Richard Charter letter submitted to CCC

July 3, 2019

California Coastal Commission

45 Fremont Street, Ste. 2000

San Francisco, CA 94105-2219

Re: CD-0002-19 (Agenda item: W14a) – Deny

Mr. Charter presents a number of false accusations in his testimony. Several of these accusations are simply repeats of erroneous information that made its way into news media and other outlets.

It is unfortunate that Mr. Charter did not take the time to review these allegations, or if he did, that he intentionally shared misleading information with the CCC.

**Most prominent of these disasters involved the unintentional killing of 46 bald eagles at Rat**

**Island Alaska**

1. Best available science used in EA suggested Bald Eagles would not be present over winter on Rat island (now named in the native Aleut language Hawadax, as rats are no longer present). So yes, the Bald eagle mortality was unanticipated. In retrospect, this assumption should not have been made given the lack of direct observational evidence from the site during winter.
2. What Charter fails to mention is that Bald Eagles have recovered on Hawadax Island. They began breeding within 5 years after the project when there were 10 eagles breeding on the island (2013, eradication was in 2008). Further, Tufted Puffins went from 0 before rat eradication to 6 active burrows 5 years later.
3. Farallones has 50 years of continuous presence of biologists monitoring the island. Thus the environmental risk is much better known than on Rat Island.

**As well as photographic evidence of the accidental fish kills associated with the failed Lehua drop in Hawaii in 2017.**

1. A similar report of dead fish following the first effort to eradicate rats from Lehua in 2009 was investigated. In this project multiple media outlets reported the fish kill was related to the eradication project. However, when the facts were evaluated it was clear they were not related - From an independent review of the project available on line: In terms of validity of the testing, the several fish sampling and analyses of tissues by independent laboratories represent very good practice, conducted with high quality assurance and with the universal ‘below-detectable-limit’ results clearly indicating that the fish and whales had not been lethally exposed to diphacinone, and almost certainly not at all.
2. From the final report on the 2017 eradication: In addition to planned monitoring efforts, project personnel visited a large tide pool on the east arm of the caldera on September 5, 2017, after a public report of dead fish. Project staff found 45 small dead mullet-type fish and two dead immature boobies in the pool. All fish and birds were collected for analysis. All samples were in advanced stage of tissue degradation and three were sent out for analysis. Diphacinone residues were detectable in one sample, but contamination from exposure to the elements (rather than ingestion) could not be ruled out. Indicative signs of mortality due to anticoagulant exposure could not be identified. The fish and bird carcasses were found with a large amount of organic debris including seaweed that appeared to have been washed ashore by an unusually high tidal event

The evidence does not support that the rat eradication was related to the fish kill. (we need more here- BK has asked IC for more information. If they don’t have further information on this, we can make an argument based on biology of boobies (feed too far offshore to be at risk of poisoning) and that of the fish- but since they don’t even know the species of fish “mullet like” it will be hard to make a case on their biology, and mullet would likely consume bait particles…

**For mice, there is a 38 percent failure rate in such projects, so the claimed outcome may not even occur, even after the inevitable damage has been done to non target species.**

1. The potential for the project to not be successful is part of the analysis of the costs and benefits of the project. Charter attempts to suggest that is not the case.
2. The 38% failure rate is an outdated and erroneous number, and has been revised, with justification in the Environmental Assessment for the project. From Farallon EIS: As of the writing of the RDEIS, house mice had been successfully eradicated from 60 islands, with six more either pending confirmation or in progress, and four whose success is unknown (Samienago 2016 and DIISE 2015). All of the successful house mouse eradications used rodent bait containing a rodenticide.

Of 944 rodent eradications examined by the Database of Island Invasive Species Eradications (DIISE 2015) and Samaniego (2016), 86 targeted house mice and 61 (four islands were subsequently reinvaded) were successful (Mackay et al.. 2007, Samaniego 2016, DIISE 2015). Success rates have improved over time and since 2007, 28 of the 30 mouse eradications undertaken have been confirmed as successful (Samaniego 2016).

