

**GUAM DIVISION OF AQUATIC AND  
WILDLIFE RESOURCES  
ANNUAL PERFORMANCE REPORTS**

**FY 2007**

March 30, 2008

**Final**

Division of Aquatic and Wildlife Resources  
Department of Agriculture  
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**GUAM FISH AND WILDLIFE  
COORDINATION  
FW-3C-14  
FY 06-07**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** FW-3C-14

**Grant name:** Guam Fish and Wildlife Coordination

**Project number and name:** C-1, Job 1. Coordination of Guam's Fish and Wildlife Programs

**2. Report Period:** October 1, 2005 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source         | Budgeted  | Actual ___or Estimated_X_ |
|----------------|-----------|---------------------------|
| Federal:       | \$145,000 | \$ 0                      |
| State          |           |                           |
| Other:         |           |                           |
| _____          |           |                           |
| _____          |           |                           |
| Total Federal: | \$145,000 | \$ 0                      |
| Total match    |           |                           |
| Total project: | \$145,000 | \$ 0                      |

**5. Objectives:**

To plan, coordinate, supervise, and administer all Sport Fish and Wildlife Restoration Programs during the granting period.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

No activity was conducted in C-1, as the grant was extended to continue with C-3 for the purpose of installing a back –up generator for GDAWR main office building.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.** If you did work under this grant that was not captured in the discussion above or if you were unable to accomplish some of the work anticipated in the granting documents, please explain the differences in approach, results, and costs.

**9. List any publications or in-house reports resulting from this work.** Provide citations, including status (indicate if not completed), note any that are included with this report, and note where reports or publications may be obtained.

N/A

**Name, title, phone number, and e-mail address of person compiling this report:**  
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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** FW-3C-14

**Grant name:** Guam Fish and Wildlife Coordination

**Project number and name:** C-3: Division of Aquatic and Wildlife Resources Backup Generator

**2. Report Period:** October 1, 2005 to September 30, 2006

**Report due date:** December 31, 2006 [Extended to March 31, 2007]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source          | Budgeted  | Actual <u>  </u> or Estimated <u>  X  </u> |
|-----------------|-----------|--|
| Federal:        | \$75,000  | \$0  |
| State           |           |  |
| Other: W-1-R-14 | \$20,000  |  |
| T-2-D           | \$25,000  |  |
|                 |           |  |
| Total Federal:  | \$120,000 | \$0  |
| Total match     |           |  |
| Total project:  | \$120,000 | \$0  |

**5. Objectives:**

To provide reliable power supply to the Administration Section of DAWR during Guam's frequent power outages due to storms, earthquakes, and other adverse conditions. The total estimated cost is \$120,000.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

This project is ongoing as various grant programs were amended in order to provide cost-share funding. This included the Wildlife and Sport Fish Restoration Grants, and State Wildlife Grants. The design and installation of the project will be accomplished in FY08 because it is anticipated that the main building will be utilized by the Division of Aquatic and Wildlife Resources

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.** If you did work under this grant that was not captured in the discussion above or if you were unable to accomplish some of the work anticipated in the granting documents, please explain the differences in approach, results, and costs.

**9. List any publications or in-house reports resulting from this work.** Provide citations, including status (indicate if not completed), note any that are included with this report, and note where reports or publications may be obtained.

Division of Aquatic and Wildlife Resources. 2007. Coordination of Guam’s Fish and Wildlife Programs. Guam, Department of Agriculture. Annual Report.

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**GUAM FISH AND WILDLIFE  
COORDINATION  
FW-3C-15  
FY 2007**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** FW-3C-15

**Grant name:** Guam Fish and Wildlife Coordination

**Project number and name:** C-1, Job 1. Coordination of Guam's Fish and Wildlife Programs

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source         | Budgeted  | Actual <u>  </u> or Estimated <u>X</u> |
|----------------|-----------|--|
| Federal:       | \$145,000 | \$111,157.66                           |
| State          |           |  |
| Other:         |           |  |
| _____          |           |  |
| _____          |           |  |
| Total Federal: | \$145,000 | \$111,157.66                           |
| Total match    |           |  |
| Total project: | \$145,000 | \$111,157.66                           |

**5. Objectives:**

To plan, coordinate, supervise, and administer all Sport Fish and Wildlife Restoration Programs during the granting period.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The objectives were met by the following:

The Chief and Assistant Chief insured the attendance of staff at meetings focused on natural resource issues, planned and documented activities pertaining to fish and wildlife programs. The Chief of DAWR and his personnel represented the Department of Agriculture with the following duties: 1) All regulatory matter relating to fish and wildlife resources. This frequently entailed meeting with other local and federal agencies, including the US Navy and Air Force; 2) Administration and coordination responsibilities, which are 50% contributed by local funds; 3) the Chief attended the Federal Assistance Coordinator’s meeting in Winnemucca, Nevada (October 1-7, 2007). The Assistant Chief attended the Pacific Islands Marine Protected Area MPA meeting, October 2-5, 2007.

Staff was tasked with submitting documents including grant proposals, grant agreements, and performance reports pertaining to all funding sources. The documentation included annual Grant Agreements for 1) Project FW-3C, Guam Fish and Wildlife Coordination, which is jointly funded by Wildlife and Sport Fish Funds; 2) Project F-1-R, Guam Sport Fish Investigation, which covers sport fish research, surveys, and related activities funded by Sport Fisheries (DJ) funding; and 3) W-1-R, Guam Wildlife Investigations and survey activity. In addition, annual Grant Agreements were prepared for the Division’s various Fisheries Development and Endangered Species Recovery (Section 6) projects. The State Wildlife Grants were extended or obligated to fund wildlife projects, as well as for other federal assistance grants that required it.

Wildlife: Wildlife staff traveled to Rota, Commonwealth of the Northern Mariana Islands in March 2007.

Fisheries: Fisheries Staff attended various meetings including: the Coral Reef Ecosystem Plan Team Meeting, Pelagic Plan Team Meeting, and Bottomfish Plan Team Meeting in Honolulu, Hawaii, sponsored by the Western Pacific Fisheries Management Council. Staff also attended Pacific Island Learning Network (PILN) and the Marine Protected Area meeting in Chuuk, Our Sea of Islands meeting Hawaii.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.** If you did work under this grant that was not captured in the discussion above or if you were unable to accomplish some of the work anticipated in the granting documents, please explain the differences in approach, results, and costs.

**9. List any publications or in-house reports resulting from this work.** Provide citations, including status (indicate if not completed), note any that are included with this report, and note where reports or publications may be obtained.

Division of Aquatic and Wildlife Resources. 2007. Coordination of Guam's Fish and Wildlife Programs. Guam, Department of Agriculture. Annual Report.

**Name, title, phone number, and e-mail address of person compiling this report:**

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**SPORT FISH RESTORATION  
FY 2007  
F-1R-14**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-14

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Guam Fisheries Development Construction of Fisheries Office Building

**Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2007]

**3. Location of work:** Guam:

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted     | Actual or Estimated <u>X</u> |
|---|--------------|------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$450,551.36 | -0-                          |
| <b>State</b>                            | -0-          |                              |
| <b>Other:</b>                           | -0-          |                              |
|   |              |                              |
| <b>Total Federal</b>                    | \$450,551.36 | -0-                          |
| <b>Total match</b>                      | -0-          |                              |
| <b>Total project:</b>                   | \$450,551.36 | -0-                          |

**5. Objectives:**

- a. GDAWR will develop a Scope of Work based on the draft Fisheries office and warehouse with a wet laboratory design by August 31, 2007.
- b. GDAWR will develop a Scope of Work to design a 50KVA diesel generator with housing to be installed adjacent to the fisheries office by August 31, 2007 to provide reliable power supply to the Fisheries office during Guam's frequent power outages because of generator shutdowns or repairs by the Guam Power Authority, storms, earthquakes, and other adverse conditions.

- c. After GDAWR completes the environmental assessment (EA) and the expected finding of no significant impact (FONSI) is determined, a work request will be sent to the Department of Public Works to bid out the project.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project. N/A**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The principal purpose of this grant was to develop and construct a new building for GDAWR’s Fisheries Section. Because GDAWR only received word on the approval of the extension for the award during the middle of FY07, a scope of work was not drafted in FY07. GDAWR will draft on a scope of work for the building in FY08. GDAWR is also waiting word from the U.S. Fish and Wildlife Service on a waiver for the EA.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs. N/A**

**9. List any publications or in-house reports resulting from this work. N/A**

**Name, title, phone number, and e-mail address of person(s) compiling this report:**

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**SPORT FISH RESTORATION  
FY 2007  
F-1R-15**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1-R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 1. Management of Guam's Marine Fisheries Resources. Job 1. Offshore Fisheries Participation, Effort, and Harvest Surveys

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [extended to March 31, 2008]

**3. Location of work:** Island of Guam

**4. Costs:**

| Source                 | Budgeted | Actual or Estimated <u>X</u> |
|------------------------|----------|------------------------------|
| <b>Federal :</b> _____ | \$84,862 | \$108,454.83                 |
| <b>State</b>           |          |                              |
| <b>Other:</b> _____    |          |                              |
| _____                  |          |                              |
| <b>Total Federal</b>   | \$84,862 | \$108,454.83                 |
| <b>Total match</b>     |          |                              |
| <b>Total project:</b>  | \$84,862 | \$108,454.83                 |

**5. Objectives:**

- a. To monitor the health of Guam's reef, bottom, and pelagic fishery resource by conducting 192 offshore surveys each year at the three largest boat-launching facilities on island.
- b. To continue gathering limited biological data that will add to a long-term historical database on Guam's fish species by conducting 192 offshore surveys over a one-year period at the three largest boat-launching facilities on island.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

GDAWR’s Fisheries Section, conducted 192 offshore surveys (96 survey days with an AM and PM shift) including offshore creel surveys at the Agana Boat Basin (four a month), the Agat Marina (twice a month), and the Merizo Pier (twice a month), as well as participation surveys conducted four (4) times a month around the entire island to obtain data on islandwide boat based activity. This data is expanded to estimate the amount of fish harvested by boat-based methods and to identify trends in the fishery. Approximately, 507 unique boats were involved in boat-based fishing during FY07.

Table 1 summarizes the top five (5) methods encountered by boat-based methods, with total harvests for all methods. Comparing FY06 and FY07 values, Total Harvest increased 4%, trolling increased 9%, bottomfishing decreased 46%, SCUBA spearing increased 156%, snorkel spearing increased 12%, and gillnetting increased 204%. SCUBA spearing and gillnetting remains an elusive and difficult method to interview for various reasons. Therefore a significant increases may be a reflection of over- or under-expansion from a few interviews expanded to relatively numerous trips, which were not able to be surveyed because refusals or trip returns occurring outside survey times.

Table 1. Five (5) Year Harvest Totals for the Primary Boat-Based Methods

| Year           | Total Harvest (metric tons) | Trolling (metric tons) | Bottomfishing (metric tons) | SCUBA Spearfishing (metric tons) | Snorkel Spearfishing (metric tons) | Gillnet (metric tons) |
|----------------|-----------------------------|------------------------|-----------------------------|----------------------------------|------------------------------------|-----------------------|
| 2003           | 367.0                       | 272.2                  | 38.3                        | 21.3                             | 15.2                               | 18.0                  |
| 2004           | 334.3                       | 262.3                  | 23.4                        | 27.5                             | 13.2                               | 4.0                   |
| 2005           | 220.4                       | 165.4                  | 29.7                        | 12.8                             | 6.1                                | 4.6                   |
| 2006           | 291.2                       | 227.1                  | 47.0                        | 4.8                              | 7.7                                | 2.3                   |
| 2007           | 303.1                       | 246.6                  | 25.6                        | 12.3                             | 8.6                                | 7.0                   |
| 5-year Average | 303.2                       | 234.7                  | 32.8                        | 15.7                             | 10.2                               | 7.2                   |

Table 2 shows the five-year trends of the CPUE for the six most commonly encountered methods. Comparing FY06 and FY07 CPUE values, trolling increased 22%, bottomfishing increased 26%, SCUBA spearing decreased 39%, snorkel spearing decreased 2%, jigging was stable, and gillnetting decreased 8%. Interviews and catch disposition of methods other than trolling may need to be intercepted more often in order to obtain CPUE values having smaller confidence intervals.

Table 2. Five (5) Year Average CPUE for the Primary Boat-Based Methods

| Year           | Total Harvest (metric tons) | Trolling (metric tons) | Bottomfishing (metric tons) | SCUBA Spearfishing (metric tons) | Snorkel Spearfishing (metric tons) | Gillnet (metric tons) |
|----------------|-----------------------------|------------------------|-----------------------------|----------------------------------|------------------------------------|-----------------------|
| 2002           | 1.52                        | 0.41(158)              | 4.33                        | 1.77                             | 1.10                               | 5.64                  |
| 2003           | 2.20                        | 0.63                   | 5.27                        | 2.92                             | 1.10                               | 8.46                  |
| 2004           | 2.23                        | 0.51                   | 5.12                        | 1.83                             | 0.62                               | 5.37                  |
| 2005           | 1.61                        | 0.69                   | 3.32                        | 1.24                             | 0.76                               | 6.27                  |
| 2006           | 1.97                        | 0.87                   | 2.01                        | 1.22                             | 1.10                               | 5.80                  |
| 2007           | 2.43                        | 0.82                   | 7.47                        | 1.73                             | 1.1                                | 5.70                  |
| 5-year Average | 2.1                         | 0.7                    | 4.6                         | 1.8                              | 0.9                                | 6.3                   |

During FY07, trolling was dominated by mahimahi (*Coryphaena hippurus*) with 114 metric tons (mt). Onaga (*Etelis coruscans*) and barracuda (*Sphyraena barracuda*) dominated bottomfishing with a harvest recorded of 3.9 and 3.3 mt, respectively. Data from FY07 appear to imply that deepwater bottomfish species are overtaking shallow bottomfish species in total harvest. The nearest shallow bottomfish species caught was the yellowstipe emperor (*Lethrinus obsoletus*, 1.8 mt). For spearfishing, SCUBA spearfishing was dominated by the steephead parrotfish (*Chlorurus microrhinos*, 5.5 mt) while snorkel spearfishing was dominated by the unicornfish (*Naso unicornis*, 1.5mt).

Some funding, technical support, computer hardware and software, and travel opportunities were provided by the Western Pacific Management Council and the Pacific Fishery Science Center. However, Federal Assistance in Sport Fish Restoration provides a greater portion of the funding support for the Offshore Creel Program.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

The difference in costs may be associated by actual amount in staff time needed to do the work.

**9. List any publications or in-house reports resulting from this work.**

- a. Guam. Bottomfish and Seamount Groundfish Fisheries of the Western Pacific Region, 2006. Annual Report. Western Pacific Regional Fishery Management Council. Honolulu, Hawaii.
- b. Guam. Pelagic Fisheries of the Western Pacific Region, 2006 Annual Report. Western Pacific Regional Fishery Management Council. Honolulu, Hawaii.

- c. Fishery Statistics of the Western Pacific, Volume 22. Pacific Islands Fisheries Science Center, July 2007. Compiled by David Hamm, Nathan Chan and Craig Graham.
- d. Status of the Bottomfish Resources of American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands, 2005. Administrative Report H-07-04. Pacific Islands Fisheries Science Center, September 2007. Robert Moffitt, Jon Brodziak, Thomas Flores.

**Name, title, phone number, and e-mail address of person compiling this report:**

Thomas Flores, Jr. Fisheries Biologist III, (671) 735-4033, [thomasfloresjr@yahoo.com](mailto:thomasfloresjr@yahoo.com).

