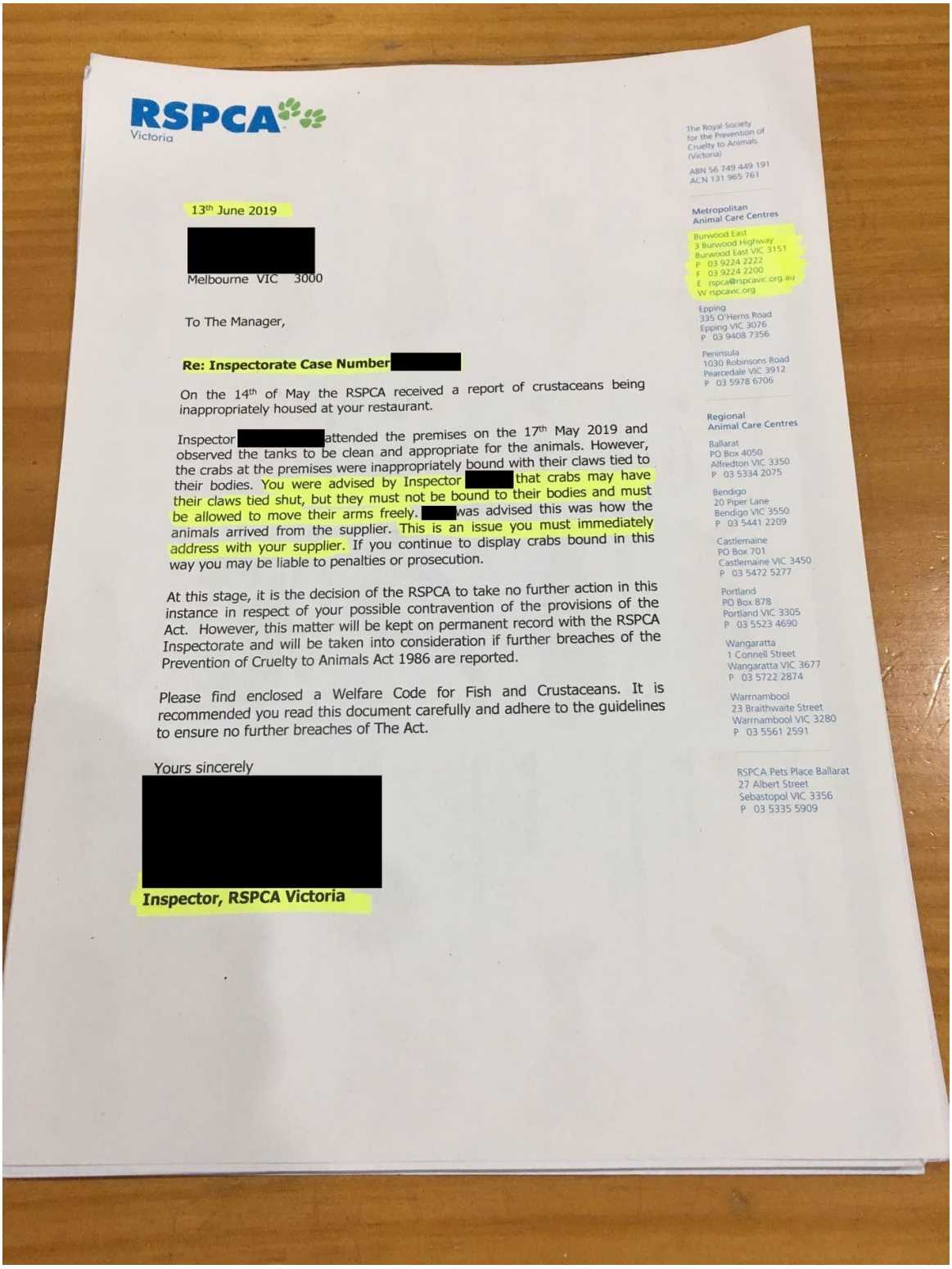
Appendix 3. RSPCA crab case study Victoria, June 2019. As pointed out in Diggles (2019), such cases highlight how misunderstanding of crustacean welfare needs by government authorities and untrained RSPCA inspectors can result in gross misuse of inspectorate powers as well as adverse welfare outcomes. In this case, removing ties from the mud crab claws would have resulted in crabs autotomising limbs and killing other crabs inhabiting the same display tanks, as well as obvious danger for those handling crabs. i.e. massively reduced welfare outcomes for crabs and humans under RSPCA guidance.



RSPCA
Victoria

The Royal Society for the Prevention of Cruelty to Animals (Victoria)
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ACN 131 965 761

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E rspca@rspcavic.org.au
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Regional Animal Care Centres

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13th June 2019

[redacted]
Melbourne VIC 3000

To The Manager,

Re: Inspectorate Case Number [redacted]

On the 14th of May the RSPCA received a report of crustaceans being inappropriately housed at your restaurant.

Inspector [redacted] attended the premises on the 17th May 2019 and observed the tanks to be clean and appropriate for the animals. However, the crabs at the premises were inappropriately bound with their claws tied to their bodies. You were advised by Inspector [redacted] that crabs may have their claws tied shut, but they must not be bound to their bodies and must be allowed to move their arms freely. [redacted] was advised this was how the animals arrived from the supplier. This is an issue you must immediately address with your supplier. If you continue to display crabs bound in this way you may be liable to penalties or prosecution.

At this stage, it is the decision of the RSPCA to take no further action in this instance in respect of your possible contravention of the provisions of the Act. However, this matter will be kept on permanent record with the RSPCA Inspectorate and will be taken into consideration if further breaches of the Prevention of Cruelty to Animals Act 1986 are reported.

Please find enclosed a Welfare Code for Fish and Crustaceans. It is recommended you read this document carefully and adhere to the guidelines to ensure no further breaches of The Act.

Yours sincerely

[redacted]

Inspector, RSPCA Victoria

Diggles BK (2019). Review of some scientific issues related to crustacean welfare. *ICES Journal of Marine Science* 76: 66–81.