

**House Mouse Eradication from the South Farallon Islands Project**  
**Draft Summary Matrix**  
**Public Scoping Comments for Draft Environmental Impact Statement**  
**28 July 2011**

U.S. Fish and Wildlife Service, San Francisco Bay National Wildlife Refuge Complex

Public scoping period: April 26<sup>th</sup> – June 10<sup>th</sup>, 2011

Public scoping meeting held May 12<sup>th</sup>, 2011; Attendees 20

**Overall characterization:**

We received 48 comments, and 2,709 signed WildCare petitions (497 included comments) against the project, 41 signed other petitions against the project.

Comments were received from the following groups and individuals:

U.S. EPA, California Dept. of Fish and Game, USDA – Wildlife Services, Poison Free Action Coalition, Keep Barn Owls In Berkeley, Golden Gate Audubon Society, American Bird Conservancy, Center for Biological Diversity, Marin Humane Society, Project Coyote, Hungry Owl Project, WildCare, Stockton Buck, Peter Pyle, Joelle Buffa, Stephanie Strait, Patricia Blau, Randy Frank, Jonathan Van Bourg, Donna, Roseanne Manina, Emily M. Renzel, Grier Cooper, Michelle Rutledge, Billiejean Snyder, Jean Arnold, Ellen Nadeau, Laurel Bertoncini, Joanne Miller, Britt Clemm, Richard Poché, Richard Pavék, James Muller, Suzanna Anderson, David Senesac, Earle W. Cummings, Linda, Pat Cline, Leonard Blumin, Dan Silver, Jesse Irwin, Dudley Miller, Roger D. Harris, Mark Rauzon, William Sydeman, David Ainley, Brian Dempsey, Malcolm Coulter, Michael Ellis, Dotty E. LeMieux, Hans Peeters, Lisa Owens Viani, Ann L. Riley, Joe Eaton, Christopher Kroll.

1. 12 (25% or 0.4% including petitions) in full support of the listed alternatives
  - 2 organization(s)
  - 10 individuals
2. 8 (17% or 0.3% including petitions) in support of the listed alternatives w/ exceptions
  - 3 government agencies
  - 1 organization(s)
  - 4 individuals
3. 24 (50% or 0.9% including petitions) against the list of alternatives: rodenticide use
  - 2 organization(s)
  - 22 individuals
4. 4 (8% or 0.1% including petitions) against the list of alternatives: mouse eradication
  - 1 organization(s)
  - 3 individuals
5. 2,751 (98% including petitions only) against the list of alternatives: Brodifacoum-25 use
  - 1 organization(s)
  - 2,750 individuals

Common themes compiled from comments/petition	Frequency occurred
Reducing non-target impacts	9
Analyze more than one rodenticide	4
Justification for purpose and need	3
Analyze success/failures of previous island rodent eradications	7
Minimize rodenticide dispersion into marine environment	3
Translocation of burrowing owls	7
Does not support use of rodenticide	22
Supports the use of mechanical methods to control/eradicate mice	43
Does not support the use of "Brodifacoum-25 Conservation"	2,709

### Substantive Comment Summaries

Note: Numbers correspond with stance on listed alternatives (listed above). Letters correspond with substantive comment categories: A- Purpose and Need, B- Alternatives, and C- Non-target Impacts; (ie.) 2 B,C is a comment that supports the alternatives with exception and commented on the alternatives and non-target impacts.

No.	Comment	Freq.	Category
1	<p><u>EPA:</u></p> <ul style="list-style-type: none"> <li>EPA would like to be a cooperating agency to provide early input on pre-project planning, impact assessment, and alternatives development</li> <li>If IC will continue to work with FWS then FWS must prepare a disclosure statement stating that IC has no financial interest in the outcome of the project.</li> <li>If IC or other contractors write the EIS, FWS must review and approve of the document. <ul style="list-style-type: none"> <li>Purpose and Need: <ul style="list-style-type: none"> <li>Write a clear Purpose and Need statement</li> <li>Provide a framework for a complete project description and alternatives</li> <li>Write a detailed Biosecurity plan since prevention of reentry is a part of the stated Purpose and Need</li> <li>Describe how mice got to the Farallones</li> </ul> </li> <li>Alternatives: <ul style="list-style-type: none"> <li>Evaluate a reasonable <u>range</u> of alternatives</li> <li>Include different rodenticides, different application rates, and combined methods. Also consider non-pesticide alternatives</li> <li>Make the alternatives selection process transparent</li> <li>Analyze the No Action Alternative – show how mice impact the islands</li> </ul> </li> <li>Application Methods: <ul style="list-style-type: none"> <li>Consider topography, costs, and nontarget species</li> <li>Consider bait stations independently or supplementally (determine home ranges of mice to determine spacing)</li> <li>Consider hand broadcast and bait station alternative</li> </ul> </li> </ul> </li> </ul>	1	2 A,B,C

No.	Comment	Freq.	Category
	<ul style="list-style-type: none"> <li>▪ Consider an aerial application for SEFI and hand bait other islands</li> <li>▪ Considerations for rodenticides – palatability, appropriateness of toxicant for target population, potential for resistance, potential efficacy, and non-target impacts</li> <li>▪ Don't limit pre-project studies to brodifacoum</li> <li>▪ Weigh the risk of failure vs. risks to non-targets</li> <li>▪ Don't consider rodenticides that include insecticides to avoid impact to camel crickets</li> <li>○ Operational Planning and Monitoring: <ul style="list-style-type: none"> <li>▪ Include logistical planning in EIS including who will implement and organizational structure</li> <li>▪ Write pre and post application monitoring and include an index of target and non-target species for abundance before and after</li> <li>▪ Take genetic samples to determine if post eradication to determine if attempt failed or island was reinvaded.</li> </ul> </li> <li>○ Excess Bait and Carcass Disposal: <ul style="list-style-type: none"> <li>▪ Explain how excess bait will be disposed of later</li> <li>▪ Develop a monitoring, collection, and disposal plan for dead animals</li> <li>▪ Evaluate the impacts that could occur from carcass disposal ie) if buried</li> </ul> </li> <li>○ Cost: <ul style="list-style-type: none"> <li>▪ Include cost and funding of the project for factors that are relevant to decision making</li> <li>▪ Conduct a cost-benefit analysis since eradication have failed due to funding and manpower</li> </ul> </li> <li>○ Impact Assessment: <ul style="list-style-type: none"> <li>▪ Identify all nontarget and target species impacts that will be on or near the island during eradication</li> <li>▪ Acknowledge uncertain information that cannot be obtained due to cost <ul style="list-style-type: none"> <li>• Provide a statement of incomplete information, a statement of relevance, and summary of existing credible scientific data</li> </ul> </li> <li>▪ Evaluate impacts of rodenticides on ASSP and the ability for the population to recover from such impacts</li> <li>▪ Address owl hyperpredation better – provide <u>sufficient</u> documentation to support assumptions</li> <li>▪ Analyze impacts from the No Action Alternative</li> <li>▪ Analyze impacts of a failed eradication attempt</li> <li>▪ Objective 1.1 in the CCP is intended to reduce gulls on SEFI <ul style="list-style-type: none"> <li>• How will this project help reach that goal</li> </ul> </li> </ul> </li> </ul>		

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	<ul style="list-style-type: none"> <li>▪ Analyze impacts to marine mammals by using placebo baits</li> <li>○ Threatened and Endangered Species: <ul style="list-style-type: none"> <li>▪ Discuss how FWS will meet ESA Section 7 obligations for stellar sea lions (brown pelican mentioned – delisted in 2009)</li> <li>▪ Discuss any candidate species</li> </ul> </li> <li>○ Water Resources: <ul style="list-style-type: none"> <li>▪ Predict impacts to ground, surface, and coastal waters</li> <li>▪ ID drinking water sources, potential impacts, and safety measures</li> </ul> </li> <li>○ Climate Change: <ul style="list-style-type: none"> <li>▪ Describe the effects of climate change on island and species, as well as cumulatively with other project impacts</li> </ul> </li> <li>○ Mitigation Measures: <ul style="list-style-type: none"> <li>▪ Identify and discuss any proposed mitigation measures</li> <li>▪ State mitigation measures in terms of measurable performance standards or expected results to establish performance expectations ie) remove mouse and gull carcasses and unconsumed bait to reduce secondary poisoning</li> </ul> </li> <li>○ Cultural Impacts: <ul style="list-style-type: none"> <li>▪ Identify impacts to cultural resources</li> </ul> </li> <li>○ Recreational Impacts: <ul style="list-style-type: none"> <li>▪ Identify impacts to recreationalists (whale watching and fishing)</li> <li>▪ Document any environmental justice issues</li> </ul> </li> </ul>		
2	<p><u>California DFG – Bay Delta Region:</u></p> <ul style="list-style-type: none"> <li>• The DFG supports FWS’s goal to eradicate house mice from the islands</li> <li>• The Draft should describe the background, purpose and need, and a range of alternatives with mitigation measures</li> <li>• Recommendations: <ul style="list-style-type: none"> <li>○ Discuss historic use by species and population trends of breeding seabirds that may be adversely impacted</li> <li>○ Address impacts to mouse predators (birds of prey) to secondary effects</li> <li>○ Purpose and Need – thorough description of mouse/owl/ASSP relationship <ul style="list-style-type: none"> <li>▪ Describe direct and indirect impacts to island species</li> </ul> </li> <li>○ Describe lessons learned from previous rodent eradication projects <ul style="list-style-type: none"> <li>▪ Describe how this project will apply lessons learned and decrease impacts to non-targets ie) use of smaller pellets, dyed pellets, use of a deflector</li> </ul> </li> <li>○ Impacts analysis should describe the mechanism and mobilization</li> </ul> </li> </ul>	1	2 A,B,C

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	<p>of brodifacoum in soil, water, biota, and whether these attributes differ from previous projects (show the lessons learned)</p> <ul style="list-style-type: none"> <li>○ Consider a reasonable range of alternatives <ul style="list-style-type: none"> <li>▪ 2 alternatives using one rodenticide and aerial application is not acceptable</li> <li>▪ Consider a large group of alternatives and clearly describe why an alternative was dismissed from further consideration</li> <li>▪ To the extent possible – consider non-pesticide alternatives</li> </ul> </li> </ul>		
3	<p><u>USDA – Wildlife Services:</u></p> <ul style="list-style-type: none"> <li>• We believe that the eradication of invasive rodents on island has the potential for enormous conservation benefits, that the proposed use of brodifacoum may be warranted, and that it is a vital conservation tool for protecting native island habitats.</li> <li>• Eradication projects must be carefully planned to avoid unacceptable short or long-term negative impacts as these could put the use of this tool for future invasive management activities at risk.</li> <li>• We urge FWS to proceed cautiously and to engage fully in the NEPA planning, partnering, and document development processes to ensure that a full range of alternatives are considered and environmental impacts are identified. <ul style="list-style-type: none"> <li>○ Scoping: <ul style="list-style-type: none"> <li>▪ Utilize the expertise of a broad range of experts</li> <li>▪ A proposal with only the most toxic remedies in its range of alternatives is unacceptable</li> </ul> </li> <li>○ Need for Action: <ul style="list-style-type: none"> <li>▪ Provide a detailed discussion of the need for the project and the need to implement at this time to help identify the environmental issues that should be evaluated.</li> <li>▪ The use of the toxicant should be a last resort</li> </ul> </li> <li>○ Environmental Issues: <ul style="list-style-type: none"> <li>▪ How does the proposed action and alternatives meet the objective of eradicating mice with long term benefits to native species?</li> <li>▪ Likely negative and positive non-target effects, water, and humans</li> </ul> </li> <li>○ Alternatives: <ul style="list-style-type: none"> <li>▪ Explore other action alternatives that minimize harmful environmental effects</li> <li>▪ Bait stations in combination to increase precision of product delivery and reduce spillage</li> <li>▪ The use of diphacinone may require evaluating a new formulation for mice would be warranted due to the high likelihood for significant adverse effects to BUOW and other raptors and gulls.</li> </ul> </li> </ul> </li> </ul>	1	2 A,B,C

No.	Comment	Freq.	Category
	<ul style="list-style-type: none"> <li>▪ Include detailed mitigation</li> <li>○ Monitoring: <ul style="list-style-type: none"> <li>▪ Strong monitoring effort for eradication efficacy, ecosystem response, and ecological impacts should be integral of the eradication planning</li> <li>▪ Monitoring must be adequately funded</li> </ul> </li> <li>○ Biosecurity: <ul style="list-style-type: none"> <li>▪ Provide a detailed biosecurity plan</li> </ul> </li> <li>• If FWS is interested in having WS provide technical review, analysis, meeting time with staff, and travel expenses to help develop alternatives, analyze impacts, and provide detailed document review, we would ask for a written agreement specifying the expectations of the Service.</li> </ul>		
4	Use lessons learned from other similar island rodent eradication projects. Consider timing of the project, type and quantity of poison, captive holding of sensitive species, and minimizing spread of poison into marine environment to minimize harm to non-target species.	1	1 B,C
5	Defer to USFWS and PRBO scientists expertise. Concerned with potential impacts to Burrowing Owls and other raptors. Suggest USFWS improve communications with the public.	1	1 B,C
6	Alternative B and C are unacceptable due to the potential significant impacts to non-targets, which have been reported for previous rat eradications (Rat and Anacapa Island). EIS needs to consider possibility of eradication failure, alternatives other than aerial bait broadcast, mouse control by use of snap traps, and owl relocation.	1	3 A,B,C
7	Does not support use of rodenticides and suggests leaving island uninhabited for a minimum of 30 years to restore ecological balance.	1	3 A,C
8	Does not support use of rodenticide	3	3 A
9	Translocate burrowing owls to a faraway location, such as east of the Sierras, and trap mice to eradicate population.	1	2 B,C
10	Weigh long-term impacts more heavily than short-term, and similarly population level effects more than individuals. Consider using parallel overhead wires to exclude gulls from certain areas during rodenticide application.	1	1 B
11	Non-native mice alter the ecosystem by providing food for owls during fall, yet the vast majority dies off in winter from starvation, causing the owls to often starve by early spring.	1	1
12	In addition to brodifacoum, other potential rodenticides need to be compared and analyzed for palatability, primary, and secondary toxicity. Concern about aerial broadcast of brodifacoum, the potential environmental contamination, and non-target risks, including the thousands of gulls inhabiting the island.	1	2 B,C
13	Non-toxic and environmentally sustainable alternatives are needed.	1	3 B,C
14	Die baits to colors that birds find objectionable. Conduct a pilot study to determine how many mice die above or below ground when consume bait.	1	2 C
15	Utilize raptors to hunt the mice instead of using rodenticide.	1	3 B
16	Educate the public on the success of previous eradication operations,	1	1

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	potential non-target poisoning, and the adverse effects of mouse presence to the natural ecology of the island.		
17	The islands will experience an explosion of vegetation once mice are removed, and this may negatively impact nesting habitat for storm-petrels. Mouse eradication should not occur unless a strong vegetative component is included.	1	2 B
18	Urge against rodenticide use because it is extremely inhuman and will have adverse impacts going up food chain	6	3
19	Great potential harm to raptor is too great. If alternatives require more money (from labor and traps), it is worthwhile.	1	3
20	Let evolution play its course and leave the island alone.	1	4 A
21	A rodenticide so toxic and harmful will not restore the ecosystem.	1	3
22	The potential harm to non-targets is great and the possibility of fully eradicating mice is low and the process would continue.	1	3
23	A better solution than poison must exist; there are not enough predators. Native vs. non-native is illogical thinking because habitats change. A perfect balance will not exist.	1	3
24	The public scoping meeting seemed pre-decisional. The logic of removing the mice from the ecosystem seems illogical. Will poisoning continue after mice are removed if plants become unbalanced?	1	3
25	The planned poisoning is unthinkable and should be unlawful. Is it possible to cut back the food source of the mice?	1	3
26	The secondary toxicity of brodifacoum is greater than other anti-coagulants, including a half-life of 180 days. The USFWS should follow the example of the USEPA, which is moving away from brodifacoum.	1	3
27	Broadcasting brodifacoum will also poison raptors such as red-tailed hawks and also the Farallon arboreal salamander. Instead, remove burrowing owls and replace them with Northern harriers to control the mice problem in the spring and summer, and then remove them from the island in the fall. Great blue herons can also be introduced to consume mice.	1	3
28	The pesticide can have negative affects to trophic interactions associated with its use as well as its ability to enter the surrounding aquatic ecosystem. The implications of using this toxin are unclear.	1	3
29	The serious side-effects of this chemical need to be considered. The possibility of having more deaths to Ashy storm-petrels may be greater with the rodenticide approach than by the current rate of predation from burrowing owls. Trapping may be an alternative solution to reduce the mouse population and then if necessary, apply a less toxic chemical to eradicate them.	1	3
30	Trying to control the mouse population is like two wrongs do not make a right. Controlling one species may not simply solve the problem, it may create other problems.	1	4 A
31	Non-native species have been very destructive in the Galapagos and eradication programs have been successful without much detriment to other species. The Farallones has very important seabird colonies which are vital to the entire Eastern Pacific ecosystem. The mice are a direct threat to Ashy	1	1

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	storm-petrels and they deserve our protection.		
32	Every bio-control has a downside; the good achieved must be weighed with the potential harm. We have a chance to restore the island community and we must accept the short-term negative consequences in order to achieve the greatest long-term good.	1	1
33	I support removal of non-native mice from the South Farallon Islands.	4	1
34	Eradicating the introduced mice will be a big step in restoring the natural processes of the island ecosystem. The mice are contributing to the decline of the ash storm-petrels and are likely factors in the native and non-native vegetation community, preferring some species over others.	1	1
35	I support the eradication program; the collateral mortality to gulls and other species is acceptable. There is no evidence of the impacts from brodifacoum to the pelagic ecosystem. There are no other methods to successfully eradicate house mice without extensive damage to fragile habitats.	1	1
36	A better solution is to put pellets into small cages only mice could fit into. Crabs may also fit but their numbers are inexhaustible.	1	3 B
37	Other less toxic rodenticides should be investigated besides brodifacoum	1	2 B,C
38	Use mechanical means to eradicate the mice (traps, predators, birth control) instead of toxins	29	3 B,C

### **Summary of the Comments from the May 17,2011 Scoping Meeting**

#### **Attendee Comments:**

##### **1. Need For Action- Notes and Questions:**

- Mouse sterilization as an alternative to rodenticide. Any option over rodenticide.
- Partner with pesticide manufacturer's to create better/ safer products for eradications.
- Do the studies available confirm the need for this project?
- Make Scoping comments/ any activity from 2006 available to the public.
- Consider other toxicants in pre-project planning studies- can't just evaluate brodifacoum.

##### **2. Environmental Concerns- Notes and Questions:**

- Aerial application: What are the impacts to water/ocean impacts of rodenticide to fish, food web, and marine life?
- How long does rodenticide stay in target animal (persistence in animal/ environment)
- Believes there will be "collateral damage" and secondary uptake
- What if you do nothing?
- What about a less toxic poison?
- What are the safest measures to protect non-target species?
- What studies are you basing your decision on? Make available to the public online.
- Are you aware of failed BUOW translocation attempts? Why not just translocate the owls?
- What are the impacts of the mice on the islands plants
- What is the efficacy of traps?



- What are you doing to control invasive plants?
- What is the amount of rodenticide planned?
- Don't think you can get 100% eradication. Can we provide studies that show success?
- Any studies on rodenticide impacts on amphibians & inverts (provide studies)
- Analyze impacts to passerines
- Incorporate lessons learned from the Rat Island project
- What if we reduce the food source for the mice? Can we discourage the owls?
- What other factors are affecting ASSP (other than mice)? How can we reduce/ respond to these impacts?
- How to reduce impacts to gulls and raptors from secondary uptake?
- Where else do ASSP's breed?
- Include description, life history and threats to the ASSP's
- What are the impacts to the ASSP from WEGU's

### 3. Removal Methods- Notes and Questions:

- What would the duration of exposure to rodenticide be?
- Efforts to remove mice after exposure should be considered to avoid secondary exposure
- Considering hazing of scavengers/ predators to discourage consumption of mice that have been exposed to the Rodenticide
- What is the Half Life of Brodifacoum? How long will it be present in the environment?
- Could something be built that would cause the mice to gather making them easier to collect? (i.e. Strychnine causes rodents to seek out water)
- Concerns about bioaccumulation of rodenticide and stability in environment. ( Would like to see more documentation of the risk level of different compounds)
- What level of success can be guaranteed? (100 % eradication? And what % is considered acceptable?)
- Concerns about what the project will cost
- When would the rodenticide be applied? At peak of the population or at the seasonal low?
- Public safety issues to address: i.e. whale watching boats during the eradication