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 1. Management of Guam's Marine Fisheries Resources. Job 2. Inshore Fisheries Participation, Effort, and Harvest Surveys

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam, Island-Wide

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted  | Actual or Estimated <u>X</u> |
|---|-----------|------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$123,879 | \$99,821.98                  |
| <b>State</b>                            |           |                              |
| <b>Other:</b> _____                     |           |                              |
| _____                                   |           |                              |
| <b>Total Federal</b>                    | \$123,879 | \$99,821.98                  |
| <b>Total match</b>                      |           |                              |
| <b>Total project:</b>                   | \$123,879 | \$99,821.98                  |

**5. Objectives:**

- a. To monitor the health of Guam's reef and bottom fishery resource by conducting 192 inshore surveys each year along the coastline of Guam.
- b. To continue gathering limited biological data that will add to a long-term historical data base on Guam's fish species by conducting 192 inshore surveys each year along the coastline of Guam.
- c. To monitor the health of Guam's reef and bottom fishery resource by conducting 24 aerial surveys each year along the coastline of Guam.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

The project is part of the ongoing collaborative efforts between GDAWR, the Western Pacific Fishery Management Council, and the Pacific Fishery Science Center to combine the inshore and offshore creel data to enable more appropriate and accurate fishery data summaries and interpretation, which may be used to promulgate laws to properly manage Guam's food fish resources. Some funding, technical support, hardware and software, and travel opportunities were provided by the Western Pacific Fishery Management Council and the Pacific Fishery Science Center. However, the bulk of the funding for the Inshore Creel Program is provided through Federal Assistance.

**7. Describe how the objectives were met. See "Supplemental Information" for additional requirements and "Attachments" for specialized tables.**

#### Inshore Surveys

A total of 192 inshore creel and participation surveys (96 creel surveys and 96 participation surveys) were conducted along Guam's shoreline during FY07. A total of 47.8 metric tons (mt) was harvested by shore-based methods in FY07. This a decrease of 15% compared with 56.4 mt harvested in FY06. Catch per Unit Effort (CPUE) for most of the major shore-based methods also showed a general decrease. CPUE for snorkel spearfishing decreased 10% from 0.81 kg/gear-hour in FY06 to 0.73 kg/gear-hour in FY07. CPUE for castnetting decreased 74% from 0.43 kg/gear-hour in FY06 to 0.11 kg/gear-hour in FY07. Hook-and-line showed the largest decrease, decreasing 87% from 0.90 kg/gear-hour in FY06 to 0.12 kg/gear-hour I FY07. In contrast, gillnetting CPUE increased 90%from 0.48 kg/gear-hour in FY06 to 0.91 kg/gear-hour in FY07.

Table 1 summarizes the top seven (7) species harvest during FY07 by shore-based methods. The top two species were the scribbled rabbitfish (5.4 mt) and the bluespine unicornfish (5.0 mt), with the scribbled rabbitfish usually obtained from frequent pulse fishery events. The bigeye scad and juvenile jacks, usually harvested from frequent pulse fisheries, were next with 3.4 mt and 3.0 mt, respectively. Two species of octopus and the convict tang made up the remainder of the top seven (7) species. Large species, such as parrot fish, grouper and snappers, did not make the top shore-based species harvested.

Table 1. Summary of top seven (7) shore-based fish species caught and by method.

| Species                                       | Hook and Line (kg) | Castnet (kg) | Gillnet (kg) | Snorkel Spear (kg) | Hooks and Gaff (kg) | Total (kg) |
|---|--------------------|--------------|--------------|--------------------|---------------------|------------|
| <i>Siganus spinus</i><br>Rabbitfish           | 337                | 837          | 3,259        | 482                | 10                  | 5,375      |
| <i>Naso unicornis</i><br>Unicorn Fish         | 601                |              | 2,692        | 1,659              |                     | 4,977      |
| <i>Selar crumenophthanlmus</i><br>Bigeye scad | 3,378              |              | 4            |                    |                     | 3,382      |
| Caranx i'e or juvenile Caranx                 | 1,762              | 1,158        | 51           | 1                  |                     | 2,982      |
| <i>Octopus cyanea</i><br>Octopus              |                    |              |              | 200                | 2,379               | 2,582      |
| <i>Octopus sp.</i><br>Octopus                 |                    |              |              | 444                | 1,982               | 2,462      |
| <i>Acanthurus triostegus</i><br>Convict Tang  | 999                | 272          | 730          | 344                |                     | 2,435      |

### Aerial Surveys

A total of 24 aerial surveys were conducted during FY07. The hook-and-line method was observed more frequently than other methods during the aerial surveys: 395 hook-and-line fishers observed out of a total of 590, or 67% of shore-based fishing methods. A total of 1,196 marine animals were observed during FY07 compared with 850 in FY06. Turtles comprised the majority 64%, of these observations with 769 individuals observed, along with 402 dolphins, 9 sharks, 8 stingrays, 6 whales, and 2 eagle rays. Approximately, 605 of the 769 turtles were observed from Achang River to Fofos Island. Turtle observations, over a hundred per month, were observed only in November (1052). Next highest were December (98), January (64), and April (62). All other months had less than 60 individuals observed. With dolphin observations, most were observed in groups near protected bays. Except for turtles and dolphins, all other marine animals were rarely spotted during FY07.

### **8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

### **9. List any publications or in-house reports resulting from this work.**

1. Flores, T. "Bottomfish Plan Team Report" in Guam Module, *Bottomfish Plan Team annual Report, 2005*. Western Pacific Regional Management Council. Honolulu, HI.
2. Flores, T., Tibbatts, R. "Pelagic Plan Team Report in Guam Module, Pelagic

Plan Team Annual Report, 2006. Western Pacific Regional Management Council, Honolulu, HI.

3. Hamm, D., Chan, N., Graham, C. Fishery Statistics of the Western Pacific, Volume 22. Pacific Islands Fisheries Science Center, July 2007.
4. Moffitt, R., Brodziak, J, Flores, T. Status of the Bottomfish Resources of American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands, 2005. Administrative Report H-07-04. Pacific Islands Fisheries Science Center, September 2007. Robert Moffitt, Jon Brodziak, Thomas Flores.

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 1. Management of Guam's Marine Fisheries Resources. Job 3. Inshore Kid's Fishing Derby

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Island-wide

**4. Costs:**

| Source                 | Budgeted     | Actual or Estimated <b>X</b> |
|------------------------|--------------|------------------------------|
| <b>Federal :</b> _____ | \$ 31,999.00 | \$12,758.52                  |
| <b>State</b>           |              |                              |
| <b>Other:</b> _____    |              |                              |
| _____                  |              |                              |
| <b>Total Federal</b>   | \$ 31,999.00 | \$12,758.52                  |
| <b>Total match</b>     |              |                              |
| <b>Total project:</b>  | \$ 31,999.00 | \$12,758.52                  |

**5. Objectives:**

- a. To teach sport fishing, provide new fishers with a positive fishing experience, and foster in them a conservation and management ethic by hosting two kid's fishing derbies each year for 150 participants at an appropriate site along the coastline of Guam.
- b. To provide an opportunity for parents and children to learn about and practice basic fishing skills, including knot-tying and casting by participating in the Department's fishing derbies and clinics that are held twice each year.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The objectives were met by holding a two-day derby at the Asan War in the Pacific National Historical Park. The two days (Saturday, June 23, and August 4, 2007) were selected based on estimated tides from the Guam Tide Chart book, high tides being better for fishing. The fishing derby was held from 8:00 am to 11:00 am, followed by awards. Participants, ages 7-12 years old, were given a 20-minute briefing on safety, and rules of the derby, considerations on spacing between participants, minimum fish size requirements, “catch and release” procedures, before fishing had commenced. This gave the participants a chance to demonstrate marine conservation and fishing ethics.

Though 150 slots were available for each day of the derby, a total of 100 kids participated in the derby, with 53 and 47 attended on the first day, the second day of the derby, respectively.

The derby awarded three (3) winning categories (Most Fish, Longest Fish, and Most Number of Species). Prize packages were given to the top three participants for each of the three categories, while all extra prizes were given to non-winners by raffling. All the prizes were donated by local businesses, including fishing gear. Only the Divisions’ Fisheries staff was authorized by the Government of Guam to solicit for these events.

**8. Discuss differences between work anticipated in grant proposal and grant agreement and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

Please refer to the DAWR Website at ([http—www.guamdawr.org](http://www.guamdawr.org)) and Fisheries section annual reports (2007)

**Name, title, phone number, and e-mail address of person compiling this report:**

Thomas Flores, Jr., Fisheries Biologist III, (671) 735-4033, [thomasfloresjr@yahoo.com](mailto:thomasfloresjr@yahoo.com).

**Annual Project Performance Report**  
Guam Division of Aquatic and Wildlife Resources (GDAWR)  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 1. Management of Guam's Marine Fisheries Resources. Job 10. Assessing Guam's Reef Fish Spawning Aggregations

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam, Island-Wide

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted | Actual or Estimated <u>X</u> |
|---|----------|------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$16,817 | -0-                          |
| <b>State</b>                            | -0-      |                              |
| <b>Other:</b> _____                     | -0-      |                              |
| _____                                   |          |                              |
| <b>Total Federal</b>                    | \$16,817 | -0-                          |
| <b>Total match</b>                      | -0-      | -0-                          |
| <b>Total project:</b>                   | \$16,817 | -0-                          |

**5. Objectives:**

- a. Analyze 20 years of creel survey data to look for probable spawning aggregation encounters documented in the surveys to determine the species caught, approximate site location, date, time, tide, and moon phase by December 2005
- b. Interview knowledgeable local fishermen and fishermen identified by the creel data analysis as having located an aggregation to locate the site on a map and provide any details about aggregations they have witnessed by April 2006.
- c. Analyze and compile data and enter onto a GIS map by August 2006.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The objectives were not met during FY07. Agriculture’s Fisheries Section has only two (2) biologists shouldering the biological projects of the Section. One biologist has been on military leave for the past three (3) years. Agriculture, however, expects to hire at least two (2) biologists to the Section, to allow this other new projects to be completed. Also, other long-term projects, such as the boat-based, shore-based, and the freshwater biological data collection projects, were a priority to complete during FY07. In addition, the number of technical reviews and public presentations done during FY07 took up a significant amount of biological staff time.

The two first objectives aimed be accomplished during FY08. A sub-program, with the assistance of the Pacific Island Fishery Science Center, would be needed to in order to identify harvest trends, although the current system is unable to tie in harvest trends with specific areas that these fish were harvested. Currently, the boat-based and shore-based expansion program is able to show the harvest trends for selected species, however, this data should be compared with the Commercial Landings, which may be a better indicator when aggregating activity may occur, with the methodology made simpler by analyzing only spikes in the harvest of certain large fish that have reliable location codes. The assistance of the Pacific Island Fishery Science Center will be requested to parse this data out of the commercial receipt book program. The second objective may be more challenging, since two groups of ideal fishermen, SCUBA spearfishers and fishermen bordering Cocos Lagoon, are often not forthcoming with the creel surveyors. SCUBA spearfishers target most of the coastline during any year, and fishermen around Cocos Lagoon may be familiar with times of the year when certain fish aggregate. One group, however, commercial dive companies, would be a third group that may be more forthcoming with providing information on possible spawning sites.

The first two objectives, however, require biological oversight, an outreach program, and a program buy-in by fishermen. Hiring of additional biologists in DAWR’s Fisheries program will be necessary before this project could be completed with spawning sites identified, verified, and mapped. During FY08, an attempt will be made to request that Guam’s creel programs have a sub-program to identify harvest trends that may flag possible spawning sites and times, as well as beginning to approach fishermen for their assistance with this program. Lastly, information from other Pacific island nations and the University of Guam’s Marine Laboratory have been informally requested for information on their methodology, although an effort to review their data collection efforts to identify spawning sites should be further pursued this coming fiscal year.

**8. Discuss differences between work anticipated in grant proposal and grant**

**agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

**9. List any publications or in-house reports resulting from this work.**

**Name, title, phone number, and e-mail address of person compiling this report:**

Thomas Flores, Jr., Acting Fishery Supervisor, fax (671) 734-6570, (671) 735-4033,  
[thomaspflorejr@yahoo.com](mailto:thomaspflorejr@yahoo.com).

**Annual Project Performance Report**  
Guam Division of Aquatic and Wildlife Resources (GDAWR)  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 1. Management of Guam's Marine Fisheries Resources. Job 11. Characterization of Mangrove Snapper (*Lutjanus argentimaculatus*, Lutjanidae) spawning aggregations and sites in selected outer estuarine bays of Guam (Project ID No: W07-1600-004)

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended March 31, 2008]

**3. Location of work:** Territory of Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                | Budgeted             | Actual or Estimated <u>X</u> |
|-----------------------|----------------------|------------------------------|
| <b>Federal :</b>      | \$31,920.00          | \$ 7,175.08                  |
| <b>State</b>          |                      |                              |
| <b>Other:</b>         |                      |                              |
|                       |                      |                              |
| <b>Total Federal</b>  | \$31,920.00          | \$ 7,175.08                  |
| <b>Total match</b>    | \$0.00               | \$0.00                       |
| <b>Total project:</b> | <b>\$\$31,920.00</b> | <b>\$ 7,175.08</b>           |

**5. Objectives:**

1. Establish a Memorandum of Understanding with the Department of Agriculture and University of Guam Marine Laboratory by December 2006 to sub-contract the project to the marine laboratory.
2. Once MOU is signed by all parties, the marine laboratory will:
  - a. Identify mangrove snapper spawning aggregation sites in outer bays and reef fronts of the river systems.
  - b. Tag mangrove snapper (*Lutjanus argentimaculatus*) adults collected in rivers and estuaries of three or more river systems of Guam to determine

if spawning adults in a given aggregation are from a single river system or from multiple systems.

- c. Characterize mangrove snapper spawning aggregations.
- d. Characterize spawning aggregation sites utilized by mangrove snappers.
- e. Produce GIS maps of mangrove snapper spawning aggregation sites that incorporate aggregation parameters for use in developing and implementing management strategies for the spawning aggregations and sites by September 2007.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

A memorandum of understanding was signed by the Government of Guam and the University of Guam in 2007. Funding arrived too late to tag fishes and monitor tagged fishes during the 2007 season. Underwater surveys were made at selected localities in an attempt to detect the presence of aggregating mangrove snappers. Surveys were timed for just prior to the new and full moons. Surveys failed to detect snappers.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Because of late arrival of funding, tasks associated with this project were delayed. A no-cost extension was requested and granted. Supplies have been purchased; some student research associate salary has been used. Collection (hook and line) and tagging of fishes has commenced in anticipation of the next spawning season in 2008.

**9. List any publications or in-house reports resulting from this work.**

None available at this time.

**Name, title, phone number, and e-mail address of person compiling this report:**

Dr. Terry J. Donaldson, Ichthyologist; 1-671-735-2187; [donaldsn@uog9.uog.edu](mailto:donaldsn@uog9.uog.edu)  
Reviewer and editing: Jay Gutierrez, Acting Assistant Chief, Division of Aquatic and Wildlife Resources (DAWR)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and names:** Project 1. Management of Guam's Marine Fisheries Resources. Job 12. Connectivity of reef fish populations within the Mariana Islands and the greater Micronesia region

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam and Saipan

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                | Budgeted  | Actual or Estimated <u>X</u> |
|-----------------------|-----------|------------------------------|
| <b>Federal :</b>      | \$119,424 | \$43,190.50                  |
| <b>State</b>          |           |                              |
| <b>Other:</b>         |           |                              |
|                       |           |                              |
|                       |           |                              |
| <b>Total Federal</b>  | \$119,424 | \$43,190.50                  |
| <b>Total match</b>    |           |                              |
| <b>Total project:</b> | \$119,424 | \$43,190.50                  |

**5. Objectives:**

1. Establish a Memorandum of Understanding with the Department of Agriculture and the University of Guam Marine Laboratory to sub-contract the project to the marine laboratory by December 2006.
2. Once MOU is signed by all parties, the marine laboratory will:
  - a. Deploy current meters around Guam and download current data every 3-4 months depending on weather conditions.
  - b. Complete timed swims of target species at all sites and analyze abundance/biomass census data by June 2007.

- c. Complete fish collections of target species at all sites by June 2007.
- d. Undertake preliminary investigations for maternal effects study by June 2007.
- e. Determine timing of spawning of target species at each location by August 2007.
- f. Deliver samples for genetics and otolith microchemistry analyses by September 2007.
- g. Set up otolith grinding and analysis facility and begin processing of otoliths for age demographic study by September 2007.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project. N/A**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

A Memorandum of Understanding (MOU) was signed by the Government of Guam and the University of Guam in 2007. The timelines of the original proposal are no longer relevant because of the considerable delays in getting the project approved. Implementation of the program was nevertheless started as soon as was possible. Our main sampling program will still be centered on the spawning season for *Siganus spinus* in April/May 2008.

To date we have undertaken (beginning October 2007) monthly surveys of rabbitfish recruits from 8 sites around Guam. We have collected 10-20 adult rabbitfish each month for (1) analysis of reproductive timing (2) ageing (3) DNA analysis and (4) otolith microchemistry. From a spawning event in November 2007 we have collected 10-20 rabbitfish recruits from 8 different locations to obtain (1) otolith microchemistry (2) DNA analysis (3) ageing. Surveys for adult abundance have been completed for Pago Bay.

Two ADCP Express current meters have been ordered and a third already available at the lab has been serviced. However delays in deployment of these meters are dependent on the deployment of FADS by the Division of Aquatic and Wildlife Resources (DAWR). One of the collaborating scientists on the project Dr Steve Swearer visited in September 2007 for 10 days. His time was spent working with the two principal investigators Andrew Halford and Jennifer McIlwain to further refine the experimental design and the collection of data for the project.

A field trip to Saipan was also undertaken for 3 days to explore the fringing reef systems of Saipan and make some preliminary collections of rabbitfish for (1) otolith microchemistry and (2) DNA analysis. Meetings were also held with local fisheries personnel to inform them of our project. An otolith grinding lab has been 80% completed. We now have an otolith grinding machine and single stereo microscope for processing of otoliths. Another stereo microscope and high power microscope have been ordered.

Three individual meetings have been held with Dr Eric Wolanski the consulting oceanographer/modeler on the project. He has been flying through Guam en-route to Palau so we have been fortunate to have access to him for a few hours in Guam each time. These meetings have been used to refine the data collection details with respect to the appropriate placement of the current meters to capture the major current regimes around Guam. Discussions were also held with regard to the hydrodynamic model he will be developing for the project and whether the model can be further refined to enable finer-scale modeling of larval supply around Guam.

**8. Discuss differences between work anticipated in grant proposal and grant agreement and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

The ADCP units we have purchased were more expensive than originally budgeted for so we are \$6000 over budget on these items. We also require another \$2000 for the camera/video system needed for the analysis of otolith sections. After detailed discussions with the sales people, we have concluded that the original unit we intended to purchase is not satisfactory.

**9. List any publications or in-house reports resulting from this work. N/A**

**Name, title, phone number, and e-mail address of person compiling this report:**

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Reviewer and Editing:  
Jay Gutierrez  
Acting Assistant Chief  
Division of Aquatic and Wildlife Resources (DAWR)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1-R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 2. Management of Guam's Freshwater Fisheries Resources. Job 1. Freshwater Monitoring Program

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Entire Island of Guam

**4. Costs:**

| Source                 | Budgeted | Actual or Estimated <u>X</u> |
|------------------------|----------|------------------------------|
| <b>Federal :</b> _____ | \$59,879 | \$22,284.98                  |
| <b>State</b>           |          |                              |
| <b>Other:</b> _____    |          |                              |
| _____                  |          |                              |
| <b>Total Federal</b>   | \$59,879 | \$22,284.98                  |
| <b>Total match</b>     | -0-      | -0-                          |
| <b>Total project:</b>  | \$59,879 | \$22,284.98                  |

**5. Objectives:**

- a. To monitor the freshwater fishery resource by surveying seven streams in three watersheds each year for analysis and comparison between watersheds by using appropriate parametric and non-parametric tests. (See attached freshwater data collection sheet.)
- b. Conduct surveys of Guam's freshwater resources (rivers, caves sinkholes, reservoirs) to identify Guam's freshwater biological resources. (See attached freshwater data collection sheet.)
- c. Create a database showing the distribution and relative abundance of Guam's freshwater biological resources.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Surveys were conducted to determine the effect a dam has on tropical river fauna. In order to determine species composition, organism density, and habitat characteristics, visual surveys and physical data collections were conducted in randomly chosen quadrats, in both experimental (impacted by the dam) and control (not affected by the dam) rivers. Data was entered into a spreadsheet so statistical analyses can be performed to compare data between experimental and control sites and within baseline data collected in FY97.

DAWR heightened public awareness of native freshwater species to increase public interest in maintaining healthy freshwater ecosystems. Distributing flyers and posters of the freshwater fauna of Guam to various schools and civic groups, as well as, conducting presentations to groups of school children about the freshwater fauna of Guam accomplished this.

Several rivers in which the freshwater fauna unknown were surveyed, and the data collected and entered into a database. The goal of this survey is to produce a comprehensive survey inventory of Guam’s freshwater biological resources, and to provide baseline information for future environmental work in rivers. New biological data were collected from ten rivers and one freshwater cave in FY07.

The report provides a brief summary of the freshwater fishery projects for Guam in FY07. A more thorough report will be completed by DAWR.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

**9. List any publications or in-house reports resulting from this work.** None

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1-R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 2. Management of Guam's Freshwater Fisheries Resources. Job 2. Fisheries Studies in Fena Lake.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Entire Island of Guam

**4. Costs:**

| Source                | Budgeted   | Actual or Estimated X |
|-----------------------|------------|-----------------------|
| Federal : _____       | \$3,395.00 | \$0                   |
| State                 |            |                       |
| Other: _____          |            |                       |
| _____                 |            |                       |
| <b>Total Federal</b>  | \$3,395.00 | \$0                   |
| <b>Total match</b>    |            |                       |
| <b>Total project:</b> | \$3,195.00 | \$0                   |

**5. Objectives:**

Monitor the freshwater fishery in Fena Reservoir by conducting a stock assessment, using electrofishing and mark-recapture methodology to determine species density, and other environmental parameters. (See attached freshwater data collection sheet.)

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Objectives were not met, primarily because the Navy would did not allow access to Naval Magazine. No work could be conducted to meet expectations.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.** None

**9. List any publications or in-house reports resulting from this work.** None

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 3. Technical Assistance. Job 1. Technical Assistance to Activities Affecting Guam's Fisheries Resources

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Island-wide

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted  | Actual or Estimated <u>X</u> |
|---|-----------|------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$124,569 | \$15,455.12                  |
| <b>State</b>                            |           |                              |
| <b>Other:</b>                           | -0-       |                              |
|   |           |                              |
| <b>Total Federal</b>                    | \$124,569 | \$15,455.12                  |
| <b>Total match</b>                      |           |                              |
| <b>Total project:</b>                   | \$124,569 | \$15,455.12                  |

**5. Objectives:**

To provide technical information and increase public awareness on sport fishing and related issues to the public, the private sector, and local and federal government agencies on the island of Guam, as needed each year, through written comments and attendance at meetings.

**6. If the work in this grant was part of a larger undertaking with other components**

**and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

During FY07, the Fisheries Section reviewed an estimated number of twenty-five (25) project proposals, including developmental plans, environmental assessments, environmental impact statements, and permit applications. Fisheries Staff attended approximately seventy-five (75) meetings and made approximately fifty (50) field inspections to review these proposals. Fisheries personnel maintained good working relationships with the Department of Land Management, Department of Parks and Recreation, Guam Bureau of Statistics and Plans, Guam Environmental Protection Agency, Guam Hotel & Restaurant Association, Guam Visitor's Bureau, University of Guam, U.S. Army Corps of Engineers (ACOE), National Park Service, U.S. Fish and Wildlife Service, Western Pacific Regional Fisheries Management Council, National Marine Fisheries Service, Natural Resources Conservation Service, U.S. Navy, U.S. Coast Guard, and U.S. Air Force regarding matters of environmental concern.

Various Fisheries staff actively served as members of the following groups: Western Pacific Regional Pelagic Plan Monitoring Team, Western Pacific Regional Bottomfish Plan Monitoring Team, Western Pacific Regional Coral Reef Ecosystem Plan Monitoring Team, Guam Coral Reef Initiative Advisory Group, Mitigation Working Group, Marine Preserve Eco-permitting Working Group, Guam Seashore Reserve Working Group, and international fishery organizations such as the Secretariat of the Pacific Community and FAO.

The Fisheries Section also provided the following technical assistance in FY07:

1. Technical support to the Division's Agricultural Development Services (ADS), which represents the Department and the Division on the Application Review Committee (ARC), to review applications for rezoning, variances, and various types of development as they pertain to fisheries concerns.
2. Information to the Western Pacific Regional Fisheries Management Council (WESPAC) and the Plan Monitoring Team (PMT) on projects for bottomfish, pelagic fisheries, and coral reefs.
3. Represented the Department with the Coast Guard's awarding of the contract to clean up Cocos Island of PCB-contaminated soil by providing comments on mitigating possible impacts to the marine environment, including turtle nesting sites and erosion into the marine environment.
4. Represented the Department with the island-wide bridge mitigation project.

5. Provided technical assistance to the illegal clearing at Gun Beach, Tumon, which included providing the life history of endangered snails that were impacted by the illegal clearing.
6. Provided recommendations to the Guam Seashore Reserve Plan, which would help protect Guam's resources from various developmental activities.
7. Bridge construction repair recommendations, which included the island-wide bridge repair work.
8. Responses to requests for information on bills and laws and regulations pertaining to fish, endangered species, fishing and importation of fish.
9. Approximately fifty (50) presentations on fisheries resources and marine conservation to schools and organizations during the year.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs. N/A**

**9. List any publications or in-house reports resulting from this work. N/A**

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 4. Biological Surveys. Job 1. Visual Stock Assessment Surveys of Marine Preserves and Control Sites

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Achang Reef Flat Marine Preserve, Piti Bomb Holes Marine Preserve, Tumon Bay Marine Preserve, Asan Bay, Pago Bay, Cocos Lagoon, backside of Cocos Lagoon, and East Agana Bay

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted     | Actual <u>or Estimated</u> <u>X</u> |
|---|--------------|-------------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$103.113.00 | \$5,359.96                          |
| <b>State</b>                            | -0-          |                                     |
| <b>Other:</b> _____                     | -0-          |                                     |
| _____                                   |              |                                     |
| <b>Total Federal</b>                    | \$103.113.00 | \$5,359.96                          |
| <b>Total match</b>                      | -0-          |                                     |
| <b>Total project:</b>                   | \$103.113.00 | \$5,359.96                          |

**5. Objectives:**

- a. To evaluate the effect on sport fish populations caused by the creation of five marine preserves where fishing is restricted or prohibited by conducting fish counts and timed-swim counts on at least 16 permanent transects located in reef flat and lagoon habitats in Achang Reef Flat Marine Preserve, Piti Bomb Holes Marine Preserve, Asan Bay, Pago Bay, and Cocos Lagoon, over a one year period. (See attached marine preserve data collection sheet and map.)

- b. To evaluate the effect on sport fish populations caused by the creation of five marine preserves where fishing is restricted or prohibited by conducting fish counts and timed-swim counts on at least 16 permanent transects located at the 20', 30', 40', and 50' depth contours of the fore reef slopes in Achang Reef Flat Marine Preserve, Piti Bomb Holes Marine Preserve, Asan Bay, and the backside of Cocos lagoon, over a one year period.
- c. To evaluate the effect on sport fish populations caused by the creation of five marine preserves where fishing is restricted or prohibited by conducting video-transects/quadrants on 16 transects located on the fore reef slope of Piti Bomb Holes Marine Preserve and Asan Bay.
- d. To assess Tumon Bay Marine Preserve and an appropriate control site to determine transect locations and conduct fish counts and timed-swim counts on 32 permanent transects over a one year period.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See "Supplemental Information" for additional requirements and "Attachments" for specialized tables.**

The Department conducted fish counts and timed swim counts on the reef flat and within the channel of the Piti Bomb Holes marine preserve during this reporting period. Fish counts and timed swim counts in the other areas were not conducted as well as video transects/quadrant in Piti Bomb Holes Marine Preserve and Asan Bay.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

The Biologist III (marine preserve coordinator) was promoted to Fisheries Supervisor and soon thereafter was detailed to the position of Acting Assistant Chief. The marine preserve coordinator position was left vacant with no dedicated staff to manage the program. Other staff with the assistance of the Pacific Island Regional Office began conducting surveys when they were available. The Department made several attempts in fiscal year 2007 to hire a coordinator, however, individuals have withdrawn their application or have declined to accept the job. As of fiscal year 2008, an off island individual accepted and was hired as the marine preserve coordinator specifically for monitoring.

**9. List any publications or in-house reports resulting from this work.**

Porter, V., Leberer, T., Gawel, M., Burdick, D., Gutierrez, J., Torres, V., and Lujan, E. 2005. "The State of the Coral Reef Ecosystems of Guam" in *The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2005*. NOAA

Technical Memorandum NOS NCCOS 11. NOAA/NCCOS Center for Coastal Monitoring and Assessment's Biogeography Team. Silver Spring, MD. 522pp.

Porter, V., Leberer, T., Gawel, M., Burdick, D., Gutierrez, J., Torres, V., and Lujan, E. 2005. *Status of the Coral Reef Ecosystems of Guam* University of Guam Press, Mangilao. Technical Report 113. 80pp.

Division of Aquatic and Wildlife Resources. 2004. Biological Surveys: Visual Stock Assessment Surveys of Marine Preserves and Control Sites. Guam, Department of Agriculture.

Abraham, T., Beger, M., Burdick, D., Cochrane, E., Craig, P., Fenner, D., Golbuu, Y., Gutierrez, J., Hasurmai, M., Houk, P., Idip, D., Jacobson, D., Joseph, E., Keju, T., Kelty, R., Kuartei, J., Leberer, T., Palik, S., Penland, L., Pinca, S., Porter, V., Rikim, K., Starmer, J., Trianni, M., Victor, S., Whaylen, L. 2004. "The Status of the Coral Reefs in Micronesia" in *Status of Coral Reefs of the World: 2004*, Clive Wilkinson ed. Australian Institute of Marine Science, Townsville, Australia.

Division of Aquatic and Wildlife Resources. 2003. Two Year Marine Preserve Report. Guam, Department of Agriculture.

**Name, title, phone number, and e-mail address of person(s) compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 5. Management of Guam's Coral Reef Fishery Habitat. Job 1. Quantifying and Assessing the Effects of Sedimentation on Fish Abundance, Fish Diversity, and Benthic Habitat including corals

**Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Piti Bay Marine Preserve,

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted  | Actual or Estimated <u>X</u> |
|---|-----------|------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$102,657 | -0-                          |
| <b>State</b>                            | -0-       |                              |
| <b>Other:</b> _____                     | -0-       |                              |
| _____                                   |           |                              |
| <b>Total Federal</b>                    | \$102,657 | -0-                          |
| <b>Total match</b>                      | -0-       |                              |
| <b>Total project:</b>                   | \$102,657 | -0-                          |

### 5. Objectives:

1. To develop a scope of work and request for proposal by December 2006.
2. To obtain a contract to conduct an assessment of the Piti Bomb Holes Marine Preserve, an area with current and future erosion control problems, and an appropriate control site, for detailed monitoring by June 2007.
  - a. The scope of work will include:

- i. Conducting an assessment of coral, algae, fish, and macroinvertebrates to quantify biological resources.
- ii. Determining sediment rates and stream flow within streams using sediment and stream gauges.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

This project is part of the Masso Restoration Project. The project includes restoring Masso Reservoir to a freshwater fishing facility, which involves dredging the reservoir to remove sediments, reforesting the Masso watershed area to prevent erosion/sedimentation, and purchasing lands around Masso Valley as conservation areas. The role of this project is to monitor the effects of erosion/sedimentation into the Masso and Taguag Rivers. One goal of the restoration project is to decrease the amount of sediment input into the rivers to eventually enhance coral reef habitats.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The coral reef monitoring assistant at GDAWR was to lead the project. However, the monitoring assistant resigned, being hired by the National Oceanic and Atmospheric Administration (NOAA) in December 2005. The assistant is still housed at GDAWR but the responsibilities have changed.

The Acting Assistant Chief is working on the project when time permits until a dedicated staff can be hired coordinate the project. During FY 2006, GDAWR revised the objectives to contract out the project. Currently, a scope of work was developed by the Department and sent to the University of Guam Marine Laboratory (UOGML). A professor at the UOGML expressed interest with the project. However, the professor was inundated with various projects, such as UOGML, military, and other Departmental projects, and was not able to start the project. The professor continues to express interest in the project and stated he can start on the project towards the end of FY08. The Department will amend F-1R-15 to remove the project and make it a standalone project to begin in FY09. A deadline will be given to the professor on whether or not he will do the project. If he is unable to work on the project, it will be bid out.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs. N/A**

**9. List any publications or in-house reports resulting from this work. N/A**

**Name, title, phone number, and e-mail address of person(s) compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 5. Management of Guam's Coral Reef Fishery Habitat Job 2. Analyzing and Assessing Recreational Impacts on Coral Reef Habitat and Determining a Carrying Capacity Within Marine Preserves.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007, [Extended to March 31, 2008]

**3. Location of work:** Guam: Piti Bomb Holes Marine Preserve and Tumon Bay Marine Preserve,

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted  | Actual or Estimated <u>X</u> |
|---|-----------|------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$104,607 | \$221.44                     |
| <b>State</b>                            | -0-       |                              |
| <b>Other: _____</b>                     | -0-       |                              |
| _____                                   |           |                              |
| <b>Total Federal</b>                    | \$104,607 | \$221.44                     |
| <b>Total match</b>                      | -0-       |                              |
| <b>Total project:</b>                   | \$104,607 | \$221.44                     |

**5. Objectives:**

- a. Develop a scope of work and request for proposal by December 2006.
- b. To obtain a contract by June 2007, to assess the impacts of recreation activities within Tumon bay and Piti Bomb Holes Marine Preserves on coral reef habitat by linking recreational activities to their effects on the abundance, diversity, and distribution of fishes, corals, macro-invertebrates, and marine plants as well as

substrate cover, water clarity, temperature, dissolved oxygen, pH, and damage or pollution related to recreational activities and comparing the effects to appropriate control sites.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

A scope of work was developed using the limits of acceptable change process. This process is a value driven process relying on a transactive planning process involving the community as well as scientist and managers using a bottom up approach. However, no contract was obtained in FY 2007. During FY 2008, a contract will be obtained to conduct the project.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

The Biologist III (marine preserve coordinator) was to coordinate the project. However, the Biologist III was promoted to Fisheries Supervisor and soon thereafter was detailed to the position of Acting Assistant Chief. This resulted in the marine preserve coordinator position being vacant with no staff dedicated to move forward with the project. The Acting Assistant Chief has been working on the project as time permits. The Department made several attempts in fiscal year 2007 to hire a coordinator; however, individuals have withdrawn their application or have declined to accept the job. During fiscal year 2008, a marine preserve coordinator will be hired to specifically work with the community on marine preserves. This individual will follow up with the project after it has been awarded to a contractor.

**9. List any publications or in-house reports resulting from this work.** N/A

**Name, title, phone number, and e-mail address of person(s) compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 6. Job 1. Printing, development, and distribution of Fisheries posters, brochures, marine preserve public service announcements, and educational outreach items

**2. Report Period:** October 1, 2006 to September 30, 2007.

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Island wide

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted | Actual <u>  </u> or Estimated <u>  </u> <b>X</b> |
|---|----------|--|
| <b>Federal : Sport Fish Restoration</b> | \$48,964 | \$29,570.60                                      |
| <b>State</b>                            |          |  |
| <b>Other: _____</b>                     |          |  |
| _____                                   |          |  |
| <b>Total Federal</b>                    | \$48,964 | \$29,570.60                                      |
| <b>Total match</b>                      |          |  |
| <b>Total project:</b>                   | \$48,964 | \$29,570.60                                      |

**5. Objectives:**

- a. On an annual basis, as needed, obtain a purchase order to print 5000 (ea) of the multi-lingual scientific pelagic and food fish posters by December 2007 and distribute to the public to increase communication and knowledge of Guam's aquatic resources amongst the different language speakers.
- b. On an annual basis, as needed, obtain a purchase order to print 2500 (ea) of the freshwater posters by December 2007 and distribute to the public to increase communication and knowledge of Guam's freshwater resources.

- c. On an annual basis, as needed, obtain a purchase order to print 2500 (ea) of the marine preserve posters and brochures by January 2007 and distribute to the public to increase communication and knowledge of Guam's marine preserves.
- d. On an annual basis, as needed, obtain a purchase order to print up to 1000 (ea) of "Help Save Guam's Reefs" on pencils, pens, stickers, pins, badges, and hats by December 2007 and distribute to the public as incentives at presentations, lectures, and events to increase communication and knowledge of Guam's marine resources. DAWR will also have a question and answer session, and those individuals who answer a question correctly will receive the outreach items.
- e. Research concept for public service announcements (PSAs) of Guam's marine preserves to provide educational information and messages about Guam's marine preserves based on input from various agencies and groups by January 2007.
- f. Contract and work with video graphics company to research the concept and develop public service announcements (PSAs) for Guam's marine preserves by January 2007 to increase education and awareness of the preserves.
- g. Contract television station to air two or more of the marine preserve public service announcements by July 2007.
- h. Digitize poster and brochure files for future use.
- i. Distribute other fisheries posters as they become available to further the knowledge pertaining to aquatic resources of Guam.
- j. On an annual basis, obtain a purchase order by August 2007 to print 10,000 (ea) of the 2008 fishing calendars and distribute to the public to increase communication and knowledge of Guam's aquatic, freshwater, and marine preserve resources.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See "Supplemental Information" for additional requirements and "Attachments" for specialized tables.**

The following objectives were met by the following activities during FY07: 1) Distribution of 5,000 color posters on the reef and pelagic fishes of Guam, 2) The development and production of six thousand (6,000) copies of a 2007 wall fish calendar, 3) Digital files for fish posters were located and archived at and GDAWR, and 4) The freshwater poster project is at the film transparency stage, and awaits cost pricing for graphics artwork, and drum scanning before being print.

The Sport Fish Restoration Program funded the development and production of the posters. Four thousand fish posters were reprinted for 2007 distribution. The fish posters were made available to the public, especially to fishermen during inshore and offshore surveys.

The calendars featured thirteen (13) species of reef fish found in Guam's Marine Preserves, and tidal charts. These calendars were distributed to fishermen during inshore and offshore surveys, the public upon request at the main office, village mayors, senators, science teachers, marine preserve stakeholders, Guam fisherman's Co-op, and other interested members of the public upon request at the Division's office.

Several of the other objectives were not met this fiscal year because of time constraints. They included: 1) marine preserve posters and brochures were not completed during this fiscal year because of time constraints, 2) the ordering of fisheries related conservation items for public distribution at lectures, presentations and other venues, were not completed in this fiscal, and 3) although freshwater fish artwork was recorded on film, the posters were not produced.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs. N/A**

**9. List any publications or in-house reports resulting from this work. N/A**

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 6. Guam Sports Fish Aquatic Education. Job 2: Produce posters and brochures illustrating: land events as they affect Guam's Coastal waters, reef and fisheries; life cycle of five common reef fishes; and reef fish functional group.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Island wide

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted | Actual <u>or</u> Estimated <u>X</u> |
|---|----------|-------------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$8,761  | \$3,990.35                          |
| <b>State</b>                            |          |                                     |
| <b>Other:</b> _____                     |          |                                     |
| _____                                   |          |                                     |
| <b>Total Federal</b>                    | \$8,761  | \$3,990.35                          |
| <b>Total match</b>                      |          |                                     |
| <b>Total project:</b>                   | \$8,761  | \$3,990.35                          |

**5. Objectives:**

- a. During the first year, research and develop the concept of the erosion-reef and reef fish life cycle poster, and functional group brochure based on input from various agencies and groups. Assemble and archive poster and brochure elements and develop text, line-art and photographs.
- b. During the second year, contract and work with artist to develop the poster and brochure, design layout, and then identify a printer to print the poster and brochures.

- c. Upon completion of printing, the posters and brochures will be distributed to the public.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The first year’s objective was met during FY07 by the following activities: information was collected for the various projects that would provide the most useful and timely information to the sports fishing community; and, photographs were taken of reef-fish in consultation with fisheries biologist.

Requests were made of three different Guam artists to provide a cost estimate for the finished work and a written over-view of how the work would be created.

The poster will be produced upon development of the concept and production during the following fiscal year (FY08).

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.** N/A

**9. List any publications or in-house reports resulting from this work.** N/A

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 6. Guam Sports Fish Aquatic Education. Job 3: Maintenance and expansion of Aquatic education website

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Island wide

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted    | Actual or Estimated <b>X</b> |
|---|-------------|------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$25,614.00 | \$11,280.46                  |
| <b>State</b>                            |             |                              |
| <b>Other:</b>                           |             |                              |
|   |             |                              |
| <b>Total Federal</b>                    | \$25,614.00 | \$11,280.46                  |
| <b>Total match</b>                      |             |                              |
| <b>Total project:</b>                   | \$25,614.00 | \$11,280.46                  |

**5. Objectives:**

- a. Contract webmaster services to maintain the software programming of the Aquatics website.
- b. Resource Education and Information Officer (REIO) provides content maintenance: Post available aquatic education materials, project reports, photos, etc.
- c. Disseminate new information in a timely manner.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The objectives were met during FY07 as webmaster services were contracted for the fiscal year making the Division’s website ([www.guamdawr.org](http://www.guamdawr.org)) available to the public for their information. The website provided aquatic educational materials, project reports, photos, etc., as they were available.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.** N/A

**9. List any publications or in-house reports resulting from this work.** N/A

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 6. Guam Sports Fish. Job 4: Create and expand a digital library of fish and marine habitat photos

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007[extended to March 31, 2008]

**3. Location of work:** Guam: Island wide

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted    | Actual or Estimated <u>X</u> |
|---|-------------|------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$19,366.00 | \$13,026.25                  |
| <b>State</b>                            |             |                              |
| <b>Other:</b> _____                     |             |                              |
| _____                                   |             |                              |
| <b>Total Federal</b>                    | \$19,366.00 | \$13,026.25                  |
| <b>Total match</b>                      |             |                              |
| <b>Total project:</b>                   | \$19,366.00 | \$13,026.25                  |

### 5. Objectives

- a. Solve the lack of quality images, by assessing the state of the library of aquatic related photos, and assemble a list of species, habitats, and subject matter needed to be replaced and photographed.
- b. Photograph the images needed in the assessment, digitally photographing fish and marine habitat to solve Aquatics' current lack of quality images of reef fishes and coral habitats.
- c. Update photographs on the Fisheries section poster board and have them printed.

- d. Archive the images as JPEG files on Gold/archival compact disks to assure retention of the quality of the images.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The objectives of this project were met by the following activities during FY07:

1. Because of the tropical environment, typhoons, and earthquakes, nearly all the stored film images suffered from humidity, heat, fungus and mold damage. A comprehensive project of in-water photography was begun to replace these images.
2. More than 80 hours of underwater time was spent photographing in-shore and reef fish.
3. New, digital fish images were used to create a marine preserve calendar with integrated tide charts, lunar phases, and detailed information regarding the marine preserves.
4. All information and images were backed-up on an external hard drive. The information was then archived to Gold/Archival compact disks in triplicate and stored off-site.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.** N/A

**9. List any publications or in-house reports resulting from this work.** N/A

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 6. Guam Sports Fish Aquatic Education. Job 5. Public Presentations of Aquatic Resources

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [extended to March 31, 2008]

**3. Location of work:** Guam: Island wide

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted    | Actual or Estimated <u>X</u> |
|---|-------------|------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$65,228.00 | \$7,072.42                   |
| <b>State</b>                            |             |                              |
| <b>Other:</b> _____                     |             |                              |
| _____                                   |             |                              |
| <b>Total Federal</b>                    | \$65,228.00 | \$7,072.42                   |
| <b>Total match</b>                      | -0-         |                              |
| <b>Total project:</b>                   | \$65,228.00 | \$7,072.42                   |

**5. Objectives:**

To increase understanding of the importance of reefs, the knowledge of fish and other marine life, Guam's marine preserves, and awareness of watersheds, and the erosive damaging effects of grassland fires by presentations to various groups, events, and schools.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The objectives were met by the following activities during FY07:

a) The Division of Aquatic and Wildlife Resources (DAWR) delivered a total of twenty-two (22) presentations on endangered species, coral reef ecology (esp. toxic marine sea creatures) and fish to: public and private elementary, middle schools and high schools; University of Guam (UOG) classes; different summer camps; Guam Community College (GCC) police trainees; and the Department of Defense Education Activity (DODEA) High, elementary, middle, and high schools.

b) Aquatic presentations were observed and critiqued by the Resource, Education and Information officer for: preparation; adequate use of teaching aids; and delivery style.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs. N/A**

**9. List any publications or in-house reports resulting from this work. N/A**

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 6. Guam Sports Fish Aquatic Education. Job 6. Manahac Festival.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Island wide

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted | Actual or Estimated <u>X</u> |
|---|----------|------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$19,139 | -0-                          |
| <b>State</b>                            |          |                              |
| <b>Other:</b> _____                     |          |                              |
| _____                                   |          |                              |
| <b>Total Federal</b>                    | \$19,139 | -0-                          |
| <b>Total match</b>                      | -0-      |                              |
| <b>Total project:</b>                   | \$19,139 | -0-                          |

**5. Objectives:**

- a. Promote conservation of the fisheries and coral reef resources by hosting a rabbitfish (manahac) festival to educate and creating awareness about our limited resources, life cycle of rabbitfish (manahac), and the importance of algae/seaweed to rabbitfish (manahac) and the ecosystem.
- b. Sustain the traditional fishing practice for juvenile rabbitfish (manahac) by hosting a manahac festival to educate and teach the public, tourists, and hotel industry on how to harvest manahac using traditional fishing methods, such as cast netting (talaya), that do not impact the coral reef resources.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The objectives of this project, in an effort work and coordinate with local fishermen from the Guam’s fishermen cooperative, were not accomplished. An initial meeting early in fiscal 2007 occurred with the Guam Fishermen’s Cooperative to discuss planning the manahac festival. However, the project did not move forward after the initial meeting because the relationship between the Coop and the Department became strained. Since then, the Department has met with the President of the Coop to attempt to rebuild the relationship. Furthermore, a manahac-run did not occur in Tumon Bay during 2007, which would have proved unfavorable for the festival. Because of these reasons, the Department will be removing the project from F-1R-15.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.** N/A

**9. List any publications or in-house reports resulting from this work.** N/A

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-1R-15

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** Project 6. Guam Sport Fish Aquatic Education. Job 7. Field Guide "Marine Plants of Guam"

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source  | Budgeted  | Actual <u>    </u> or Estimated <u>  X  </u> |
|---|-----------|--|
| Federal: Sport Fish Restoration   | \$20,267  | \$10,787                                     |
| State:  |           |  |
| Other:  |           |  |
| Total Federal   | \$20,267  | \$10,787                                     |
| Total match: in-kind by the<br>University of Guam<br>Salary T.S.: 20% including<br>benefits | \$9,728   | \$9,728                                      |
| Total project:  | \$ 29,995 | \$ 20,515                                    |

### 5. Objectives

The goal of this project is to produce a field guide on marine plants, including recommendations for the island-wide monitoring program. Field work (*i.e.*, collecting and photographing marine plants) was the most important component of the first year of this project. More specifically, the following objectives were envisioned for FY'07:

- a. Establish a Memorandum of Understanding with the Department of Agriculture and University of Guam Marine Laboratory by December 2006 to contract the project to the marine laboratory.

- b. Conduct literature study (e.g. biologically active secondary metabolites) and local inquiries on the traditional use of marine plants in Guam by February 2007.
- c. Conduct fieldwork: habitus, habitat, and ecological observations on marine plants; specimen collection; *in situ* photography; documenting species distributions in Guam by July 2007.
- d. Determine morphological-anatomical identification in the laboratory using microscopy, and establish a voucher collection: herbarium sheets, wet samples preserved in formalin, and dried specimens in silica gel for molecular identification by August 2007.
- e. Database entry: species observations and descriptions; adding information on voucher specimens by August 2007.
- f. Export database report and automate generation of page layout by September 2007. Output to desired media: print production and CD-Rom (PDF); online publication (html). Publication of the field guide is planned for the end of the second fiscal year. Hence, publishing costs are not yet included in the budget.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

NA

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Because funding was delayed, most objectives of FY07 have not been completed yet. The PI participated in the NOAA RAMP cruise to the Northern Mariana Islands during which 156 voucher specimens were collected and numerous underwater pictures were taken. These pictures have already been used to educate resource managers and students in courses taught at the University of Guam Marine Laboratory (UOGML). During the Coastal Resources Management Summer Course for coral reef managers from the Micronesian region and the fall FY07 seminar for UOGML graduate students, these pictures were used to support lectures on marine plant identification.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

So far, the conducted work follows the proposed work objectives and goals. The completion date, however, will be postponed to early 2009 because of the delay in funding. We anticipate that a research assistant will join the project from July to December 2008. Also, in 2008 we have a large number of field trips planned in the framework of related monitoring projects, which will benefit the comprehensiveness of the field guide.

**9. List any publications or in-house reports resulting from this work.**

N/A

**Name, title, phone number, and e-mail address of person compiling this report:**

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**FISHERIES BOATING ACCESS PROGRAM  
FY07**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-6-B-5

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** F-6-B-5. Maintenance and Repair of Ramps and Piers

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [extended to March 31, 2008]

**3. Location of work:** Hagatna Boat Basin, Merizo Pier and Boat Ramp, Agat Marina

**4. Costs:**

| Source                | Budgeted  | Actual or Estimated X |
|-----------------------|-----------|-----------------------|
| <b>Federal :</b>      | \$518,419 |                       |
| <b>State</b>          | -0-       | -0-                   |
| <b>Other:</b>         | -0-       | -0-                   |
|                       |           |                       |
|                       |           |                       |
| <b>Total Federal</b>  | \$518,419 |                       |
| <b>Total match</b>    | -0-       |                       |
| <b>Total project:</b> | \$518,419 | \$ 0                  |
|                       |           |                       |

**5. Objectives:**

1. Establish a Memorandum of Understanding (MOU) with the Department of Parks and Recreation for the maintenance and repair of the Merizo Boat Ramp and Pier and the Cocos Island Public Pier by November 2006.
2. Have a contract in place to repair the Merizo Ramp and Pier's bumpers, pilings, and damaged concrete structures of the facility's ramp, pier, and walkways by February 2007.
3. Contract the work to replace the four (4) existing solar lights on the Merizo pier and repair the two (2) lights at the foot of the Merizo boat ramp by February

2007. The Department of Agriculture shall be responsible for the cost of the lighting.
4. Have a contract in place to repair the Cocos Island public pier by February 2007.
  5. Establish a Memorandum of Understanding (MOU) with the Port Authority of Guam for waterblasting, maintenance, and repair of the public boat ramps at the Agana Boat Basin and the Agat Marina by November 2006.
  6. Have a contract in place to waterblast the public boat ramps at the Agana Boat Basin, the Agat Marina, and the Merizo Boat Ramp by December 2006.
  7. Have a contract in place to repair damages to the public boat ramps at the Agana Boat Basin and the Agat Marina and the damaged walkways adjacent to the public boat ramp at the Agat Marina by December 2006.
  8. Work with the Port Authority of Guam in determining the distribution of recreational fishing vessel versus non-fishing vessels within slips at the Agana Boat Basin and Agat Marina, solicit a cost sharing approach for Agana Boat Basin and Agat Marina, and establish a Memorandum of Understanding (MOU) for the maintenance and repair of pilings and deckings by December 2006.
  9. Meet with the Archdiocese of the Agana Chancery Office to discuss and negotiate purchasing Ylig boat ramp facility by December 2006.
  10. Meet with local boating community to obtain information on boating access needs and prioritize a list.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project. N/A**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Two primary hurdles prevented any contractual work from being done during FY07; completing an agreeable Section 7 Consultation with the Pacific Island Regional Office in Hawaii for work done for this project, especially for in-water work, and having in place two MOU's for work done on property owned by the Port Authority of Guam (PAG) and the Department of Parks and Recreation (DPR).

The Section 7 Consultations were completed mid-Spring 2007, while the Governor of Guam signed the MOU with the Port Authority of Guam, and the Department of Parks and Recreation on July 23, 2007 and May 24, 2007, respectively. The MOU's allow 100% Federal Aid funding for work done on DPR property, while the majority of work done on PAG property is cost-shared with Federal Aid paying 82.5%, primarily work to complete an existing contract to

extend the existing pilings by 5 feet and any work involving ramp repair or walkway replacement. Water blasting of ramps on DPR and PAG property is open to the general public at no cost and is eligible for 100% funding by Federal Aid. The length of time it took to have in place the Section 7 consultations and the two Memorandums of Understanding, as well as staff workload towards the end of the fiscal year prevented any contractual work to be pursued.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

**9. List any publications or in-house reports resulting from this work.**

**Name, title, phone number, and e-mail address of person compiling this report:** This report was prepared by Thomas Flores, Jr., Acting Fisheries Supervisor, (671) 735-4033, [thomasfloresjr@yahoo.com](mailto:thomasfloresjr@yahoo.com). Jay Gutierrez, Acting Assistant Chief, (671) 735-3980, [jaytgutierrez@yahoo.com](mailto:jaytgutierrez@yahoo.com)

**GUAM  
FISHERIES DEVELOPMENT PROGRAM  
FY 2007**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-8-D-4

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** F-8-D-4. Maintenance and Repair of Fishing Platforms and Renovation of Office Space and Storage Facility

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Ylig and Togcha Bay for fishing platforms, and Mangilao for renovation of office space and storage facility

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted  | Actual or Estimated X |
|---|-----------|-----------------------|
| <b>Federal : Sport Fish Restoration</b> | \$208,786 | \$125.23              |
| <b>State</b>                            | -0-       |                       |
| <b>Other:</b>                           | -0-       |                       |
|   |           |                       |
| <b>Total Federal</b>                    | 208,786   | \$125.23              |
| <b>Total match</b>                      | -0-       |                       |
| <b>Total project:</b>                   | 208,786   | \$125.23              |

**5. Objectives:**

- a. To maintain and repair the 5 fishing platforms located on the reef flats of Talofof, Ylig, and Togcha Bays, over a one-year period. Maintenance will include removal of accumulated trash in the vicinity of the platforms. The type of repair will depend on the type of damage encountered and will be provided as needed.
- b. To renovate and maintain the division's existing office space in order to provide more efficient use of limited space for fisheries work-stations, complete renovations of storage facility, and purchase office generator and supplies. Partitions, bookcases, and cubicle style desks, shelves, and file cabinets will be purchased.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project. N/A**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

GDAWR visited the existing Togcha and Ylig platform sites approximately 3 times in FY 07 to remove trash and fishing line entangled within the platform. The owner of Jeff’s Pirate Cove, a business establishment located near the Togcha platforms, assisted GDAWR by having their staff remove trash from the platforms, usually on a daily basis. The owner also reminded fishermen who were using the fishing platforms to properly dispose of their trash.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

**9. List any publications or in-house reports resulting from this work. N/A**

**Name, title, phone number, and e-mail address of person compiling this report**  
Jay Gutierrez, Acting Assistant Chief, (671) 735-3980, jaytgutierrez@yahoo.com

## Annual Project Performance Report

Guam Division of Aquatics and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** F-9-D-7

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** F-9-D-7. Maintenance and Redeployment of DAWR FADs and SWMs

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Island-wide

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source                 | Budgeted  | Actual <u>or</u> Estimated <u>X</u> |
|------------------------|-----------|-------------------------------------|
| <b>Federal :</b> _____ | \$327,968 | \$0                                 |
| <b>State</b>           | -0-       |                                     |
| <b>Other:</b> _____    | -0-       |                                     |
| _____                  |           |                                     |
| <b>Total Federal</b>   | \$327,968 | \$0                                 |
| <b>Total match</b>     | -0-       |                                     |
| <b>Total project:</b>  | \$327,968 | \$0                                 |

**5. Objectives:**

- a. To maintain, preserve, and replace the fourteen (14) fish aggregating devices (FADs) located between 3.5 and 12 miles off the island of Guam, in a one year period.
- b. To maintain, preserve, and replace the 34 shallow water mooring buoys (SWMs) located in 30-40 ft. of water off the coast of Guam, in a one year period.
- c. To study the feasibility of establishing new shallow water mooring buoys within Tumon Bay Marine Preserve, Piti Bomb Holes Marine Preserve, and Achang Reef flat Preserve in a one-year period.

- d. To study the feasibility of establishing new FAD sites on the eastern side of Guam and explore appropriate designs capable of withstanding weather conditions on the eastern side.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project. N/A**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The Guam Division of Aquatic and Wildlife Resources (GDAWR) is currently responsible for the maintenance and redeployment of 14 Fish Aggregating Devices (FAD) sites and 34 Shallow Water Moorings (SWM) sites located on the northern and leeward sides of Guam. Although GDAWR is responsible for all aspects of the SWM program, GDAWR established an agreement with the Guam Marine Awareness Foundation (GMAF) during FY05 to reinstall offline SWMs with components that would be obtained from GDAWR.

During FY07, the coordinator for the FADs and SWMs project volunteered for duty with the Air National Guard for the entire fiscal year. This is the second year that he has been activated for duty with the Air National Guard. He has also requested for an extension for FY08. Towards the end of FY 2006, Section 7 consultations were unexpectedly enforced by the Pacific Island Regional Office (PIRO) in Honolulu. This process was completed and submitted during mid-Spring FY07. However, staff workloads with other projects prevented the FAD and SWMs project from being completed. At the end of FY07, approximately two (2) FADs are online, with six (6) FADs available inhouse for deployment. It is anticipated that securing the contract for deployment, deploying the FAD systems currently in storage, and ordering additional systems to complete the 14 systems with additional spare systems should occur during FY08.

**8. Discuss differences between work anticipated in grant proposal and grant agreement and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Work was not completed during FY07 for both the FADs and SWMs with similar problems encountered during FY06. However, enforcement of the Section 7 consultations was not anticipated and put a halt to the project until all endangered/protected species issues were addressed and satisfactory to PIRO. This document was not completed mid-Spring FY07, further delaying the FAD/SWM objectives from being met.

**9. List any publications or in-house reports resulting from this work.**

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-10-D-1

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** F-10-D-1. Construction of Rinse-Off Facility and Installation of Electrical System in the Fisheries Warehouse

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Mangilao

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted     | Actual <u>or</u> Estimated <u>X</u> |
|---|--------------|-------------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$161,570.37 | \$105,290.93                        |
| <b>State</b>                            |              |                                     |
| <b>Other:</b>                           | -0-          |                                     |
|   |              |                                     |
| <b>Total Federal</b>                    | \$161,570.37 | \$105,290.93                        |
| <b>Total match</b>                      |              |                                     |
| <b>Total project:</b>                   | \$161,570.37 | \$105,290.93                        |

**5. Objectives:**

- A. To construct a rinse-off facility within a one-year period to store, wash, and secure field equipment.
- B. To rewire the electrical system in the Division's existing storage facility within a one-year period to provide for a climate-controlled mezzanine for storage of archival materials.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project. N/A**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

During FY07, P&E Construction was awarded the bid to construct the rinse-off facility and storage area for archival data, with the Notice to Proceed given by the Department of Public Works (DPW) during early FY07. However, since it took almost two (2) years for this contract to be finalized due to Agriculture misplacing the original contract and the appropriate signatories to be obtained once a new contract was established, an increase in the cost of materials to construct the fiberglass bench occurred. A changeover is necessary to resolve this increase in cost and should be completed during FY08.

An oversight by the Department of Public Works occurred during FY07, which was to construct a hybrid connection (underground) from the facility to the island’s power supply. Another change order is necessary for this to be resolved, and should be completed during FY08. Both change orders require approval by the Attorney General’s Office, with the first change order already submitted August 2007.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Additional costs were incurred for the above two change orders: an increase in cost for the fiberglass bench was \$11,784.41 with the change order for the electrical hybrid connection \$45,086.50. These change orders were submitted during August 2007 to the Department of Agriculture. It is expected that these change orders will be approved during FY08.

**9. List any publications or in-house reports resulting from this work. N/A**

**Name, title, phone number, and e-mail address of person compiling this report:**

Jamie Bass, Fisheries Technician II, (671) 735-3958, [jddbass@gmail.com](mailto:jddbass@gmail.com) and Thomas Flores, Jr., Acting Fishery Supervisor, (671) 73504933, [thomaspfloresjr@yahoo.com](mailto:thomaspfloresjr@yahoo.com).

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-11 D-1

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** F-11-D-1. Masso Reservoir Restoration

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [extended to March 31, 2008]

**3. Location of work:** Masso Reservoir

**4. Costs:**

| Source                 | Budgeted     | Actual <del>X</del> or Estimated |
|------------------------|--------------|----------------------------------|
| <b>Federal :</b> _____ | \$381,043.00 | \$13,753.86                      |
| <b>State</b>           |              |                                  |
| <b>Other:</b> _____    |              |                                  |
| _____                  |              |                                  |
| <b>Total Federal</b>   | \$381,043.00 | \$13,753.86                      |
| <b>Total match</b>     |              | - 0 -                            |
| <b>Total project:</b>  | \$381,043.00 | \$13,753.86                      |

**5. Objectives:**

- a. Establish a Memorandum of Understanding (MOU) with the Ancestral Lands Commission by December, 2005.
- b. Have a contract in place to conduct a wetland delineation study by March 2006.
- c. Obtain permits and approvals from the U.S. Army Corps of Engineers and the Guam Environmental Protection Agency, which is dependant on the wetland delineation study, by June 2006.
- d. The grant will be amended when the permits are obtained.

**6. If the work in this grant was part of a larger undertaking with other components and**

**funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met.**

The MOU with Ancestral Lands is no longer necessary, as the land was transferred to Department of Agriculture in June 2006. Duenas, Bordallo, and Associates completed the wetlands delineation in January 2007. The 401 water quality permit was obtained from USEPA in January 2008. A waiver for wetland clearing was obtained from Department of Land Management in February 2008. Improvements to the reservoir improvements and stocking with native fishes remains to be completed.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.** N/A

**9. List any publications or in-house reports resulting from this work.** None

**Name, title, phone number, and e-mail address of person compiling this report:** This report was prepared by R. Brent Tibbatts. Fisheries Biologist II, Telephone number 735-3987. E-mail-[brent.tibbatts@gmail.com](mailto:brent.tibbatts@gmail.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** F-13-D-1

**Grant name:** Guam Sport Fish Investigations

**Project number and name:** F-13-D-1. Construction of Fisheries Office Building

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam: Mangilao

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                                  | Budgeted | Actual <u>or Estimated</u> <b>X</b> |
|---|----------|-------------------------------------|
| <b>Federal : Sport Fish Restoration</b> | \$26,099 | \$3,195                             |
| <b>State</b>                            |          |                                     |
| <b>Other:</b>                           | -0-      | -0-                                 |
|   |          |                                     |
| <b>Total Federal</b>                    | \$26,099 | \$3,195                             |
| <b>Total match</b>                      |          |                                     |
| <b>Total project:</b>                   | \$26,099 | \$3,195                             |

**5. Objectives:**

- a. Establish a Memorandum of Understanding between the Division of Aquatic and Wildlife Resources (DAWR), Government of Guam, and the U.S. Fish and Wildlife Service by December 2006.
- b. Contract out an environmental assessment to determine impacts from the construction of the fisheries office building and provide the environmental assessment to the Fish and Wildlife Service by February 2007.

- c. The grant will be amended after the completion of the environmental assessment.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project. N/A**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

A draft memorandum of understanding (MOU) between the Division of Aquatic and Wildlife Resources (DAWR), Government of Guam, and the U.S. Fish and Wildlife Service was completed during FY 2007. This MOU was reviewed by all parties involved and was agreed upon as workable. The MOU is being sent to the Attorney General’s Office for review. A signed MOU by the Governor of Guam and the U.S. Fish and Wildlife Agency is expected to be completed by fiscal year 2008.

An environmental assessment (EA) was required under the project. However, the Department discussed about the possible waiver of the EA with the U.S. Fish and Wildlife Service in fiscal year 2007. This waiver was based on other Federal Assistant projects near the proposed fisheries building that have not required an EA because of the finding of no significant impacts. The Department is still awaiting word on the possible waiver.

Because the actual construction of the fisheries office building is under the F-1R-14 award, the Department may amend and close the F-13-D award out and allocate the remaining funds to the construction of the fisheries office building (F-1R-14).

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs. N/A**

**9. List any publications or in-house reports resulting from this work. N/A**

**Name, title, phone number, and e-mail address of person compiling this report:**

Jay T. Gutierrez, Acting Assistant Chief, (671) 735-3980, jaytgutierrez@yahoo.com

**WILDLIFE RESTORATION**  
**W-1-R-14**  
**FY 2007**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** W-1R-14

**Grant name:** Guam Wildlife Restoration

**Project number and name: Project:** Coordination of Guam’s Wildlife Programs, Study No. W-1: Coordination, Job 1: Coordination

**2. Report Period:** October 1, 2005 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”.

| Source                       | Budgeted | FY06      | FY07 |
|------------------------------|----------|-----------|------|
| Federal : ES Section 6 Funds | \$97,500 | \$2093.49 | \$ 0 |
| State :                      |          |           |      |
| Other : _____                |          |           |      |
| _____                        |          |           |      |
| _____                        |          |           |      |
| Total Federal :              | \$97,500 | \$2093.49 | \$ 0 |
| Total Match :                |          |           |      |
| Total Project:               | \$97,500 | \$2093.49 | \$ 0 |

**5. Objectives:** (list project objectives from grant proposal or grant agreement)

a. To plan, coordinate, supervise, and administer all wildlife restoration programs including programs in wildlife population monitoring, implementing of management plans, and ensuring legislation that affect Guam’s wildlife are in alignment with other regulations.

b. Install an emergency generator for GDAWR Administrative Office and Wildlife Office.

**6. If the work in this grant was part of a larger undertaking with other components and**

**funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The Wildlife Supervisor is currently Acting Chief of the Division of Aquatic and Wildlife Resources. Throughout FY07 there were three biologists that rotated through the position in an acting capacity to ensure the smooth operation of wildlife restoration programs.

The installation of the emergency generator has not been completed. Funds to cost-share the generator were identified and projects were amended. W-1R-14 was extended into FY07 and FY08 for the sole purpose of completing this objective.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs. N/A**

**9. List any publications or in-house reports resulting from this work.**

GDAWR, Coordination, Fiscal Year 2007, Guam’s Division of Aquatic and Wildlife Resources’ Annual Report, Department of Agriculture.

**Name, title, phone number, and e-mail address of person compiling this report:**

Suzanne Medina, Wildlife Biologist III, 671-735-3990, [medinas@guam.net](mailto:medinas@guam.net)

**WILDLIFE RESTORATION  
FY 2007  
W-1R-15**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** W-1R-15

**Grant name:** Guam Wildlife Restoration

**Subproject, study no., and job number and name:** Subproject A: Management of Guam's populations of Birds and Mammals, Study No.: W-1 Game and Non-game Birds, Job 1: Survey and Inventory of Resident and Migrant Birds of Guam and Rota.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam and Rota

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated".

| Source         | Budgeted | Actual <u>  </u> or Estimated <u>  X  </u> |
|----------------|----------|--|
| Federal :      | \$82,000 | \$110,407.87                               |
| State          |          |  |
| Other: _____   |          |  |
| _____          |          |  |
| _____          |          |  |
| Total Federal  | \$82,000 | \$110,407.87                               |
| Total match    |          |  |
| Total project: | \$82,000 | \$110,407.87                               |

**5. Objectives:** (list project objectives from grant proposal or grant agreement)

a. To determine population trends, distribution and breeding status of the Mariana crow by conducting monthly searches for birds in northern Guam and semi-annual surveys on Rota.

b. To determine population trends, distribution and breeding status of the Mariana gray swiftlet by conducting quarterly cave counts of birds entering and exiting Mahlac cave and monthly searches for new caves throughout Guam.

- c. To determine population trends of other game (black francolin) and non-game birds (yellow bittern, blue-breasted quail, Micronesian starling, Eurasian tree sparrow, white tern, brown noddy, and migrant species) by conducting annual roadside surveys throughout the island.
- d. To determine population trends and distribution of Guam rails on the island of Rota in areas where they occur by conducting playback surveys along transects and roadways.
- e. Conduct surveys for rails on Cocos Island and other areas where rails are released.
- f. Determine habitat use of migrant species.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Guam survey: Eight of 10 known crows were monitored in the Munition Storage Area (MSA), AAFB. During the breeding season, crow searches were conducted in territories of established breeding pairs and two nests were discovered. Data collected from nest observations include nest attendance, egg turning, chick and/or mate feeding, as well as other behaviors. Due to a typhoon threat, the three eggs from the first nest were pulled for artificial incubation. Once the storm passed, two eggs were returned to the nest, however, the eggs disappeared the following day and the nest was abandoned. The pair was discovered building a second nest within a few weeks and an electrical barrier was applied. The pair was observed being disturbed by a male crow and five black drongos at the nest site. The nest was confirmed abandoned two days later.

No other crow nests were observed during the breeding season on Guam. In addition, no crow work was conducted in Rota during the fiscal year.

DAWR conducted two population surveys at Mahlac cave in FY07. The results are: December, 864 birds; May, 1233 birds. One survey was conducted each on Maemong and Fachi caves in July: Maemong, 36 birds and Fachi, 126 birds.

The annual Spring Bird Count occurred in May 2007. Twenty-four routes were surveyed throughout the island covering 221 stations. DAWR was not able to conduct a bird survey at the Naval Magazine. Black francolin (n=995) was the most abundant bird species, followed by the Eurasian tree sparrow (n=697). Sixty-five Micronesian starlings, a native bird species on Guam, were observed in the Andersen housing route. In addition, five starlings were observed on the Mount Santa Rosa route. At Cocos Island, 86 starlings were documented as well as white fairy terns (n=146), brown noddies (n=5) and black noddies (n=51). At the end of the Orote route, six brown noddies were observed but not included in the data as time expired. On May 31, Navy

Environmental reported 60 brown noddy adults with 9 eggs and 3 chicks on an islet north of

Spanish Steps in Orote.

Rota survey: During June and July, rail vocalizations were broadcast at 432 points in Saguag'aga, I Chiugai, Gampapa, and Apanon. Points were spaced at 100m intervals along roads and trails in areas where rails were likely to occur. Four different playback sequences lasting 1 minute each were broadcast during 15 minutes at each point. Areas selected for playback surveys were based on release sites from August 2000 to January 2007. We detected 36 individual rails at 20 points.

Migrant species: In June, a white-throated ground dove was observed in Tarague Basin, AAFB. Other species of birds observed on AAFB included: barn swallow, whimbrel, lesser golden plover, and brown booby. Wedge tailed shearwaters were observed at southeast shores of Guam. Northern shovelers, northern pintails, and green-winged teals were observed in man-made ponds in golf courses (Starts and Leo Palace). A garganey was observed in the wetlands in Mangilao behind DAWR offices. Ruddy turnstone and black-necked stilt were observed in Masso Reservoir and Inarajan. A pacific swallow was observed in Hagatna.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Only two swiftlet counts for Mahlac cave took place this fiscal year. The March census was postponed until May due to weather and conflicting schedules with Navy personnel. The June census was rescheduled to July to allow time between the previous censuses. DAWR staff did not attend the July census due to an error in the date submitted by Navy personnel (Navy personnel counted 948 birds). Due to heavy rains, the September count took place the following fiscal year in October 2007.

Objective 5 was not accomplished as rails have yet to be released on Cocos Island.

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual report for FY 07.

**Name, title, phone number, and e-mail address of person compiling this report:**

Paul Wenninger, Wildlife Biologist II, 671-735-3994, [pwenninger@yahoo.com](mailto:pwenninger@yahoo.com)  
Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** W-1R-15

**Grant name:** Guam Wildlife Restoration

**Subproject, study no., and job number and name:** Subproject A: Management of Guam's Populations of Birds and Mammals, Study No.: W-2 Native Mammals, Job 1: Population Biology of Mariana Fruit Bats in the Mariana Islands.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2007]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated".

| Source         | Budgeted   | Actual <u>  </u> or Estimated <u>  X  </u> |
|----------------|------------|--|
| Federal :      | \$6,000.00 | \$2,000.63                                 |
| State          |            |  |
| Other: _____   |            |  |
| _____          |            |  |
| _____          |            |  |
| Total Federal  | \$6,000.00 | \$2,000.63                                 |
| Total match    |            |  |
| Total project: | \$6,000.00 | \$2,000.63                                 |

**5. Objectives:** (list project objectives from grant proposal or grant agreement)

Determine population trends and age-structure of fruit bats on Guam by conducting monthly counts of known roost sites including the Andersen Air Force Base roost.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See "Supplemental Information" for additional**

**requirements and “Attachments” for specialized tables.**

The objective was met with monthly bat population surveys (11 counts) at the Pati Point colony conducted from October 2006 to September 2007. A scheduled count for December 2006 did not occur due to shortage of staff and an occurrence of Mariana crow breeding activities.

During the reporting period, the highest count occurred on May, July and August with 49 individuals. Three surveys documented young pups; May: one, July: two and August: two. On January, observers noticed 16 bats utilizing a *Ficus* tree for roosting, though the main roost tree species at the colony is *Mammea odorata*. By March, an increase of bats was documented at the *Ficus*. With the exception of the utilization of the *Ficus*, no large-scale colony movement of bats was noted.

The sex ratio average per count includes 3 females to every 1 male at the roost trees.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual report for FY 07.

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** W-1R-15

**Grant name:** Guam Wildlife Restoration

**Subproject, study, and job number and name:** Subproject A: Management of Guam's populations of Birds and Mammals, Study No.: W-3 Introduced Mammal Investigation, Job 1. Population Biology of Deer.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated".

| Source         | Budgeted   | Actual <u>  </u> or Estimated <u>  X  </u> |
|----------------|------------|--|
| Federal:       | \$9,000.00 | \$5,936.71                                 |
| State          |            |  |
| Other: _____   |            |  |
| _____          |            |  |
| Total Federal  | \$9,000.00 | \$5,936.71                                 |
| Total match    |            |  |
| Total project: | \$9,000.00 | \$5,936.71                                 |

**5. Objectives:** (list project objectives from grant proposal or grant agreement)

a. Determine deer abundance by conducting monthly spotlight counts in northern Guam on Andersen Air Force Base (AAFB) at Pati Point, Munitions Storage Area, and Northwest Field and other appropriate routes in southern Guam.

b. Document note worthy sightings of deer.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Deer population surveys were conducted at Pati Point, Northwest Field (NWF), and Munitions Storage Area (MSA). The three survey routes are hunting areas for Andersen Air Force Base (AAFB) (MSA and part of Pati Point are restricted to bow hunting). In addition, AAFB’s Volunteer Conservation Program conducts nightly depredation hunts in Pati Point, NWF and MSA. Method for deer surveys involves two staff members: a driver and an observer. The observer identifies deer along the 12.87 km (8 miles) survey route determining age class (fawn, yearling, doe or buck). For bucks, the number of tines is noted. The mean average number of deer per kilometer at each survey route was: Pati Point: 2.28, NWF: 1.4 and MSA: 5.55.

Noteworthy sightings of deer were recorded in FY07. In MSA, 201 deer was observed; Tarague Basin, 73 deer; AAFB golf course, 15 deer; Pati Point, 48 deer; NWF, 14 deer; and at the proposed Aircraft Staging Area, AAFB, 10 deer. In southern Guam, 14 deer were observed while conducting site inspections (farm land and private land) for revocable license permits.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

GDAWR, Population Biology of Deer and Feral Asiatic Water Buffalo, Fiscal Year 2007, Guam Division of Aquatic and Wildlife Resources’ Annual Reports, Department of Agriculture.

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** W-1R-15

**Grant name:** Guam Wildlife Restoration

**Subproject, study, and job number and name:** Subproject A: Management of Guam's populations of Birds and Mammals, Study No. W-4: Monitoring Harvest of Game Mammals and Birds, Job 1: Harvest of deer, feral pigs, feral carabao and black francolin.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated".

| Source         | Budgeted | Actual ___or Estimated <u>X</u> |
|----------------|----------|---------------------------------|
| Federal:       | \$3,000  | \$2,933.36                      |
| State          |          |                                 |
| Other: _____   |          |                                 |
| _____          |          |                                 |
| Total Federal  | \$3,000  | \$2,933.36                      |
| Total match    |          |                                 |
| Total project: | \$3,000  | \$2,933.36                      |

**5. Objectives:** (list project objectives from grant proposal or grant agreement)

a. Determine the hunter harvest of deer, feral pigs, and black francolin by analyzing mandatory hunter questionnaires and hunter logs from Andersen Air Force Base.

b. Tabulate depredation permit take of deer, feral pigs, feral carabao and black francolin based on monthly Depredation Reports, which are required of all permittees for the duration of their permit.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

At the time of this report, no hunter questionnaires have been received. A total of 688 hunting licenses and 1,557 deer tags were sold in FY07. No additional fees (or tags) are required to hunt wild pigs, other than a valid license is required to pursue game. Hunting logs from Andersen Air Force Base (AAFB) for the months of October to April report 355 deer and 116 pigs were removed. At the time of this report, DAWR is pending the May to September logs.

Fifty-nine revocable permits were issued to the public in FY07. Depredation permit holders removed 476 deer and 187 pigs. Under AAFB’s depredation permit, 392 deer and 43 pigs were removed. Additionally, four feral cats and three wild dogs were removed during depredation hunts.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR’s annual report for FY 07.

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** W-1R-15

**Grant name:** Guam Wildlife Restoration

**Subproject, study, job and number and name:** Subproject B: Natural History and Ecology of Guam's Vertebrates, Study No. W-1: Threatened and Endangered Species Investigations, Job 1: Natural History of Endangered Birds.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam and Rota

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated".

| Source         |          | Budgeted  | Actual __ or<br>Estimated <u>X</u> |
|----------------|----------|-----------|------------------------------------|
| Federal:       | Subjob 1 | \$67,000  | \$33,523.34                        |
|                | Subjob 2 | 2,000     | 865.44                             |
|                | Subjob 3 | 33,800    | 32,125.67                          |
| State          |          | 0         |                                    |
| Other: _____   |          |           |                                    |
| _____          |          |           |                                    |
| Total Federal  |          | \$102,800 | \$66,514.45                        |
| Total match    |          |           |                                    |
| Total project: |          | \$102,800 | \$66,514.45                        |

**5. Objectives:** (list project objectives from grant proposal or grant agreement)

a. To determine nesting success, home range, habitat requirements and activity patterns of Mariana crows in northern Guam in the Andersen Air Force Base Area and on Rota.

- b. To determine the nesting success and activity patterns of the Guam (Mariana gray) swiftlet at the Mahlac, Fachi, and Maemong caves as well as other caves where swiftlets may be discovered.
- c. To determine nesting success, home range, habitat requirements and activity patterns of Guam rails in snake-controlled areas on Guam and Rota.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Subjob 1: During the breeding season, crow searches are conducted in territories of established breeding pairs on Guam. The family group of Agaga, Amariyu and Gausali (offspring) was monitored. Only two of the 10 crows in the wild were not observed in this fiscal year. All found crows inhabited forested areas in the Munition Storage Area, AAFB. In April, two nests belonging to the newly formed pair of Agaga and Kahit were found. Data collected include nest attendance, egg turns, chick and/or mate feeding, and other behaviors. One nest found contained three eggs, which were harvested and artificially incubated at GDAWR due to a typhoon advisory. After the threat passed, two of the three eggs were returned to the nest for natural incubation, however the nest was abandoned three days later as the eggs were missing and not recovered.

Subjob 2: Two population surveys of swiftlets were conducted in December and May. During both surveys, reproduction was documented with observations of adults carrying nesting material, incubating eggs, and brooding chicks. One population survey of both Maemong and Fachi caves took place in July.

Subjob 3: To monitor nesting activities of established rails on Rota, playback population surveys were conducted to detect pairs and family group. Other data was points were obtained while cat trapping and radio tracking. Seven points at Duge and three points in Apanon recorded family groups. Also, in Apanon, adults with young were observed and one nest was discovered in which the eggs subsequently hatched. Family groups were detected at seven points in the Duge area and at three points in the Apanon area during the survey. Incubation by three instrumented rails was also detected in Apanon. Adults with young were observed at two locations and one nest successfully fledged in Apanon. In addition four pairs were observed in Apanon throughout 2007.

Objectives 1 and 3 were only partially accomplished as the crow project did not go to Rota and no rails exist in the wild on Guam.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual report for FY 07.

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

Paul Wenninger, Wildlife Biologist II, 671-734-3994, [pwenninger@yahoo.com](mailto:pwenninger@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** W-1R-15

**Grant name:** Guam Wildlife Restoration

**Project number and name:** Project: Technical Assistance to Activities Affecting Guam's Wildlife Resources, Study No. W-1: Technical Assistance, Job 1: Technical Assistance

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated".

| Source         | Budgeted | Actual <u>   </u> or Estimated <u>X</u> |
|----------------|----------|---|
| Federal :      | \$25,000 | \$23,006.33                             |
| State          |          |   |
| Other: _____   |          |   |
| _____          |          |   |
| Total Federal  | \$25,000 | \$23,006.33                             |
| Total match    |          |   |
| Total project: | \$25,000 | \$23,006.33                             |

**5. Objectives:** (list project objectives from grant proposal or grant agreement)

a. To minimize the adverse impacts resulting from the construction of recreational, commercial, military and public facilities by attending meetings, workshops, public hearings, reviewing environmental documents or applications, making recommendations, etc. Report on the number of projects reviewed and provide information on the amount of habitat preserved, mitigations implemented, etc.

b. Participate in emergency exercises to salvage wildlife and/or minimize impacts of accidental oil and toxic substance spills on wildlife.

c. To pursue the possibility of establishing safe-harbor, habitat conservation plan agreements with

private landowners and non-federal land to encourage the protection and enhancement of lands conducive to native wildlife.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

DAWR reviewed and provided technical assistance for major construction projects and many smaller projects impacting wildlife on Guam. Major projects were located on Andersen Air Force Base (AAFB), COMNAVMAR, and Apra Harbor. The Air Force plans to expand personnel, training, and infrastructure and will seriously impact natural resources on Guam. DAWR worked closely with AAFB 36<sup>th</sup> Civil Engineering Squadron, through informal and formal meetings, to minimize impacts to resources.

In addition, DAWR reviewed several plans by Government of Guam (Department of Public Works – Highway Division, Bureau of Statistics and Plans, and Guam Environmental Protection Agency) and Federal Government (USFWS and ACOE), that would affect natural resources on publicly owned lands. No mitigation plans have been formulated for these projects and negotiations are on-going.

A Safe Harbor agreement is currently being finalized for Cocos Island. No other Safe Harbor or Habitat Conservation Plans were pursued.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

No emergency exercises for accidental oil spills and/or salvaging wildlife were conducted this fiscal year.

**9. List any publications or in-house reports resulting from this work.**

The results of the project will be available in DAWR’s annual report for FY 07

**Name, title, phone number, and e-mail address of person compiling this report:**

Diane Vice, Wildlife Biologist III, 671-735-3990, [dianevice@gmail.com](mailto:dianevice@gmail.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** W-1R-15

**Grant name:** Guam Wildlife Restoration

**Project number and name:** Project: Coordination of Guam's Wildlife Programs, Study No. W-1: Coordination, Job 1: Wildlife Coordination

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated".

| Source         | Budgeted | Actual <u>    </u> or Estimated <u>X</u> |
|----------------|----------|--|
| Federal :      | \$73,000 | \$27,895.34                              |
| State          |          |  |
| Other: _____   |          |  |
| _____          |          |  |
| Total Federal  | \$73,000 | \$27,895.34                              |
| Total match    |          |  |
| Total project: | \$73,000 | \$27,895.24                              |

**5. Objectives:** (list project objectives from grant proposal or grant agreement)

a. To plan, coordinate, supervise, and administer all wildlife restoration programs including programs for endangered species recovery, wildlife population monitoring, implementing of management plans, conduction technical assistance and review of projects affecting Guam's wildlife, and ensuring legislation that affect Guam's wildlife are in alignment with other regulations.

b. To install an emergency diesel generator to DAWR Administrative and Wildlife Offices for the purpose of maintaining daily operations during power outages.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The Wildlife Supervisor is currently Acting Chief of the Division of Aquatic and Wildlife Resources. Throughout FY07 there were two wildlife biologists that rotated through the position in an acting capacity to ensure the smooth operation of wildlife restoration programs.

The installation of the emergency generator has not been completed. The building was inspected by the Guam Department of Public Works and paperwork for the bid process was submitted. The bid process has not been completed. Funding for this project is from W-1R-14, which has been extended for another fiscal year for the sole purpose of completing this objective.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The results of the project will be available in DAWR’s annual report for FY 07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Diane Vice, Wildlife Biologist III, 671-735-3990, [dianevice@gmail.com](mailto:dianevice@gmail.com)

**STATE WILDLIFE GRANTS  
T-1-D  
FY 02 Funding**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-1-D

**Grant name:** Guam State Wildlife Grant Program

**Project number and name:** W-1: Emergency Power Generation for Incubation Facility

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual ___or Estimated_X__ |
|----------------|----------|----------------------------|
| Federal :      | \$50,000 | \$55,758                   |
| State          |          |                            |
| Other:         |          |                            |
|                |          |                            |
| Total Federal: | \$50,000 | \$55,758                   |
| Total match    |          |                            |
| Total project: | \$50,000 | \$55,758                   |

**5. Objectives:**

To install a diesel generator to provide reliable emergency back up power to the GDAWR Incubation Facility by the end of FY04.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The installation of the generator and all connections were completed this fiscal year. The generator currently needs to be programmed prior to use.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Additional funds were needed including \$6,500 was used to connect the generator to the public power source. Another \$6,000 from E-2-9 was used to install a manhole to secure the wiring within a fenced area in order to reduce the risk of electrical wiring from being stolen.

An additional \$18,258 extra was spent on the generator installation. This unexpected cost was due to electrical wiring being stolen, and additional requirements by the Guam Power Authority for installation.

**9. List any publications or in-house reports resulting from this work.**

The result of this project will be available in DAWR's annual report for FY 07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Caplan Anderson, Wildlife Biologist II, 671-735-3956/97, [caplanandersen@yahoo.com](mailto:caplanandersen@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-1-D

**Grant name:** Guam State Wildlife Grant Program

**Project number and name:** W-2: Construction of Micronesian Kingfisher Breeding Facility

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted  | Actual ___ or Estimated _X_ |
|----------------|-----------|-----------------------------|
| Federal :      | \$144,000 | \$124,000                   |
| State          |           |                             |
| Other:         |           |                             |
|                |           |                             |
| Total Federal: | \$144,000 | \$124,000                   |
| Total match    |           |                             |
| Total project: | \$144,000 | \$124,000                   |

### 5. Objectives:

To construct a Micronesian Kingfisher facility, including 6-holding and 2-breeding pens, and a perimeter fence by FY04.

### 6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.

The larger activity is to captive breed Guam Micronesian kingfishers in captivity to prevent the extinction of this species and to eventually reintroduce them back to Guam. Endangered Species

Section 6 funds the majority of the species recovery in captivity on Guam. Also, there are 11

zoological facilities participating in the Micronesian Kingfisher Species Survival Plan. Each institution funds the husbandry efforts of maintaining and reproducing kingfishers at their respective facilities. The role of this project is to construct the first holding and breeding aviaries for kingfishers on Guam.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

This project was not worked on in FY07. The main facility, containing five holding and two breeding pens, was completed in FY05. The second facility contains ten holding pens (or five breeding pens) and was completed in FY06. Remaining funds from this project will be used in FY08 to repair the perimeter fence of the main facility after a large tree fell on it after heavy rains.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR’s annual report for FY07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Suzanne Medina, Wildlife Biologist III, 671-735-3985, [medinas@guam.net](mailto:medinas@guam.net)

**STATE WILDIFE GRANT  
T-2-D  
FY 03 Funding**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-2-D

**Grant name:** Guam State Wildlife Grant Program

**Project number and name:** W-1: Emergency Power Generation for DAWR Administrative Office and Wildlife Office

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source         | Budgeted | Actual <u>  </u> or Estimated <u>  X</u> |
|----------------|----------|--|
| Federal :      | \$25,000 | \$ 0                                     |
| State          |          |  |
| Other:         |          |  |
|                |          |  |
| Total Federal: | \$25,000 | \$ 0                                     |
| Total match    |          |  |
| Total project: | \$25,000 | \$ 0                                     |

**5. Objectives:**

Install a diesel generator to provide reliable emergency back-up power to the GDAWR Administrative and Wildlife Offices.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

There are several grants which are funding the installation of the emergency generator for the

DAWR Administrative and Wildlife Office: Wildlife Restoration, Sport Fish Restoration, Guam Fish and Wildlife Coordination, and this State Wildlife Grant.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The objective was not met this fiscal year and the grant has been extended into FY08 for completion. DAWR is waiting for the bid to be awarded. To date, the plans and the specs for the project are finished.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR’s annual report for FY07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Suzanne Medina, Wildlife Biologist III, 671-735-3985, [medinas@guam.net](mailto:medinas@guam.net)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-2-D

**Grant name:** Guam State Wildlife Grant Program

**Project number and name:** W-2: Construction of Guam Rail Outdoor Holding Cages.

**2. Report Period:** 1 October 2006 to 30 September 2007

**Report due date:** 31 December 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted  | Actual ___ or Estimated <u>X</u> |
|----------------|-----------|----------------------------------|
| Federal :      | \$101,181 |                                  |
| State          |           |                                  |
| Other:         |           |                                  |
|                |           |                                  |
| Total Federal: | \$101,181 | \$                               |
| Total match    |           |                                  |
| Total project: | \$101,181 |                                  |

**5. Objectives:**

Replace Guam rail wooden holding cages with permanent steel framed holding cages at GDAWR.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

The larger activity is the captive breeding of Guam rails to prevent the species extinction. Funding for this is from Endangered Species Section 6. There are also 17 zoological facilities participating in the Guam Rail Species Survival Plan. Each facility funds the housing and

breeding of Guam rails at their respective institutions.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Two steel-framed holding pens were constructed in FY05 and two more in FY07.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR’s annual report for FY07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Suzanne Medina, Wildlife Biologist III, 671-735-3985, [medinas@guam.net](mailto:medinas@guam.net)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-2-D

**Grant name:** State Wildlife Grant Program

**Project number and name:** W-3. Development of a Comprehensive Wildlife Conservation Strategy

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** 31 December 2007

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual <u>    </u> or Estimated <u>X</u> |
|----------------|----------|--|
| Federal:       | \$44,000 | \$0                                      |
| State          |          |  |
| Other:         |          |  |
|                |          |  |
| Total Federal  | \$44,000 | \$0                                      |
| Total match    |          |  |
| Total project: | \$44,000 | \$0                                      |

**5. Objectives:** (list project objectives from grant proposal or grant agreement)

To develop a Comprehensive Strategy by the end of FY 2005.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.** N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

In February 2006, DAWR received an approval letter for Guam's Comprehensive Wildlife Conservation Strategy (GCWCS). DAWR needs to resubmit the GCWCS due to insignificant discussion on the relative condition of habitat not mentioned in the strategy, important to species of greatest conservation need (SOGCN), such as grasslands, open fields, strand forest, and shoreline habitats. DAWR was given six months to revise the strategy to include the habitats important to SOGCN and its relative condition in paragraph or tabular form. Revisions were made.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.** N/A

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual report for FY07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey S. Quitugua, Wildlife Biologist I, 671-735-3996, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

**STATE WILDLIFE GRANTS  
T-3-R  
FY 04 Funding**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-3-R

**Grant name:** State Wildlife Grant

**Project number and name:** W-1: Reestablishing Island Swiftlets to Former Swiftlet Caves

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual ___ or Estimated <u>X</u> |
|----------------|----------|----------------------------------|
| Federal :      | \$50,000 | \$0                              |
| State:         |          |                                  |
| Other: _____   |          |                                  |
| _____          |          |                                  |
| Total Federal: | \$50,000 | \$0                              |
| Total match:   | 0        |                                  |
| Total project: | \$50,000 | \$0                              |

### 5. Objectives:

- a. In FY06, establish an MOU between DAWR and Andersen Air Force Base committing Tarague Cave as the site for swiftlet translocation.
- b. Prepare Tarague Cave for swiftlet translocation by removing 200 brown tree snakes from the cave and surrounding area using snake traps and/or acetaminophen bait stations. Continue to suppress snake densities after swiftlets have been established in cave.
- c. Capture 5% of the swiftlet population or no more than 25 birds from Mahlac Cave and release at Tarague Cave. Swiftlets are documented as reproducing year-round, however

translocation will take place during the off-peak breeding season (September-December).

- d. Determine the need for subsequent release of birds to the Tarague Cave after a yearly analysis of site fidelity after the first release.
- e. Determine the feasibility of conducting releases to other suitable caves by the end of FY07.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

Currently, the Guam swiftlet population, located within the Naval Ordnance, is being protected from brown treesnake predation under a Naval contract with US Department of Agriculture, Wildlife Services. The Guam Division of Aquatic and Wildlife Resources monitors the swiftlet population, in cooperation with Navy biologists. Monitoring provides necessary information on the status of the source population for translocation.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

None of the objectives were met in FY07. Initial negotiations with AAFB were started, however the project did not move forward due to the vacancy of the natural resource planner position on AAFB, as well as the sensitivity of introducing an endangered species to military property.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

The project was on hold due to a lack of staffing with key cooperator.

**9. List any publications or in-house reports resulting from this work.**

When project is completed, the results will be available in DAWR Annual Reports.

**Name, title, phone number, and e-mail address of person compiling this report:**

Diane Vice, Wildlife Biologist III, 671-735-3990, [dianevice@gmail.com](mailto:dianevice@gmail.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-3-R

**Grant name:** State Wildlife Grant

**Project number and name:** W-2: Survey of the Terrestrial Gastropods of the Northern Limestone Plateau in Guam

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual <u>  </u> or Estimated <u>X</u> |
|----------------|----------|--|
| Federal :      | \$30,003 | \$30,003                               |
| State:         |          |  |
| Other: _____   |          |  |
| _____          |          |  |
| Total Federal: | \$30,003 | \$30,003                               |
| Total match:   |          |  |
| Total project: | \$30,003 | \$30,003                               |

**5. Objectives:**

- a. In FY06, establish an MOU between DAWR and the University of Guam.
- b. Establish 48 sampling stations on the northern plateau of Guam.
- c. Assess the distribution and status of snail populations on the northern limestone plateau of Guam.

**6. If the work in this grant was part of a larger undertaking with other components and**

**funding, present a brief overview of the larger activity and the role of this project.**

This grant is part one in a two-part series to complete a survey of gastropods on Guam. The survey of southern Guam is funded within the T-5 grant apportionment.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

In FY07, due to an extended dry season, only 23 of the 48 sampling stations on the northern plateau of Guam have been completed. This grant was extended, and to be completed in FY08.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Delays in completing this project are due to contracting procedures not occurring in a timely manner.

**9. List any publications or in-house reports resulting from this work.**

A final report will be forwarded to DAWR upon completion of project and UOG will publish the results.

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-3-R

**Grant name:** Guam State Wildlife Grant Program

**Project number and name:** W-3: Implementation of Comprehensive Wildlife Conservation Strategy.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual <u>  </u> or Estimated <u>X</u> |
|----------------|----------|--|
| Federal :      | \$44,997 | \$0                                    |
| State          |          |  |
| Other: _____   |          |  |
| _____          |          |  |
| Total Federal  | \$44,997 | \$0                                    |
| Total match    |          |  |
| Total project: | \$44,997 | \$0                                    |

**5. Objectives:** (list project objectives from grant proposal or grant agreement)

- a. Coordinate with research groups and other cooperators to develop projects for obtaining baseline information on biology, distribution, and abundance of species of special concern, including their habitat.
- b. Develop Third Party Agreements with cooperators and assist in developing grant and/or project proposals for implementation with State Wildlife Grant funds.
- c. Create a Guam Comprehensive Wildlife Conservation Strategy Committee and convene regularly scheduled meetings.

d. Administer Guam's State Wildlife Grant Program.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See "Supplemental Information" for additional requirements and "Attachments" for specialized tables.**

On February, GDAWR received notification for the approval of the CWCS. Objectives 1, 2, and 4 were met with the island-wide gastropod survey project, contracted to Mr. Barry Smith, Marine Laboratory, UOG and the insect biodiversity project contracted to Dr. Aubrey Moore, CALS, UOG.

Objective 3 has not been met in this fiscal year. The committee for the Guam CWCS has not been formed as of date.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual report for FY07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-3-R

**Grant name:** Guam State Wildlife Grant Program

**Project number and name:** W-4: Reproductive Behavior and Parental Care by Captive Guam Micronesian Kingfishers

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual <u>  </u> or Estimated <u>  X</u> |
|----------------|----------|--|
| Federal :      | \$15,004 | \$0                                      |
| State          |          |  |
| Other:         |          |  |
|                |          |  |
| Total Federal: | \$15,004 | \$0                                      |
| Total match    |          |  |
| Total project: | \$15,004 | \$0                                      |

**5. Objectives:**

Determine the components related to parental care of Guam Micronesian kingfisher nestlings or chicks.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

The larger activity is to captive breed Guam Micronesian kingfishers in captivity to prevent the

extinction of the species and to eventually reintroduce them back to Guam. Endangered Species Section 6 fund the majority of the species recovery in captivity on Guam. Also, there are 11 zoological facilities participating in the Micronesian Kingfisher Species Survival Plan. Each institution funds the husbandry efforts of maintaining and reproducing kingfishers at their respective facilities.

The Guam Micronesian kingfishers have extremely low reproductive success and a majority of chicks raised are hand-reared. This project will allow GDAWR staff to study the birds in a more natural environment on Guam, as opposed to an artificial zoo setting, to better understand why 66% of chicks disappear from the nest and how to prevent this from happening on both Guam and the US mainland.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

No objectives were met during FY07.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

This project was not worked on in FY07 because of lack of breeding females on Guam. DAWR's one female became of reproductive age in May and was subsequently paired with two males. The first was extremely aggressive; the pairing with second male resulted in two clutches though all eggs were infertile. DAWR is still waiting for a shipment of females from the mainland zoos.

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual report for FY07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Suzanne Medina, Wildlife Biologist III, 671-735-3985, [medinas@guam.net](mailto:medinas@guam.net)

**STATE WILDLIFE GRANTS  
T-4-M  
FY 05 Funding**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-4-M

**Grant name:** State Wildlife Grant

**Project number and name:** W-1: Mariana Fruit Bat Colony Snake Control

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted  | Actual ____ or Estimated <u>X</u> |
|----------------|-----------|-----------------------------------|
| Federal :      | \$110,000 | \$0                               |
| State:         |           |                                   |
| Other: _____   |           |                                   |
| _____          |           |                                   |
| Total Federal: | \$110,000 | \$0                               |
| Total match:   |           |                                   |
| Total project: | \$110,000 | \$0                               |

**5. Objectives:**

To increase fruit bat pup survivorship within the Pati Point Mariana fruit bat colony by at least one pup during FY 2006 by contracting USDA Wildlife Services to remove 500 brown tree snakes from the area surrounding the Pati Point colony.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The objective of snake trapping around the colony was not met.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

The MOU for contracting the project to USDA Wildlife Services was completed. Snake trapping has not been started around the colony; Wildlife Services’ NEPA documentation for the project is in progress.

**9. List any publications or in-house reports resulting from this work.**

The result of this project will be available in DAWR’s annual reports for FY 2007 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Diane Vice, Wildlife Biologist III, 671-735-3990, [dianevice@gmail.com](mailto:dianevice@gmail.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-4-M

**Grant name:** State Wildlife Grant

**Project number and name:** W-2: Implementation of Guam's Comprehensive Wildlife Conservation Strategy

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source         | Budgeted | Actual <u>  </u> or Estimated <u>  X  </u> |
|----------------|----------|--|
| Federal :      | \$20,221 | \$0  |
| State:         |          |  |
| Other: _____   |          |  |
| _____          |          |  |
| Total Federal: | \$20,221 | \$0  |
| Total match:   |          |  |
| Total project: | \$20,221 | \$0  |

**5. Objectives:**

a. Coordinate with research groups and other cooperators to develop projects for obtaining baseline information on biology, distribution, and abundance of species of special concern, including their habitats, during FY 07.

b. Develop Third Party Agreements with cooperators and assist in developing grant and/or project proposals for implementation with State Wildlife grant funds.

c. Continue to coordinate a Guam Comprehensive Wildlife Conservation Strategy Committee

and convene regularly scheduled meetings.

d. Administer Guam's State Wildlife Grant Programs.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See "Supplemental Information" for additional requirements and "Attachments" for specialized tables.**

The objectives were partially met this fiscal year. With the final NAAT team approval, a copy of Guam's CWCS was issued to Guam's National Wildlife Refuge (GNWR) and SWCA Environmental Consultants, which will be used as guidance for their preparation of developing their Comprehensive Conservation Plan (CCP). SWCA is an environmental consulting firm stationed on Guam, working on GNWR's CCP this fiscal year.

A draft plan to develop and coordinate a GCWCS committee is pending. Under State Wildlife Grants, coordination with University of Guam's Marine Lab (gastropod surveys project) and College of Agriculture and Life Science (insect biodiversity project) was accomplished.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The result of this project will be available in DAWR's annual report for FY07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-4-M

**Grant name:** State Wildlife Grant

**Project number and name:** W-3: Renovation of DAWR Wildlife Lab

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual <u>  </u> or Estimated <u>  X  </u> |
|----------------|----------|--|
| Federal :      | \$25,000 | \$16,000                                   |
| State:         |          |  |
| Other:_____    |          |  |
| _____          |          |  |
| Total Federal: | \$25,000 | \$16,000                                   |
| Total match:   |          |  |
| Total project: | \$25,000 | \$16,000                                   |

**5. Objectives:**

- a. Increase the number of rooms within the Wildlife Lab from three to six by building walls that will divide the current space into specialized rooms designated for specific aviculture activities.
- b. Replace current counter top and add at least 20 square feet of countertop space to increase the workspace for incubators, animal intensive care units, diet preparation, etc.
- c. Increase food storage capacity by purchasing a walk-in cooler refrigerator and storage cabinets.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

In FY07, a new incubator room was completed with 24 ft<sup>2</sup> of countertop added. Also, a walk-in cooler was purchased, installed and is operational.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

The priority of renovating the DAWR Wildlife Lab in FY07 has been on the creation of the new incubator room. No new rooms have been created or added and the grant has been extended to do so.

**9. List any publications or in-house reports resulting from this work.**

The result of this project will be available in DAWR’s annual reports for FY 07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Caplan Anderson, Wildlife Biologist II, 671-735-3997/8, [caplanandersen@yahoo.com](mailto:caplanandersen@yahoo.com)

**STATE WILDIFE GRANTS**  
**T-5-HM-1**  
**FY 06 Funding**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-5-HM-1

**Grant name:** State Wildlife Grant

**Project number and name:** W-1: Survey of the Territorial Gastropods of the Volcanic Highlands and Limestone Habitats in Southern Guam

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007[Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual <u>  </u> or Estimated <u>X</u> |
|----------------|----------|--|
| Federal :      | \$45,675 | \$0                                    |
| State:         |          |  |
| Other:_____    |          |  |
| _____          |          |  |
| _____          |          |  |
| Total Federal: | \$45,675 | \$0                                    |
| Total match:   |          |  |
| Total project: | \$45,675 | \$0                                    |

**5. Objectives:**

To survey the south island of Guam from Adelup-Pago Fault Zone and south to determine the distribution and current status of native snail populations that remain.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

This project has been contracted out to the University of Guam and is expected to begin in FY08. The northern survey has not been completed due to an extended dry season. Upon completion of the northern survey, the southern survey will begin.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR’s annual report (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-5-HM-1

**Grant name:** State Wildlife Grant

**Project number and name:** W-2: Cocos Island Biosecurity Monitoring

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual ___ or Estimated <u>X</u> |
|----------------|----------|----------------------------------|
| Federal :      | \$45,000 | \$0                              |
| State:         |          |                                  |
| Other:_____    |          |                                  |
| _____          |          |                                  |
| _____          |          |                                  |
| Total Federal: | \$45,000 | \$0                              |
| Total match:   |          |                                  |
| Total project: | \$45,000 | \$0                              |

**5. Objectives:**

To protect Cocos Island over an eighteen-month period from any incursions of unwanted species, including but not limited to, rodents, snakes and cats, by monitoring the island’s incoming cargo and vessels.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

This project supports the Ko’ko’ for Cocos Project which is a project aimed at establishing a breeding population of Guam rails in a rodent and snake-free environment (i.e. Cocos Island) on

Guam.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

The MOU to contract USDA Wildlife Services to implement biosecurity protocols in support of keeping Cocos Island snake and rodent free was completed. Brown treesnake detector dog teams have inspected large cargo shipments and boat operators were contacted to implement prevention protocols.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs. N/A**

**9. List any publications or in-house reports resulting from this work.**

The result of this project will be available in DAWR’s annual reports for FY 07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Diane Vice, Wildlife Biologist III, 671-735-3990, [dianevice@gmail.com](mailto:dianevice@gmail.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-5-HM-1

**Grant name:** State Wildlife Grant

**Project number and name:** W-3: Tarague Basin Swiftlet Cave Brown Treesnake Protection

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual <input type="checkbox"/> or Estimated <input checked="" type="checkbox"/> |
|----------------|----------|--|
| Federal :      | \$41,913 | \$0  |
| State:         |          |  |
| Other: _____   |          |  |
| _____          |          |  |
| Total Federal: | \$41,913 | \$0  |
| Total match:   |          |  |
| Total project: | \$41,913 | \$0  |

**5. Objectives:**

To reduce snake predation of island swiftlets in Tarague Basin cave on AAFB using snake traps, bait stations and other available snake control tools.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

This project is a continuation of a previous State Wildlife Grant effort that has not been completed.

**7. Describe how the objectives were met. See “Supplemental Information” for additional**

**requirements and “Attachments” for specialized tables.**

Objectives have not been met.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

The project cannot begin until the Swiftlet Translocation Project, as described in T-3, is completed.

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR’s annual reports for FY 07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Diane Vice, Wildlife Biologist III, 671-735-3990, [dianevice@gmail.com](mailto:dianevice@gmail.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** T-5-HM-1

**Grant name:** State Wildlife Grant

**Project number and name:** W-4: Guam Insect Biodiversity

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual ___ or Estimated <u>X</u> |
|----------------|----------|----------------------------------|
| Federal :      | \$18,250 | \$0                              |
| State:         |          |                                  |
| Other:_____    |          |                                  |
| _____          |          |                                  |
| _____          |          |                                  |
| Total Federal: | \$18,250 | \$0                              |
| Total match:   |          |                                  |
| Total project: | \$18,250 | \$0                              |

**5. Objectives:**

- a. To support collaboration with an insect taxonomist who can help to clear a backlog of unidentified species in the Guam Territorial Insect Collection. Priority will be given to identifying aquatic insects collected during the ongoing Guam EPA stream survey and unidentified species collected during the recent invasive insects survey of Guam and other Micronesian islands.
- b. To complete a cataloguing of the Guam Territorial Collection using the BioLink Biodiversity Database Management System.

- c. To publish a comprehensive checklist of Guam's insect fauna on the World Wide Web (www.), complete with digital images to aid in identification.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See "Supplemental Information" for additional requirements and "Attachments" for specialized tables.**

The MOU between UOG and DAWR was completed. The insect identification project is scheduled to begin April 2008.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

This project was delayed due to slow processing of the MOU.

**9. List any publications or in-house reports resulting from this work.**

The result of this project will be available in DAWR's annual reports for FY 07 (in prep).

**Name, title, phone number, and e-mail address of person compiling this report:**

Diane Vice, Wildlife Biologist III, 671-735-3990, [dianevice@gmail.com](mailto:dianevice@gmail.com)

**ENDANGERED SPECIES SECTION 6  
E-2-8  
FY 05**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-8

**Grant name:** Endangered Species Section 6

**Project number and name:** Segment 9 Guam Endangered Species Recovery

**Subproject number and name:** Subproject A. Reproductive Enhancement of the Mariana Crow and Other Endangered Species. Job 2. Area Wide Control of Brown Treesnakes.

**2. Report Period:** October 1, 2004 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source                       | