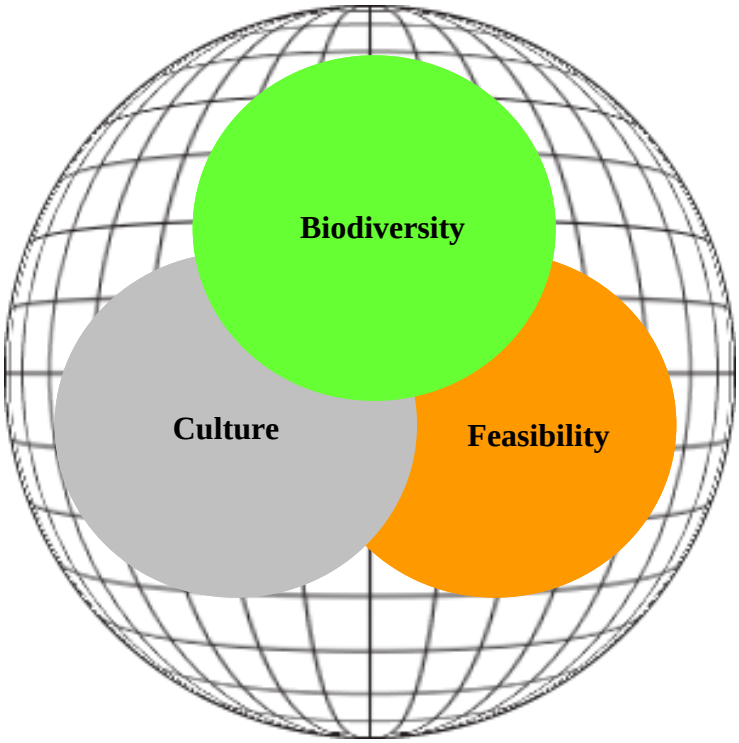
Micronesia Invasive Mammal Eradication Prioritization



Prepared by Island Conservation
For
Micronesia Conservation Trust

November 15, 2007

Correspondence
Island Conservation
Center for Ocean Health
University of California
100 Shaffer Rd, Santa Cruz CA 95060
USA

831-459-1476 (V), 831-459-3383 (F)
alex.wegmann@islandconservation.org

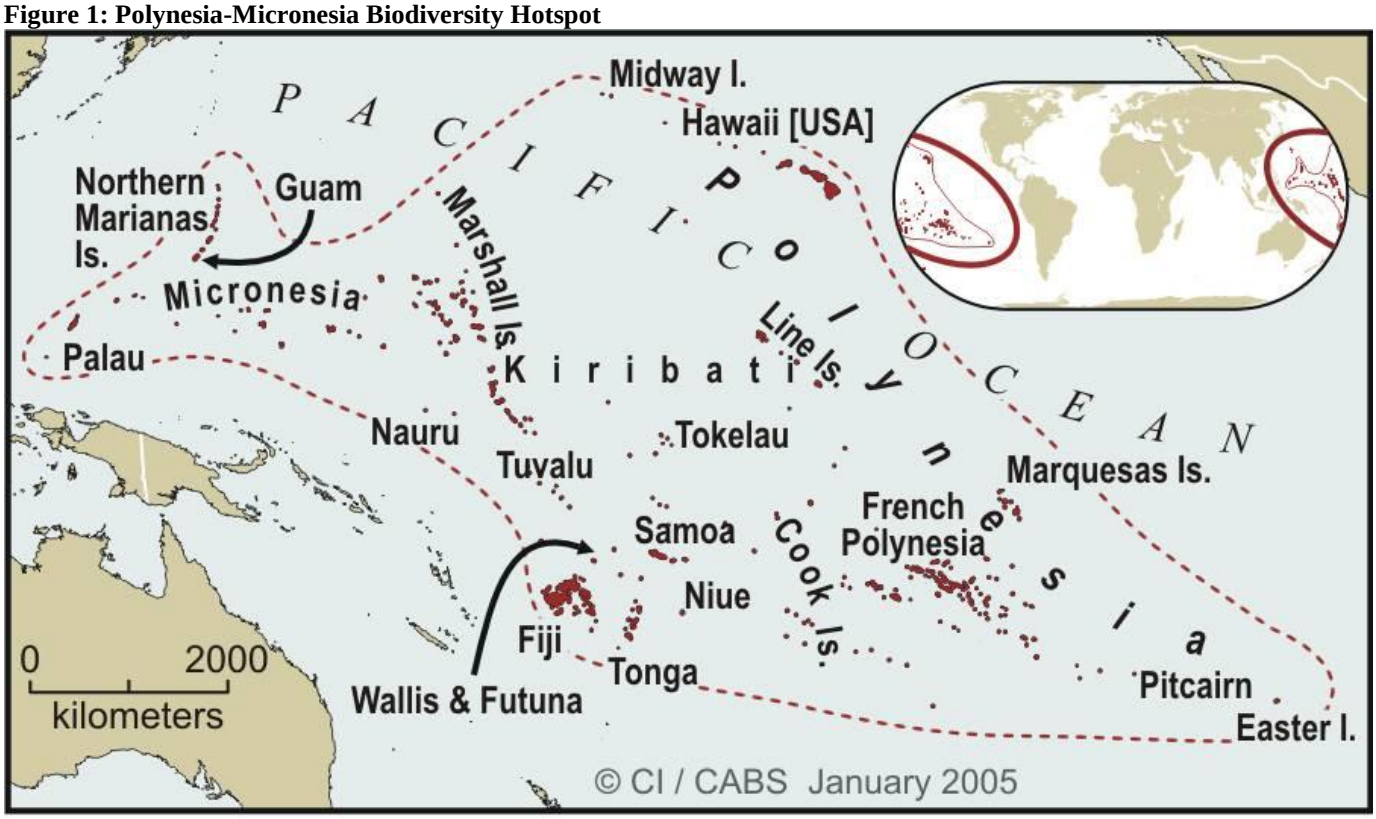
Protecting Micronesia's environment through long-term sustainable funding

Micronesia Invasive Mammal Eradication Prioritization

EXECUTIVE SUMMARY

Since the 1600s, most extinctions have occurred on islands and there is mounting evidence that species invasions are a driving factor in this global loss of biodiversity. The highly endemic and species rich flora and fauna within the Polynesian-Micronesian Biodiversity Hotspot (PMBH) (Figure 1) are no exception to this threat.

Figure 1: Polynesia-Micronesia Biodiversity Hotspot



Approximately three quarters of the globally threatened species in the PMBH are jeopardized by invasive species. Invasive mammals, especially introduced *Rattus* species, have been targeted as the prime cause of biodiversity loss on islands; practical management actions aimed at eliminating the invasive mammal threat to biodiversity in the PMBH warrant global attention and support.

In 2006, the Micronesia Conservation Trust (MCT) received a $200,000 grant to support locally driven invasive mammal eradication efforts in the Republic of Palau (Palau), the Republic of the Marshall Islands (RMI), and the Federated States of Micronesia (FSM). To steer the funding towards regionally important projects, a prioritization process was organized and implemented. Through a competitive application process, MCT selected Island Conservation (IC) as the organization best suited to carry out the prioritization project. IC, a science-driven, nonprofit organization dedicated to preventing extinctions and protecting natural ecological and evolutionary processes on islands, has over 10 years' experience in prioritizing, planning, and conducting invasive mammal eradication projects on islands. IC works

collaboratively with government management agencies, local communities, and other concerned partners in the long-term protection of island ecosystems.

In early 2007, IC partnered with the Conservation Society of Pohnpei (CSP) to conduct a rat eradication research and demonstration project that tested eradication methodologies while providing training in eradication skills to conservation practitioners from Fiji, French Polynesia, Samoa, Guam, and the FSM (Yap, Pohnpei, and Kosrae). Directly following the rat eradication research and demonstration project, IC and CSP hosted an invasive mammal eradication symposium on Pohnpei with presenters from Canada, Ecuador, Fiji, New Zealand, and the US, and attendees from Kosrae, Pohnpei, Yap, Chuuk, Guam, and Palau. The Invasive Mammal Eradication Prioritization is the next step in developing Micronesia's regional approach to biodiversity preservation.

The objectives of the Micronesia Invasive Mammal Eradication Prioritization are two-fold: 1) to inform the conservation community about the feasibility of, and opportunity for, invasive mammal eradications throughout Micronesia, and 2) to identify, from all potential projects in Palau, the FSM, and the RMI, the top 20 invasive mammal eradication opportunities that combine large biodiversity gain with high feasibility, social benefit, local support, and regional capacity building.

To meet the above objectives, IC worked with NGOs and government agencies to compile a region-wide database of biodiversity, invasive species, island geophysical, and socio-cultural values pertinent to invasive mammal eradication programs.

In total, 1402 eradication projects were scored on 25 criteria – reduced to 6 primary factors – and ranked by a weighted, linear mathematical model that emphasizes criteria scores directly related to biodiversity and eradication feasibility.

This prioritization project produced 2 products: 1) a list of the regional top 20 invasive mammal eradication projects that are expected to provide the greatest biodiversity value at a feasibility level that matches the region's current capacity to support and carry out such projects, and 2) country specific invasive mammal eradication prioritization packets that will facilitate subsequent project building and fundraising actions. The submission of this report and the prioritized list of the top 20 regional invasive mammal eradication projects will be followed by MCT's call for invasive mammal eradication project proposals from regional conservation partners. MCT's science committee will review and approve and allocate funds to project proposals based on their ability to address the primary factors encompassed by this prioritization process.

Our prioritization model considered a total of 1402 invasive mammal eradications in 79 project areas: 934 eradications in the RMI, 15 eradications in Kosrae, 172 eradications in Pohnpei, 88 eradications in Yap, and 193 eradications in Palau. In all, 63 different invasive species syndromes were considered, yet rat eradications generally ranked higher than other syndromes due to the known biodiversity benefit of removing rats from island ecosystems, and the existing, extensive rat eradication knowledgebase that future projects can draw from. The top 20 ranked projects include island groups in the RMI, FSM (Yap and Pohnpei), and Palau.

While this prioritization process is both comprehensive and robust within the boundaries of the aforementioned limitations, the true strength of this project lies in the compilation and organization of a regional perspective on the eradication of invasive mammals from islands in Micronesia.

TABLE OF CONTENTS

EXECUTIVE SUMMARY **2**

Figure 1: Polynesia-Micronesia Biodiversity Hotspot *2*

TABLE OF CONTENTS **4**

INTRODUCTION **5**

Table 1: Primary contributors to the Micronesia Invasive Mammal Eradication Prioritization Project *6*

METHODS **7**

STUDY SITE 7

Figure 2. Geographic depiction of region within the PMBH in which invasive mammal eradication projects were prioritized *8*

PROJECT AREA VISITS 8

DATA COLLECTION AND CRITERIA SELECTION 8

PROJECT ITERATIONS 9

PRIORITIZATION MODEL: CRITERIA AND PROJECT RANKING 9

Figure 3: Prioritization model primary factors (center circles) with contributing criteria (outer circles) *10*

RESULTS **10**

Table 3: Top 20 projects *11*

Table 4: Top 20 projects including only the top ranking eradication scenario for each island group *11*

DISCUSSION ..... ERROR! BOOKMARK NOT DEFINED.

PROJECT RANKING RESULTS 11

THE NEXT STEP 11

PRIORITIZATION MODEL STRENGTHS AND WEAKNESSES 12

ACKNOWLEDGEMENTS **12**

REFERENCES **14**

APPENDIX A-1: INVASIVE MAMMAL ERADICATION PROJECTS CONSIDERED BY THE PRIORITIZATION PROCESS **15**

APPENDIX A-2: INVASIVE MAMMAL ERADICATION PROJECTS CONSIDERED BY THE PRIORITIZATION PROCESS **17**

APPENDIX A-3: INVASIVE MAMMAL ERADICATION PROJECTS CONSIDERED BY THE PRIORITIZATION PROCESS **18**

APPENDIX A-4: INVASIVE MAMMAL ERADICATION PROJECTS CONSIDERED BY THE PRIORITIZATION PROCESS **19**

APPENDIX B: SOCIO-CULTURAL CRITERIA SCORING SHEETS USED TO ASSIGN NUMERIC VALUES TO SOCIAL TRENDS AND HUMAN RESOURCE USE PATTERNS **20**

APPENDIX C: COUNTRY BASED BIBLIOGRAPHY OF RESOURCES USED IN ACQUIRING VALUES FOR THE PRIORITIZATION CRITERIA **23**

APPENDIX D: CRITERIA USED IN THE PRIORITIZATION MODEL **25**

INTRODUCTION

Since the 1600s, most extinctions have occurred on islands (95% of bird extinctions, 90% of reptiles, 69% of mammals and 68% of plants) (IUCN 2007), and there is mounting evidence that species invasions are a driving factor in this global loss of biodiversity (Blackburn et al. 2004, Croll et al. 2005, Fukami et al. 2006). The highly endemic and species rich flora and fauna on islands within the Polynesian-Micronesian Biodiversity Hotspot (PMBH) (Executive Summary; Figure 1) are critically threatened by habitat loss and invasive species(Conservation-International 2007) .

Approximately three quarters of the globally threatened species scientifically identified in the PMBH are jeopardized by invasive species(Conservation-International 2007). However, this threat is not uniform throughout the Hotspot in that invasive species communities and the severity of their impact varies from island to island and from archipelago to archipelago. Invasive mammals, especially introduced *Rattus* species, have been targeted as the prime cause of biodiversity loss on islands(Nogales et al. 2006, Howald et al. 2007); pragmatic management actions aimed at eliminating the invasive mammal threat to biodiversity in the PMBH warrant global attention and support..

In 2006, the Micronesia Conservation Trust (MCT) received a $200,000 grant to support locally driven invasive mammal eradication efforts. The intention of this grant is to catalyze or continue invasive species management in the Republic of Palau (Palau), the Republic of the Marshall Islands (RMI), and the Federated States of Micronesia (FSM).

Due to the limited funding, a prioritization process was organized and implemented prior to calling for invasive mammal eradication project proposals from local conservation organizations. The prioritization process will: 1) ensure that available funds are used to implement projects identified as regional top priorities; and 2) provide a product—a prioritized list of invasive mammal eradication projects—that each country and the region as a whole can use to seek subsequent funding to support successive invasive mammal eradications.

Through a competitive application process, the MCT board of Trustees selected Island Conservation as the organization best suited to carry out the prioritization project. Island Conservation (IC), a science-driven, nonprofit organization dedicated to preventing extinctions and protecting natural ecological and evolutionary processes on islands, has over 10 years' experience in prioritizing, planning, and conducting invasive mammal eradication projects on islands. IC works collaboratively with government management agencies, local communities, and other concerned partners in the long-term protection of island ecosystems. IC and its partners have conducted over 40 invasive animal eradication projects on islands and is currently planning, conducting, or collaborating on projects in Western Mexico, California, Washington, Alaska, Hawaii, Palmyra Atoll, British Columbia, Turks & Caicos, the British Virgin Islands, the FSM, and Palau.

The objectives of the Micronesia Invasive Mammal Eradication Prioritization Project are:

1. To inform the conservation community and subsequently the public about the feasibility of, and opportunity for, invasive mammal eradications throughout Micronesia.

2. To gain consensus from key government agencies and NGOs in Palau, FSM, and the RMI on the criteria used to select the top 20 eradication opportunities, and the best order in which to conduct these eradications to build technical capacity and achieve economies of scale.

To meet the above objectives, IC worked with government agencies and NGOs (Table 1) to compile a region-wide database of biodiversity, invasive species, island geophysical, and social and cultural values pertinent to invasive mammal eradication programs. Our partners (Table 2) validated the criteria used to select, identify, and rank eradication opportunities.

The two products from this process are: 1) a list of the regional top 20 invasive mammal eradication projects that are expected to provide the greatest biodiversity value at a feasibility level that matches the region's current capacity to support and carry out such projects, and 2) country specific rankings of delivered to the contributed partners and packaged in a format that will facilitate use of the prioritization database for project building or fundraising actions. The submission of this report and the prioritized list of the top 20 regional invasive mammal eradication projects will be followed by MCT's call for invasive mammal eradication project proposals from regional conservation partners. MCT's science committee will review and approve top ranked projects based on biodiversity value, feasibility, and capacity building potential.

Table 1: Primary contributors to the Micronesia Invasive Mammal Eradication Prioritization Project

Primary Contributor	***Role***	***Organizational Affiliation***
Alan Saunders	Project Advisory Team	Pacific Invasives Initiative
Albon Ishida	Project Facilitator	Marshall Islands Marine Resources Authority
Alex Wegmann	Project Manager	Island Conservation
Andy George	Project Facilitator	Kosrae Conservation and Safety Organization
Angus Parker	Chief Financial Officer (prior)	Island Conservation
Bernie Tershy	Program Director	Island Conservation
Bill Nagle	Project Advisory Team	Pacific Invasives Initiative
Bill Raynor	Project Advisory Team	The Nature Conservancy - Pohnpei
Brian Vander Velde	Data Contributor	Private - RMI
Caleb McClennen	GIS Technician	Marshall Islands Marine Resources Authority
Charles Chieng	Project Facilitator	Yap Community Action Program
Chris Swenson	Project Advisory Team	US Fish and Wildlife Service
Deborah Barker	Project Facilitator	Office of Environmental Policy and Compliance - RMI
Don Buden	Data Contributor	College of Micronesia - Pohnpei
Don Croll	Science Director	Island Conservation
Earl Campbell	Project Advisory Team	US Fish and Wildlife Service
Gregg Howald	Project Supervisor	Island Conservation
Joel Miles	Project Facilitator	Office of Environmental Response and Coordination - Palau
Lisa Ranahan Andon	Project Facilitator	Micronesia Conservation Trust
Lukes Isechal	Project Facilitator	Palau Conservation Society
Margie Falanruw	Data Contributor	Yap Institute of Natural Science
Mimi Diorio	GIS Expert	NOAA
Nancy Vander Velde	Data Contributor	Private - RMI
Nick Early	GIS Technician	Island Conservation
Patterson Shed	Project Facilitator	Conservation Society of Pohnpei
Steve Why	Project Facilitator	Marshall Islands Conservation Society
Tiare Holm	Project Facilitator	Palau Conservation Society
Fleming Umiich Sengebau	Data Contributor	The Nature Conservancy - Palau
Vanessa Fread	Project Facilitator	Yap Community Action Program
Willy Kostka	Project Advisory Team	Micronesia Conservation Trust

The following timeline follows IC's implementation of the prioritization process.

11/06 – 5/07

- Review ongoing conservation initiatives focused on introduced mammals in local jurisdictions
    - Review PII-supported feasibility projects in the region
    - Engage local agencies to understand applicable laws, policies, and regulations pertaining to invasive mammals in Palau, the FSM, and the RMI
- Compile available key geographic data for all islands

5/07 – 9/07

- Conduct on-site stakeholder workshops with key representatives from government agencies and NGOs involved in conservation and invasive species management to select criteria and gather values for the prioritization database

9/07 – 11/07

- Finalize prioritization database and construct prioritization model
- Generate the list of top 20 regional invasive mammal eradication projects
- Generate country specific prioritized lists of invasive mammal eradication projects
- Submit the final report to MCT.

METHODS

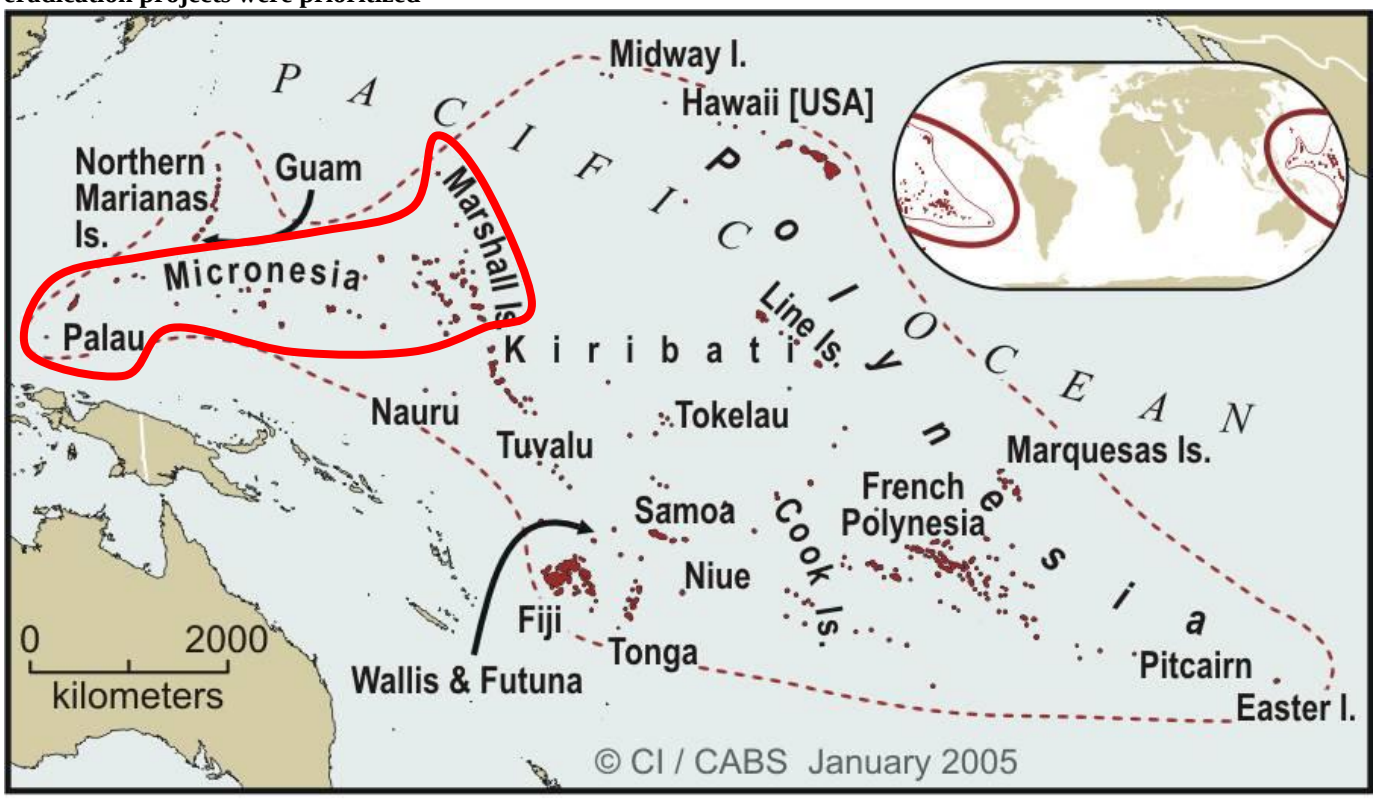
Study Site

This invasive mammal eradication prioritization process focused on three countries in the Micronesian region of the tropical western Pacific: RMI, FSM, and Palau (Figure 2). The study area is embedded in the PMBH which includes all the islands of Micronesia and Polynesia, plus Fiji, scattered across 40 million km² of the Pacific Ocean. The islands included in this study are spread across a geologic gradient that ranges from small rocky islets to low-lying coral atolls to uplifted limestone islands to larger, higher volcanic islands such as Kosrae, Pohnpei, Weno, the Yap-Maap-Gagil-Tamil complex, and Babeldaob. The larger islands support most of the human population in the region.

A wide range of ecosystems are found throughout the study area, including 12 principal vegetation biomes: coastal strand vegetation, mangrove forests, coastal wetlands, tropical rainforests, cloud forests, savannas, open woodlands, and shrublands (Mueller-Dombois and Fosberg 1998).

The study units for this prioritization process are independent, potential invasive mammal eradication projects. With exception of the Yela Forest project on Kosrae - FSM, all study units (hereafter referred to as "projects") consist of single or grouped islands, with the grouped islands usually in an atoll formation. Kosrae's Yela forest, which encompasses costal and mountain systems is the last, remnant stand of *Terminalia crolinensis* – an ecologically and culturally important species – in the world. Because of its conservation value, we include the Yela forest area in the prioritization process as an inland island and understand that any eradication action on Yela will require the instillation of a peripheral excluder fence. Projects vary in area, topography, invasive species presence, biodiversity, and socio-cultural climate. Refer to Appendix A for a complete list of projects included in this study.

Figure 2. Geographic depiction of the region within the PMBH in which invasive mammal eradication projects were prioritized



Project Area Visits

Project area visits were conducted in the RMI, four states within the FSM (Kosrae, Pohnpei, Chuuk, and Yap), and Palau. With the exception of Chuuk[1], project area visits consisted of an open, informational meeting led by project manager A. Wegmann and hosted by the project facilitators listed in Table 1, and subsequent one-on-one meetings with conservation organizations and key individuals. During the informational meetings, A. Wegmann gave a detailed descriptions of the prioritization project and the related funding opportunity, and fielded questions from attendees. Through the one-on-one meetings, a project area point-of-contact person was identified and further data acquisition requests were channeled through this individual.

Data Collection and Criteria Selection

The prioritization database was populated with criteria values gathered from GIS basemaps, a review of the available literature, and standardized questionnaires. Project area GIS basemaps were combed for values to satisfy the geophysical criteria, and biodiversity values were acquired through examination of the relevant peer-reviewed and gray literature, and from interviews with local resource

[1] The project area visit to Chuuk did not result in a meeting with members of the conservation community, and we were unable to acquire the necessary information to include Chuuk in the prioritization process; therefore, projects within Chuuk State are not included in the ranked project list.

managers. Values for social and cultural criteria were supplied by primary contributors and associated parties (Table 1) by way of standardized scoring worksheets (Appendix B).

The initial list of criteria was developed prior to the implementation of the data gathering process, and then ground-truthed during the project area visits. The refined list of criteria was then validated by primary contributors prior to the release of the standardized questionnaires. Local conservation practitioners scored the social and cultural criteria and provided information that aided in scoring the biodiversity criteria, while Island Conservation personnel gathered data from the available literature and GIS analysis to satisfy the remaining criteria. It was our original intent to use the total numbers of terrestrial plants, reptiles, and birds, along side a ranking system based on the presence of IUCN classified "Vulnerable," "Endangered," or "Critically Endangered" species to define the biodiversity primary factor. Yet, the availability of information on numbers of plant and reptile species was not consistent for all island groups; therefore, this prioritization process does not recognize plant and reptile contributions to the biodiversity of the project areas. All sources for criteria values are presented in Appendix C.

Project Iterations

All project areas host more than one invasive mammal species, as do most islands. To accommodate the reality that a single eradication project[2] can target multiple invasive species, all possible invasive species iterations for each project were treated as separate projects in the database. For example, if island group X hosts rats, cats, and dogs, the following 7 invasive species iterations will be treated as independent eradication projects: rats; cats; dogs; rats-cats; rats-dogs, cats-dogs, rats-cats-dogs.

Prioritization Model: Criteria and Project Ranking

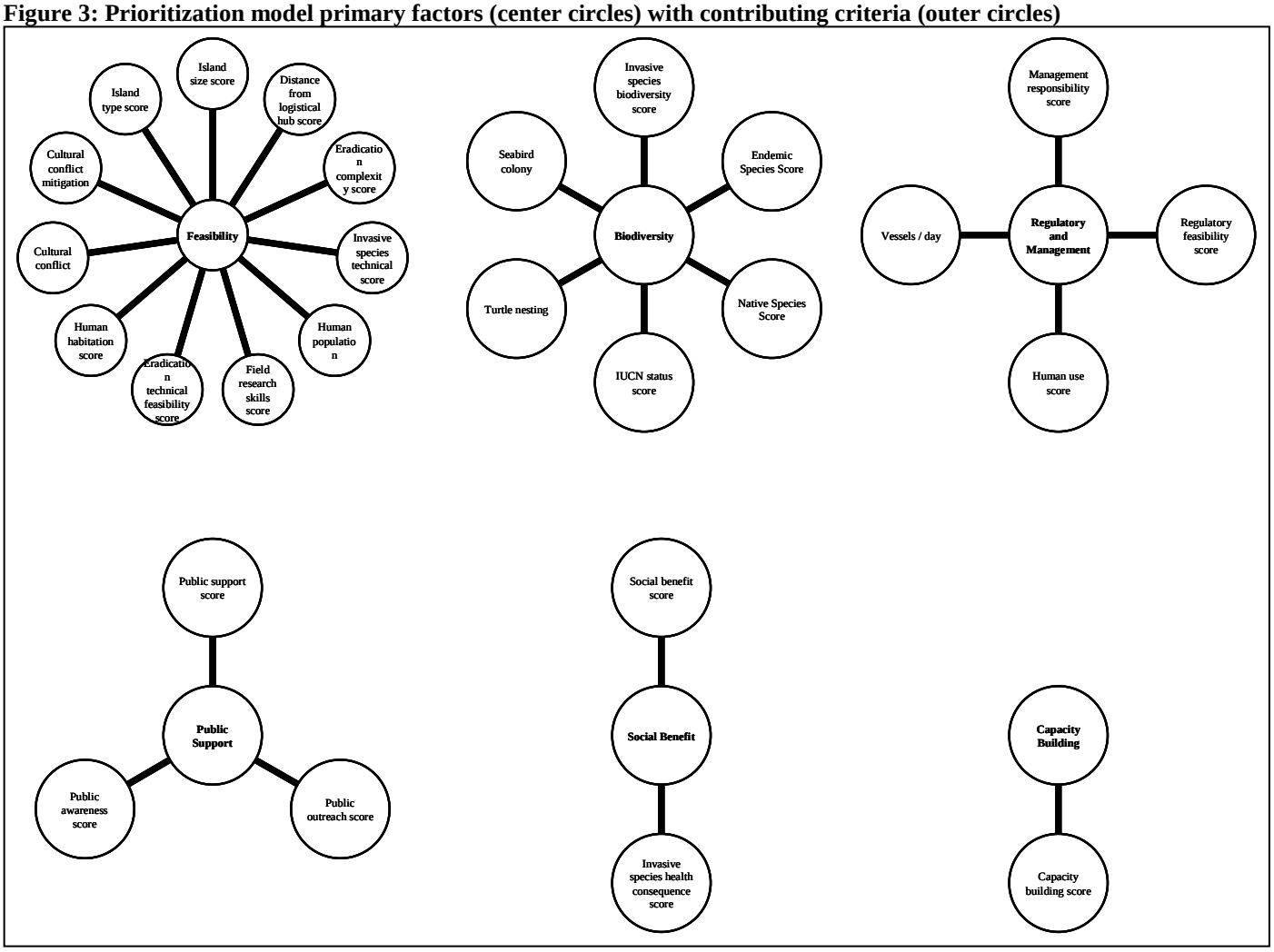
The prioritization model employed in this project combines values assigned to criteria on a project by project basis, and derives a final score for each project. We used a weighted, linear mathematical model to sum the values from 25 criteria - reduced to 6 primary factors (Figure 3) - to produce a final score for each potential eradication project. The criteria cover geophysical, biodiversity, feasibility, technical, social, economic, health, and cultural factors. While the prioritization scheme involves all of the above factors, biodiversity and feasibility scores were heavily weighted. To incorporate emphasis into the model, we weighted the quantitative responses to all 25 criteria by multiplying the score by 1[3], 5 or 10. This weighting scheme allows the potential score-difference to be greater for certain biodiversity or feasibility criteria and allows such criteria to be more predictive than non-biodiversity and non-feasibility criteria. All of the criteria along with the scoring and weighting program used in the prioritization are presented in Appendix D.

Project ranking was achieved by sorting the projects from highest final score to lowest final score. While responses to the socio-cultural criteria certainly influence the ranking outcome, the weighting scheme ensures that feasible projects with high biodiversity benefit rise to the top of the list.

[2] A "project" can be a single island or group of associated islands – association between islands is assumed if the dividing water distance is less than 1 kilometer.

[3] A weighting of "x1" indicates that the criteria score was incorporated into the model without additional emphasis

Figure 3: Prioritization model primary factors (center circles) with contributing criteria (outer circles)



RESULTS

The prioritization model considered 1402 invasive mammal eradications in 79 project areas: 934 eradications in the RMI, 15 eradications in Kosrae, 172 eradications in Pohnpei, 88 eradications in Yap, and 193 eradications in Palau, and a total of 63 different invasive species syndromes were considered (Appendix A).

Projects ranked according to their final score form a hierarchy of criteria scores that reflects the information fed to the prioritization model. The weighting scheme incorporated in the linear model emphasized high and low scores for criteria attached to the primary factors: biodiversity, and feasibility (Figure 3). The top 20 ranked projects are listed in Table 3. This list includes 12 single-species eradication projects and 8 multi-species eradication projects in Palau, the FSM (Pohnpei and Yap), and the RMI, and represents 12 island groups. Table 4 presents the top 20 projects with only the highest ranking project per island group included. This ranking scheme includes 18 single-species and 2 multi-species eradication projects in Palau, the FSM (Pohnpei and Yap), and the RMI, and represents 20 island groups.

Table 3: Top 20 projects

Project Rank	*Country*	*Island Group Name*	*Invasive Mammal Eradication*
1	Palau	Fana	Rat
2	Palau	Ulong Group	Rat
3	Palau	Ngerukuid Group	Rat
4	Palau	Ngemelis Group	Rat
5	Palau	Melieli (Merir)	Rat
6	Palau	Tobi	Rat-Pig
7	Palau	Tobi	Rat-Pig-Dog
8	FSM-Pohnpei	Ant	Rat-Pig
9	Palau	Tobi	Rat
10	FSM-Pohnpei	Ant	Rat
11	FSM-Pohnpei	Ant	Rat-Pig-Cat
12	Palau	Tobi	Rat-Dog
13	Palau	Ngarchelong Group	Rat
14	Palau	Ngercheu Group	Rat
15	Marshall Islands	Jemo	Rat
16	FSM-Yap	Ngulu Group	Rat
17	FSM-Pohnpei	Ant	Rat-Cat
18	FSM-Yap	Ngulu Group	Rat-Pig
19	Marshall Islands	Jemo	Rat-Pig
20	Palau	Helen	Dog

Table 4: Top 20 projects including only the top ranking eradication scenario for each island group Error! Not a valid link.

Project ranking results

Tables 3 and 4 display the projects that scored highest in the following features: expected biodiversity return from an successful eradication project, ease of eradication implementation, social benefit, community support, and regional capacity building. Both ranking schemes, with and without island group repetition, promote a pragmatic regional approach to invasive mammal eradications by emphasizing single-species projects on smaller islands. The second ranking scheme (Table 4) is included in this report to provide MCT with the option of requesting funding proposals from more several top ranked projects that are not included in table 3. The additional projects in Table 4 do not decrease the overall group quality as the score difference between the 20th ranked project in Table 3, and the 20th ranked project in table 4 is 7 points, or 0.08% off of the highest ranked project[4]

In all, 63 different invasive species syndromes were considered, yet rat eradications generally ranked higher than other syndromes. The prioritization of rat eradications is linked to the known, strong biodiversity benefit of removing rats from island ecosystems(Fukami et al. 2006), and the extensive rat eradication knowledgebase(Howald et al. 2007) that future projects can draw from.

The next step

The completion of this prioritization process leads to the initiation of the project funding component of this invasive mammal eradication initiative. MCT will call for invasive mammal

[4] Palau's Fana Island – rat eradication – is the highest ranking project with 865 of 1025 possible points

eradication project proposals from regional conservation partners affiliated with project areas (island groups) ranked 1 to 20. MCT's science committee will review proposals and allocate funds to projects based on the proposal's ability to address the primary factors utilized by this prioritization process (Table 3). In addition to the call for proposals and subsequent funding action, country specific invasive mammal eradication prioritization packets, including the country's complete prioritization database, an annotated report, and a document describing how to use and adjust the prioritization model's weighting scheme to produce alternative priority themes[5], will be made available to the RMI, FSM, and Palau.

Prioritization model strengths and weaknesses

The strength and validity of any prioritization output is determined by: 1) the degree to which the criteria encompass the reality of the process under study, and 2) the quality of the values input into the model. The Micronesia Invasive Mammal Eradication Prioritization criteria cover most if not all foundational aspects of eradicating invasive mammals from islands[6]. Because current species accounts, synchronized GIS basemaps, and survey derived social and cultural values were not uniformly available or achievable within the scope of this project, we relied on both historic and recent species lists, island geographic information derived from several distinct GIS databases, and subjective social and cultural values supplied by NGO and government agency partners to account for the variety of environmental, biological, cultural, and regulatory factors of all 79 project areas (Appendices A1 to A4), and to ensure that the information available for each project area provided scores for all 25 criteria (Appendix C). While this prioritization process is both comprehensive and robust within the boundaries of the aforementioned limitations, the true strength of this project lies in the compilation and organization of a regional perspective on the eradication of invasive mammals from islands in Micronesia.

ACKNOWLEDGEMENTS

We graciously thank all of the key individuals who organized stakeholder meetings, provided data, and hosted our project manager during the country visits: (RMI) Albon Ishida, Steve Why, Deborah Barker Nancy Vander Velde, and Brian Vander Velde; (Kosrae) Andy George and Wayne Law; (Pohnpei) Patterson Shed, Roseo Marquez, Willy Kostka, Lisa Andon, and Don Buden; (Yap) Charles Chieng, Vanessa Fread, Christina Fillmed, and Margie Falanruw; (Palau) Joel Miles, Tiare Holm, Lukes Isechal, Yalap Yalap, Fleming Umiich Sengebau, and Sarah Klain; and (NOAA) Mimi Diorio. We also extend our thanks to the following organizations for their varied and many contributions to this project: Marshall Island Conservation Society, Office of Environmental Policy and Compliance – RMI, Kosrae Conservation and Safety Organization, Conservation Society of Pohnpei, Pohnpei Invasive Species Taskforce, College of Micronesia – Pohnpei Campus, Yap Community Action Committee, Yap State Environmental Protection Agency, Palau's Office of Environmental Response and Coordination, Palau National Invasive Species Council, Palau Conservation Society, Micronesian Conservation Trust, Micronesians in Island Conservation, The Nature Conservancy, Pacific Invasives Initiative, and The US

[5] This eradication emphasized biodiversity and feasibility; the model's weighting scheme can easily be shifted to produce prioritized themes that emphasize public support, or social benefit, or feasibility and not biodiversity, etc.

[6] Eradication cost was intentionally excluded from this prioritization process as this aspect will be addressed after MCT issues a call for eradication proposals for projects that rank in the top 20.

Fish and Wildlife Service. Finally, we would like to extend sincere gratitude to the fine businesses and organizations that contributed to this regional conservation effort through discounted lodging during the project area visits: The Marshall Islands Resort, The Kosrae Village Resort - Kosrae, The Village Resort – Pohnpei, The Pathways Hotel – Yap, and the Coral Reef Research Foundation – Palau.

REFERENCES

Blackburn, T. M., P. Cassey, R. P. Duncan, K. L. Evans, and K. J. Gaston. 2004. Avian Extinction and Mammalian

Introductions on Oceanic Islands. Science **305**:1955-1956.

Conservation-International. 2007. Ecosystem Profile: Polynesia-Micronesia Biodiversity Hotspot.

Croll, D. A., J. L. Maron, J. A. Estes, E. M. Danner, and G. V. Byrd. 2005. Introduced predators transform subarctic islands from grassland to tundra. Science (Washington D C) **307**:1959-1961.

Fukami, T., D. A. Wardle, P. J. Bellingham, C. P. H. Mulder, D. R. Towns, G. W. Yeates, K. I. Bonner, M. S. Durrett, M. N. Grant-Hoffman, and W. M. Williamson. 2006. Above- and below-ground impacts of introduced predators in seabird-dominated island ecosystems. Ecology Letters **9**:1299-1307.

Howald, G., J. C. Donlan, J. P. Galvan, J. Russell, J. Parkes, A. Samaniego, Y. Wang, d. Veitch, P. Genovesi, M. Pascal, A. Saunders, and B. Tershy. 2007. Invasive rodent eradications on islands. Conservation Biology **In Press**.

IUCN. 2007. 2007 IUCN Red List of Threatened Species.

Mueller-Dombois, D., and F. R. Fosberg. 1998. Vegetation of the Tropical Pacific Islands. Springer Press, New York.

Nogales, M., J. L. Rodriguez-Luengo, and P. Marrero. 2006. Ecological effects and distribution of invasive non-native mammals on the Canary Islands. Mammal Review **36**:49-65.

APPENDIX A-1: Invasive mammal eradication projects considered by the prioritization process

Country	*Island Group Name*	*Cat*	*Cat-Shrew*	*Dog*	*Dog-Cat*	*Dog-Cat-Shrew*	*Dog-Shrew*	*Mouse*	*Mouse-Cat*	*Mouse-Dog*	*Mouse-Dog-Cat*	*Mouse-Pig*	*Mouse-Pig-Cat*	*Mouse-Pig-Dog*	*Mouse-Pig-Dog-Cat*	*Pig*	*Pig-Cat*	*Pig-Cat-Shrew*	*Pig-Dog*	*Pig-Dog-Cat*	*Pig-Dog-Shrew*	*Pig-Shrew*	*Rat*	*Rat-Cat*
FSM-Kosrae	Yela Forest Reserve	x		x	x											x	x		x	x			x	x
FSM-Pohnpei	Ant	x														x	x						x	x
	Kapingamarangi	x		x	x											x	x		x	x			x	x
	Mokil	x		x	x											x	x		x	x			x	x
	Nukuoro	x		x	x											x	x		x	x			x	x
	Oroluk	x		x	x											x	x		x	x			x	x
	Pakin	x		x	x											x	x		x	x			x	x
	Pingelap	x		x	x											x	x		x	x			x	x
	Pohnpei-Lenger	x		x	x											x	x		x	x			x	x
	Pohnpei-Mwand	x		x	x											x	x		x	x			x	x
	Pohnpei-Nahlap	x		x	x											x	x		x	x			x	x
	Pohnpei-Parahm	x		x	x											x	x		x	x			x	x
	Sapwuahfik	x		x	x											x	x		x	x			x	x
FSM-Yap	Ngulu Group	x		x	x											x	x		x	x			x	x
	Ulithi-Asor	x		x	x			x	x	x	x	x	x	x	x	x	x		x	x			x	x
	Ulithi-Fassarai	x		x	x											x	x		x	x			x	x
	Ulithi-Iau																						x	
	Ulithi-Ieu																						x	
	Ulithi-Iyor																						x	
	Ulithi-Manyang																						x	
	Ulithi-Mogmog	x		x	x											x	x		x	x			x	x
	Ulithi-Pierros																						x	
	Ulithi-Pig																						x	
	Ulithi-Pigelelei																						x	
	Ulithi-Sogloy	x																					x	x
	Ulithi-Song															x							x	
Marshall Islands	Ailinginae	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Ailinglaplap	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Ailuk	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Arno	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Aur	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Bikar	x																					x	x
	Bikini	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Bokak	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Ebon	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Enewetak	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Erikub	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Jabot	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Jaluit	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Jemo	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Kili	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Kwajelein	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Lae	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Lib	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Likiep	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Majuro	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Maloelap	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Mejit	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Mili	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Nadikdik	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Namorik	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Namu	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Rongelap	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x

Country	Island Group Name	Cat	Cat-Shrew	Dog	Dog-Cat	Dog-Cat-Shrew	Dog-Shrew	Mouse	Mouse-Cat	Mouse-Dog	Mouse-Dog-Cat	Mouse-Pig	Mouse-Pig-Cat	Mouse-Pig-Dog	Mouse-Pig-Dog-Cat	Pig	Pig-Cat	Pig-Cat-Shrew	Pig-Dog	Pig-Dog-Cat	Pig-Dog-Shrew	Pig-Shrew	Rat	Rat-Cat
Marshall Islands (cont.)	Rongerik	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Taka	x																					x	x
	Ujae	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Ujelang	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Utrik	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Wotho	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Wotje	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x

APPENDIX A-2: Invasive mammal eradication projects considered by the prioritization process

Country	*Island Group Name*	*Cat*	*Cat-Shrew*	*Dog*	*Dog-Cat*	*Dog-Cat-Shrew*	*Dog-Shrew*	*Macaque*	*Macaque-Cat*	*Macaque-Cat-Shrew*	*Macaque-Dog*	*Macaque-Dog-Cat*	*Macaque-Dog-Shrew*	*Macaque-Pig*	*Macaque-Pig-Cat*	*Macaque-Pig-Dog*	*Macaque-Pig-Shrew*	*Macaque-Shrew*	*Mouse*	*Mouse-Cat*	*Mouse-Dog*	*Mouse-Dog-Cat*	*Mouse-Pig*	*Mouse-Pig-Cat*	*Mouse-Pig-Dog*	*Mouse-Pig-Dog-Cat*	*Pig*	*Pig-Cat*	*Pig-Cat-Shrew*	*Pig-Dog*	*Pig-Dog-Cat*	*Pig-Dog-Cat-Shrew*	*Pig-Dog-Shrew*	*Pig-Shrew*	*Rat*	*Rat-Cat*
Palau	Angaur Group	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Babeldoab Group	x		x	x														x	x	x	x	x	x	x	x	x	x		x	x			x	x
	Dongosaro (Sonsorol)	x		x	x																						x	x		x	x			x	x
	Fana																																	x	
	Helen			x																															
	Kayangel Atoll	x		x	x														x	x	x	x	x	x	x	x	x	x		x	x			x	x
	Koror Group																																	x	
	Melieli (Merir)																																	x	
	Ngarchelong Group																																	x	
	Ngemelis Group																																	x	
	Ngercheu Group																																	x	
	Ngeruchubtang Group																																	x	
	Ngeruktabel/Mecherchar Group	x						x	x																									x	x
	Ngerukuid Group																																	x	
	Peleliu Group	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x									x	x	x	x	x	x	x	x	x
	Puro (Pulo Ana)	x		x	x																													x	x
	Tobi			x																							x			x				x	
	Ulebesechel Group																																	x	
	Ulong Group																																	x	

APPENDIX A-3: Invasive mammal eradication projects considered by the prioritization process

Country	*Island Group Name*	*Rat-Cat-Shrew*	*Rat-Dog*	*Rat-Dog-Cat*	*Rat-Dog-Cat-Shrew*	*Rat-Dog-Shrew*	*Rat-Mouse*	*Rat-Mouse-Cat*	*Rat-Mouse-Dog*	*Rat-Mouse-Pig*	*Rat-Mouse-Pig-Cat*	*Rat-Mouse-Pig-Dog*	*Rat-Mouse-Pig-Dog-Cat*	*Rat-Pig*	*Rat-Pig-Cat*	*Rat-Pig-Cat-Shrew*	*Rat-Pig-Dog*	*Rat-Pig-Dog-Cat*	*Rat-Pig-Dog-Cat-Shrew*	*Rat-Pig-Dog-Shrew*	*Rat-Pig-Shrew*	*Rat-Shrew*	*Shrew*
FSM-Kosrae	Yela Forest Reserve		x	x										x	x		x	x					
FSM-Pohnpei	Ant													x	x								
	Kapingamarangi		x	x										x	x		x	x					
	Mokil		x	x										x	x		x	x					
	Nukuoro		x	x										x	x		x	x					
	Oroluk		x	x										x	x		x	x					
	Pakin		x	x										x	x		x	x					
	Pingelap		x	x										x	x		x	x					
	Pohnpei-Lenger		x	x										x	x		x	x					
	Pohnpei-Mwand		x	x										x	x		x	x					
	Pohnpei-Nahlap		x	x								x		x	x		x						
	Pohnpei-Parahm		x	x										x	x		x	x					
	Sapwuahfik		x	x										x	x		x	x					
FSM-Yap	Ngulu Group		x	x										x	x		x	x					
	Ulithi-Asor		x	x			x	x	x	x	x	x	x	x	x		x	x					
	Ulithi-Fassarai		x	x										x	x		x	x					
	Ulithi-Mogmog		x	x										x	x		x	x					
	Ulithi-Song													x									
Marshall Islands	Ailinginae	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Ailinglaplap	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Ailuk	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Arno	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Aur	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Bikar																						x
	Bikini	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Bokak	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Ebon	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Enewetak	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Erikub	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Jabot	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Jaluit	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Jemo	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Kili	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Kwajelein	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Lae	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Lib	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Likiep	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Majuro	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Maloelap	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Mejit	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Mili	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Nadikdik	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Namorik	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Namu	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Rongelap	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Rongerik	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Taka																						x
	Ujae	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Ujelang	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Utrik	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Wotho	x	x	x	x	x								x	x	x	x		x	x	x	x	x
	Wotje	x	x	x	x	x								x	x	x	x		x	x	x	x	x

APPENDIX A-4: Invasive mammal eradication projects considered by the prioritization process

Country	*Island Group Name*	*Rat-Cat-Shrew*	*Rat-Dog*	*Rat-Dog-Cat*	*Rat-Dog-Shrew*	*Rat-Macaque*	*Rat-Macaque-Cat*	*Rat-Macaque-Dog*	*Rat-Macaque-Pig*	*Rat-Macaque-Pig-Dog-Cat-Shrew*	*Rat-Macaque-Shrew*	*Rat-Mouse*	*Rat-Mouse-Cat*	*Rat-Mouse-Dog*	*Rat-Mouse-Pig*	*Rat-Mouse-Pig-Cat*	*Rat-Mouse-Pig-Dog*	*Rat-Mouse-Pig-Dog-Cat*	*Rat-Pig*	*Rat-Pig-Cat*	*Rat-Pig-Dog*	*Rat-Pig-Dog-Cat*	*Rat-Pig-Shrew*	*Rat-Shrew*	*Shrew*
Palau	Angaur Group	x	x	x	x	x	x	x	x	x	x								x	x	x		x	x	x
	Babeldoab Group		x	x								x	x	x	x	x	x	x	x	x	x	x			
	Dongosaro (Sonsorol)		x	x															x	x	x	x			
	Kayangel Atoll		x	x								x	x	x	x	x	x	x	x	x	x	x			
	Ngeruktabel/Mecherchar Group					x	x																		
	Ngerukuid Group																								
	Peleliu Group	x	x	x	x	x	x	x	x	x	x								x	x	x		x	x	x
	Puro (Pulo Ana)		x	x																					
	Tobi		x																x		x				

APPENDIX B: Socio-cultural criteria scoring sheets used to assign numeric values to social trends and human resource use patterns

Social Readiness Criteria

1) SOCIAL BENEFIT: How strong is the overall social benefit of eradicating any invasive vertebrate(s) from this island?

4 Strong: Definite economic / health benefit to local community from eradication
3 Moderate: Indirect economic / health benefit to local community from eradication
2 Weak: Possible economic / health benefit to local community from eradication
1 Unknown
0 None

2) CULTURAL CONFLICT: Are there any cultural aspects that could lead to public abandonment of an invasive species eradication project on this island, for example: target species is a totem animal, target species figures prominently in cultural legend, target species is kept as a pet, target species is used as a food resource?

0 Yes
1 Unknown
2 No

3) CULTURAL CONFLICT MITIGATION: How practical is mitigation of cultural aspects that could lead to public abandonment of an invasive species eradication project on this island?

2 Possible and easy
1 Possible, but difficult
0 Not Possible

4) PUBLIC OUTREACH: What is the level of effort that has already gone into communicating with the public about an eradication project on this island?

4 Strong
- Informative, project specific weekly radio broadcasts beginning 6 months prior to the project start date,
- Public meetings beginning at least 1 year prior to the project start date,
- Semi-annual meetings with pertinent resource use groups beginning at least 1 year prior to the project start date
- Informative signs placed on island(s) 6 months prior to project start date

3 Moderate
- Informative, project specific weekly radio broadcasts beginning 1 month prior to the project start date,
- Public meetings beginning at least 6 months prior to the project start date,
- One meeting with pertinent resource use groups prior to project start date
- Informative signs placed on island(s) 1 month prior to project start date

2 Weak
- Public meetings beginning at least 3 months prior to the project start date,
- One meeting with pertinent resource use groups prior to project start date
- Informative signs placed on island(s) at start of project

1 Unknown
0 None
- No public outreach effort has been made for this project

5) PUBLIC AWARENESS: Generally, what is the level of public awareness for invasive species issues on this island (as recorded in survey of affected community)?

4 Strong
- 61% - 90% of public is aware of project goals, benefits, and risks

3 Moderate
- 31% - 60% of public is aware of project goals, benefits, and risks

2 Weak
- 0% - 30% of public is aware of project goals, benefits, and risks

1 Unknown

6) PUBLIC SUPPORT: What is the level of public support for an invasive species eradication project on this island?

4 Strong
- 61% - 90% of public is aware and in favor of project goals, benefits, and risks

3 Moderate
- 31% - 60% of public is aware and in favor of project goals, benefits, and risks

2 Weak
- 0% - 30% of public is aware and in favor of project goals, benefits, and risks

1 Unknown

Technical Capacity Criteria

1) ERADICATION TECHNICAL FEASIBILITY: Does the organization(s) that will lead the invasive species eradication on this island have prior experience with eradication projects, and if so, to what extent (size and complexity)?

5 HIGHLY FEASIBLE
- Projects of greater scale and complexity have been completed by local conservation organizations (i.e. size, target species, non-targets)

4 FEASIBLE
- Projects of this scale and complexity have been completed by local conservation organizations

3 POSSIBLY FEASIBLE
- Projects of similar scale and complexity have been attended by local conservation organization staff (i.e. size, target species, non-targets)

2 FEASIBLE WITH ASSISTANCE
- Projects of this scale and complexity have been attempted by others but not local conservation organizations (i.e. size, target species, non-targets)

1 NOT LIKELY FEASIBLE
- Projects of this scale and complexity have not been attempted by anyone globally (i.e. size, target species, non-targets)

2) FIELD RESEARCH SKILLS: Does the organization(s) that will lead the invasive species eradication on this island have prior experience with general biological/conservation focused field research, and if so, to what extent?

4 High
- Lead organization(s) in biological/conservation field research project

3 Moderate
- Cooperating organization(s) in a biological/conservation focused field research project

2 Weak
- Some staff have experience with biological/conservation field research methodologies

1 Unknown

3) REGULATORY FEASIBILITY: What is the regulatory feasibility level for an eradication project on this island?

4 High
- Most staff have experience with local regulatory procedures
- The regulatory path is clear

- Similar permits have been obtained in the past

3 Moderate
- Some staff have experience with local regulatory procedures
- The regulatory path is unclear
- Similar permits have been attempted in the past

2 Unknown

1 Weak
- Current technique illegal

Anthropogenic Effect Criteria

1) MANAGEMENT RESPONSIBILITY

3 Government
2 Private – Single Owner
1 Private – Multiple Owners

2) HUMAN POPULATION

5 0
4 < 50
3 50 < 100
2 100 < 1000
1 > 1000

4) HUMAN HABITATION TYPE

4 Infrequent
3 Frequent – Not Permanent
2 Seasonal
1 Permanent

5) HUMAN USE VALUE (if multiple use, go with highest ranking use value)

3 Subsistence Gathering Area
2 Conservation Area
2 Cultural Area
1 Recreational Area

6) VESSELS / DAY WITHIN 100 m OF ISLAND (or Island Group)

4 0
3 < 5
2 5 < 10
1 > 10

APPENDIX C: Country based bibliography of resources used in acquiring values for the prioritization criteria

Country	*Topic*	*Source*
FSM - Chuuk	Birds	Avibase - Bird Checklists of the World http://www.bsc-eoc.org/avibase Falanruw, M. C. 2002. Terrestrial Biodiversity of the Federated States of Micronesia. Pratt, H. D., P. L. Bruner, and D. G. Berrett. 1987. The Birds of Hawaii and the Tropical Pacific. Princeton University Press, New Jersey.
	Island geographic values	TNC GIS Database (c/o Bill Raynor)
FSM - Kosrae	Birds	Avibase - Bird Checklists of the World http://www.bsc-eoc.org/avibase Falanruw, M. C. 2002. Terrestrial Biodiversity of the Federated States of Micronesia. Pratt, H. D., P. L. Bruner, and D. G. Berrett. 1987. The Birds of Hawaii and the Tropical Pacific. Princeton University Press, New Jersey.
	Human population	Supplied by local partners
	Invasive species	Supplied by local partners
	Island geographic values	TNC GIS Database (c/o Bill Raynor)
	Social and cultural values	Supplied by local partners
FSM - Pohnpei	Birds	Avibase - Bird Checklists of the World http://www.bsc-eoc.org/avibase Buden, D. W. 1995. Reptiles, birds, and mammals of Mokil and Pingelap Atolls, Eastern Caroline Islands. Micronesica 28:9-23. Buden, D. W. 1996a. Reptiles, birds and mammals of Ant Atoll, Eastern Caroline Islands. Micronesica 29:21-36. Buden, D. W. 1996b. Reptiles, birds, and mammals of Pakin Atoll, Eastern Caroline Islands. Micronesica 29:37-48. Buden, D. W. 1998. The birds of Kapingamarangi Atoll, including first record fo the Shining Cuckoo (*Chrysococcyx lucidus*) from Micronesia. Notornis 45:141-153. Buden, D. W. 1999a. The birds of Sapwuahfic Atoll, with first record fo the Grey Wagtail, *Motacilla cinerea*, from the Federated States of Micronesia. Bulletin of the British Ornithologists's Club 119:261-270. Buden, D. W. 1999b. Reptiles, Birds, and Mammals of Oroluk Atoll, Eastern Caroline Islands. Micronesica 31:289-300. Falanruw, M. C. 2002. Terrestrial Biodiversity of the Federated States of Micronesia. Pratt, H. D., P. L. Bruner, and D. G. Berrett. 1987. The Birds of Hawaii and the Tropical Pacific. Princeton University Press, New Jersey.
	Human population	Supplied by local partners
	Invasive species	Supplied by local partners
	Island geographic values	TNC GIS Database (c/o Bill Raynor)
	Social and cultural values	Supplied by local partners
FSM - Yap	Birds	Avibase - Bird Checklists of the World http://www.bsc-eoc.org/avibase Falanruw, M. C. 2002. Terrestrial Biodiversity of the Federated States of Micronesia.

Country	*Topic*	*Source*
FSM – Yap (cont.)	Birds (cont.)	Pratt, H. D., P. L. Bruner, and D. G. Berrett. 1987. The Birds of Hawaii and the Tropical Pacific. Princeton University Press, New Jersey.
	Human population	Supplied by local partners
	Invasive species	Supplied by local partners Personnal Communication - Margie Flanruw, July 2007
	Island geographic values	TNC GIS Database (c/o Bill Raynor)
	Social and cultural values	Supplied by local partners
Palau	Birds	Avibase - Bird Checklists of the World http://www.bsc-eoc.org/avibase Engbring, J. 1983. Avifauna of the Southwest Islands of Palau. Atoll Research Bulletin:1-24. Lundgren, I. 2002. Palau Nature Facts. The Nature Conservancy, Koror. Pratt, H. D., J. Engbring, P. L. Bruner, and D. G. Berrett. 1980. Notes on the Taxonomy, Natural History, and Status of the Resident Birds of Palau. The Condor 82:117-131. Pratt, H. D., P. L. Bruner, and D. G. Berrett. 1987. The Birds of Hawaii and the Tropical Pacific. Princeton University Press, New Jersey.
	Invasive species	Supplied by local partners
	Island geographic values	GIS Files c/o Palau Automated Land and Resource Information System
	Social and cultural values	Supplied by local partners
	Human population	Supplied by local partners
Republic of the Marshall Islands	Birds	Avibase - Bird Checklists of the World http://www.bsc-eoc.org/avibase NBTRMI. 2000. The National Biodiversity Report for the Republic of the Marshall Islands. Pratt, H. D., J. Engbring, P. L. Bruner, and D. G. Berrett. 1980. Notes on the Taxonomy, Natural History, and Status of the Resident Birds of Palau. The Condor 82:117-131.
	Social and cultural values	Supplied by local partners
	Human population	1999 Marshall Islands Census
	Invasive species	Falanruw, M. C. 2002. Terrestrial Biodiversity of the Federated States of Micronesia.
	Island geographic values	Marshall Islands Marine Resources Authority - Division of Policy, Planning & Statistics

APPENDIX D: Criteria used in the prioritization model

Criteria	*Weighting*	*Notes*
Final Score		sum of all criteria scores
Country		For internal reference
State		For internal reference
Island Group Name		Island name; if an island group - the name of the largest island is used
Island Group ID		For internal reference
Island ID		ID of representative (largest) island w/in the island group
Biodiversity		Sum of all Biodiversity values
Feasibility		Sum of all Feasibility values
Capacity Building		Any invasive species except Macaque and Shrew = 25, Shrew = 5, Macaque = 0
Regulatory/Management		Sum of Regulatory / Management values
Social Benefit		Social Benefit value
Public Support		Sum of Public Support values
Invasive Species Present		List of all invasive species present on island or island group
Invasive Species Technical Score	**x10**	Feasibility: (Presence of each invasive subtracts its associated score from the base value of 15) rat = 1, dog = 1, pig = 1, cat = 2, mouse = 2, Shrew 4, Macaque = 5)
Invasive Species Biodiversity Score	**x1**	Biodiversity: (each invasive species or group of species is allocated a biodiversity score that reflects the projected biodiversity benefit from a successful eradication) rules: dogs, pigs, mice, shrews = severity 1 invasives, cats = severity 2 invasives, rats and macaques = severity 3 invasives. Eradication of all species = 100, eradication of just one severity 1 invasive = 50 or 40 when both macaques and rats are in the group, eradication of a severity 2 invasive = 30 or 10 when both rats and macaques are in the group, eradication of a severity 1 invasive = even split of remaining points between however many severity 1 invasives are in the group. For eradication projects with a severity 3 and severity 1 species, the severity 3 species = 70 and the severity 3 species = 30. For eradication projects with a severity 3 and severity 2 species, the severity 3 = 60 and the severity 2 = 40.
Invasive Species Health Consequence	**x10**	Social Benefit: Rat, Mouse, Pig, Macaque = 3 (any combination of these species = the n x 3)
Eradication Technical Score	**x5**	Feasibility: (Single-species eradications = 5, Two-species eradications = 3, Multiple (> 2) species eradications = 1
Distance From Logistical Hub		Kilometers
Distance From Logistical Hub Score	**x5**	Feasibility: (> 100 = 1, > 50 < 100 = 2, >25 < 50 = 3, > 10 < 25 = 4, < 10 = 5)
Area (ha)		Hectares
Island Size Score	**x10**	Feasibility: (> 1000 = 1, > 500 < 1000 = 2, >100 < 500 = 3, > 10 < 100 = 4, < 10 = 5)
Island Size Score	**x10**	Biodiversity: (the inverse scoring scheme for the Feasibility use of this criteria is applied to biodiversity under the assumption that larger islands can support greater biodiversity)
Island Type Score	**x10**	Feasibility: (Low/Single = 4, Low Group = 3, High/Single = 2, High/Group = 1)
Total Bird Species		includes resident and non-resident
Endemic Bird Species		as specific as possible
Threatened Bird Species		as specific as possible
Native Species Score	**x1**	Biodiversity: Log(total bird species + native herp species + native plant species) the intention is to make species richness relative to region…thus marshalls can compete with Palau
Total Endemic Species		as specific as possible
Endemic Species Score	**x5**	Biodiversity : > 100 = 5, > 75 < 100 = 4. > 50 < 75 = 3, > 25 < 50 = 2, > 0 < 25 = 1, 0 = 0
IUCN Status		E = Endangered, VU = Vulnerable, NT = Near-Threatened
IUCN Status Score	**x5**	Biodiversity: E = 5, VU = 3, NT = 2
Seabird colony		Biodiversity (Yes = 30, No = 0) All island or island groups with pop score 4 or 5 ranked as seabird colony
Turtle nesting		Biodiversity (Yes = 30, No = 0)
Eradication technical feasibility	**x5**	Feasibility: See scoring sheet
Field research skills	**x5**	Feasibility: See scoring sheet
Regulatory feasibility	**x5**	Regulatory/Management: See scoring sheet
Management responsibility	**x5**	Regulatory/Management: See scoring sheet
Human Population	**x5**	Feasibility: See Scoring Sheet
Human Habitation	**x5**	Feasibility: See scoring sheet

Criteria	*Weighting*	*Notes*
Human Use	**x5**	Regulatory/Management: See scoring sheet
Vessels / Day	**x5**	Regulatory/Management: See scoring sheet
Social Benefit	**x10**	Social Benefit: See scoring sheet
Cultural Conflict	**x5**	Feasibility: See scoring sheet
Cultural conflict mitigation	**x10**	Feasibility: See scoring sheet
Public Outreach	**x10**	Public Support: See scoring sheet
Public Awareness	**x5**	Public Support: See scoring sheet
Public Support	**x5**	Public Support: See scoring sheet