1. From Midway Mouse Eradication EA:

Between 2005 and 2015, the success of mouse eradications increased to 93.3% of 31 attempted eradications. This increase in the success rate has been attributed to better international cooperation and knowledge sharing between eradication practitioners regarding lessons learned (Veitch et al. 2002, 2011), and the establishment of best practices principles for the eradication of rodents in temperate (Broome et al. 2014) and tropical ecosystems (Keitt et al. 2015). Today, successful rodent eradications on all but the smallest of islands (i.e., less than ~12 ac or 5 ha) rely on the use of rodenticides, and specifically, anticoagulant rodenticides (Database of Island Invasive Species Eradications [DIISE] 2016).

**Since the USFWS official estimate is 1,700 gulls killed, with some internal USFWS estimates running to twice that,**

1. This is a clear misrepresentation of the project.
2. 1,700 is the output of a mathematical model that identifies this number as the limit for a population level impact on gull populations.
3. Mr. Charter continues to use this misleading number even after being corrected. (need verification for this…)

**Undertaken at the beginning of the Dungeness crab season and in the midst of the Golden Gate Raptor Migration, the proposal’s risk-benefit equation simply does not compute**

1. This generic and misleading statement suggests that these risks are excessive. The Dungeness crab risks are evaluated in the EIS:

Section 4.6.3.3

Some nearshore fishery species, particularly scavenging species such as the Dungeness crab, have the low potential to be exposed directly or secondarily to rodenticide. Crabs or other scavengers may consume bait pellets (primary exposure) or sick or dead wildlife exposed to rodenticide (secondary exposure). However, because benthic habitats immediately surrounding the islands are poor for supporting Dungeness crabs, only small amounts of accidental bait drift are expected to reach the marine environment, and bait will degrade rapidly upon entering the marine environment, the risk of primary exposure to Dungeness crabs or other subtidal species is very low and likely would be limited to a few individuals. Also, because nearly all wildlife (e.g., mice) impacted by the eradication project are expected to occur on the islands, the risk of secondary exposure to any subtidal species is considered to be negligible. In addition, existing toxicity data has shown that most invertebrates (including crabs; see Section 4.5.4.3.4) and marine fish are are not affected by rodenticides or are not acutely sensitive to exposure (Riegerix 2017). Furthermore, eradication efforts at other islands have not been shown to impact fishery resources, and in many cases rodenticide residues cannot be detected in marine fish following bait application (Masuda et al. 2015). Based on best available information, the significance determination for fishery resources is negligible.

1. The raptor migration risks are evaluated based on over 40 years of continuous observations:

Section 3.4.2.3 Raptors

Researchers have observed an average of four to six individual peregrines on the islands during the winter from 1990-1999 and numerous other migrants (DeSante and Ainley 1980, Pyle and Henderson 1991, Earnheart-Gold and Pyle 2001), a number that increased during the 2000s (Tietz 2013a). A high count of ten individuals was observed on one day in November 2011 (Tietz 2013a). Peregrines feed on a variety of bird species at the Farallones including seabirds, shorebirds and landbirds that are captured either over the island or offshore (USFWS 2009). Several other non-breeding raptors visit the islands during the migratory season including various species of hawks, kites, eagles, falcons, and owls. Of the visiting migrants only a few species averaged at least 10 recorded arrivals per year in 1968-1999 including: burrowing owls, sharp-shinned hawk (Accipiter striatus) and American kestrel (Falco sparverius) (Richardson et al. 2003).

Section 4.5.3.2.1 Raptors evaluates the 3 species at most risk and determines there is no significant risk. (why just these 3 species?)

**The USFWS rationale for its project is the claimed rehabilitation of the Ashy storm-petrel, but the very same USFWS rejected a petition for listing this species, providing the response that the population dynamics are one of normal fluctuation, with an upward population trend prevailing.**

1. Need confirmation from Pt Blue about population dynamics in listing process
2. Mr. Charter fails to mention that the petition for listing includes the statement that suggests the listing denial takes into account that action like mouse eradication on Farallones are planned:

From: **Federal Register** /Vol. 78, No. 204 /Tuesday, October 22, 2013 / Proposed Rules

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A number of conservation measures

have taken place or are ongoing that

minimize the impact on ashy storm petrels

from the potential threats listed

above. These conservation measures are

detailed in the Species Report (Service

2013; *http://www.fws.gov/sfbaydelta/*)

and include an invasive species

eradication program on the SE Farallon

Island, human visitation reduction,

survey monitoring restrictions,

burrowing owl translocations, planning

for mouse eradication on the SE

Farallon Island, island spotted skunk

removal, artificial nest site construction,

artificial lighting restrictions, and oil

pollution regulations.

**the USFWS should have included and considered in their plan an option that dealt with their identified culprit, the burrowing owls, instead of forcing the entire ecosystem to accept the non-target overkill being proposed by the agency’s selected high risk option**

The Farallon Mouse Eradication EIS includes the following:

2.7.9 Burrowing Owl Translocation Only

The capture and translocation of wintering burrowing owls from the South Farallon Islands in lieu of eradicating mice was considered as a method to reduce owl predation, and thus the indirect impacts of mice, on ashy and Leach’s storm-petrels. In the absence of mouse eradication, the relocation of burrowing owls would be expected to benefit storm-petrels on the South Farallon Islands. However, translocating burrowing owls away from the South Farallon Islands does not address the many other threats that mice pose to the Farallon Islands ecosystem, and thus does not address the purpose of this project; that is, to meet the Service’s management goal of eradicating invasive house mice from the Farallon Islands National Wildlife Refuge in order to eliminate their negative impacts on the native ecosystem of the Farallon Islands. Thus, translocation of burrowing owls in lieu of eradicating mice was not considered as an alternative.

**The USFWS also has declined to seriously entertain the use of proven contraceptive baits now licensed by**

**the EPA, to serve the same stated purpose with virtually none of the non-target mortality and food chain contamination that would be guaranteed by brodifacoum poisoning**

1. This product (Contrapest) has currently been tested for Norway and Black rats and not with house mouse. Further, the efficacy of the product on rats does not have properties that would result in eradication – it leaves too many individuals behind. Even if the product could be proven to work in mice, it would require a permanent network of bait stations across the island that are maintained and refilled regularly. This is similar to the considered but discarded project alternative using bait stations with rodenticide.
2. From Midway EA: In a review of rodent control methods, Buckle and Smith (2015) state that reproductive control is not yet safe or effective for field use. Fertility control has been used with limited success as a method of pest management in a few species. Experimental sterilization methods have included chemicals and proteins delivered by vaccine, and genetically-modified viral pathogens. However, the effectiveness of these experimental techniques in the wild, and their impacts to nontarget animals are unknown. Aerial application of rodenticide is a more practical, effective, and a safer method to eradicate rats than repeated baiting of uncertain oral contraceptives on a remote island across seasons or capturing, vaccinating, and releasing every member of a single gender of the Palmyra rat population. This lack of data and tools disqualifies the use of fertility control from detailed consideration (Tobin and Fall 2005).

**The State of California has wisely banned the retail sale of the same chemical, and in the California State Legislature, our Assembly has already passed - and the Senate Environmental Quality Committee recently reported out - AB 1788, which would preclude the use of this particular poison on public and private lands anywhere in California, with some exemptions**

1. Mr. charter conveniently leaves out details on the exemption – for island eradication purposes.

Text from AB1788: (9) The use of pesticides and rodenticides to reduce or eliminate nonnative invasive species inhabiting or found to be present on offshore islands is critically important for the environmental and ecosystem health of these islands, and for allowing federally and state-listed endangered and threatened species, including species presumed extinct or on the verge of extinction, to recover and propagate back to population levels that existed before the presence of these nonnative invasive species and for avoiding federal or state listing of native and endemic species due to their displacement by nonnative invasive species.

From Richard Charter public testimony (verbal):

* Snail extinction in the Seychelles (and black abalone is a snail)
  + I looked up the paper on this – it says population went from 1 before eradication to 0 after and declared eradication responsible for extinction
  + Another paper of his does show some toxicity of brodifacoum to this genus
  + Multiple other studies have shown no impact on snails.
  + This needs a more thorough review of the information.
* WHO “Do not put in water” (link in his letter is dead)
  + I reviewed WHO documents on line and found this: (From WHO Document (Brodifacoum is relatively persistent in the environment, but its specific use in the form of low-concentration bait formulations cannot be a significant source of air, water, soil or food contamination.)

Relevant to the issue of water contamination in general:

* + There has been significant study into the impact of brodifacoum in water. First, pellets dissolve quickly in water – on Anacapa they dissolved completely within 5 hours. Ocean water sampling 24 and 48 hours post application on Anacapa tested negative for brodifacoum samples (from Midway EIS).
  + Brodifacoum residues have been detected in water after some eradications. These have primarily been in low energy habitats (lagoons, protected tide pools) where bait pellet parts can remain – due to the low solubility in water these positive samples are due to collection of water that has suspended bait pellet particles rather than true water contamination. In high energy habitats that are exposed to the open ocean, pellets are known to degrade quickly and the pellet particles sink to the seafloor. Water sampling in these habitats has shown no signs of water contamination – Aancapa mentioned above,
  + From Midway EIS: Fisher et al. (2011) summarized the results of environmental monitoring for brodifacoum residues after rodent eradications in a fenced reserve at Maungatautari, New Zealand and on the offshore islands Little Barrier, Rangitoto and Motutapu, New Zealand. Brodifacoum was not detected in extensive fresh water monitoring at Maungatautari, or in fresh water samples from Little Barrier Island. Residual concentrations were present in soil samples from underneath degrading bait pellets on Little Barrier and decreased to near the limit of detection 100 days after application. No brodifacoum was detected in marine shellfish sampled from Little Barrier, Rangitoto or Motutapu.
  + From Farallon EIS: Even if bait does drift into the water bodies on or around the South Farallones at the full application rate, it would be very unlikely to contribute to detectable levels of brodifacoum in the water column. Physical and chemical properties of the bait formulation, low water solubility of rodenticide and strong chemical affinity of brodifacoum to the grain matrix, significantly reduce the chance of rodenticide contaminating aquatic or marine environments. An example of the low contamination risk posed to water by brodifacoum was provided in 2001 when a truck crashed into the sea at Kaikoura, New Zealand, spilling 18 tons of Pestoff 20R (20 ppm brodifacoum) cereal pellets into the water. Measurable concentrations of brodifacoum were detected in water samples from the immediate location of the spill within 36 hours; however, after nine days concentrations were below the level of detection (0.02 µg/L or parts per billion) (Primus et al. 2005). Similar to Kaikoura, the Farallones are characterized by their steep rocky coastline, high wave action, and strong currents which would break down any bait pellets relatively quickly if they were to accidently drift into the marine environment. In a more recent study, Pitt et al. (2015) documented that no sea water samples out of 27 collected were positive for brodifacoum following rodenticide bait application on Palmyra Atoll; only one of seven freshwater samples collected from the same study were positive for brodifacoum. Environmental testing during rodent eradications and eradication trials in the California Current marine system and elsewhere have failed to detect more than trace amounts of brodifacoum in any water samples taken after bait application (Buckelew et al. 2005, Buckelew et al. 2008, Howald et al. 2010, Pitt et al. 2015). Other studies have suggested similar findings, where minimal to no nearshore contamination of ocean biota, suggestive of water contamination, was detected following analysis of post-application samples at Anacapa Island and Ulva Island (Buckelew et al. 2005, Howald et al. 2010, and Masuda et al. 2015).
* Black abalone listing? He suggests that the risk is too much for this species given its listed status…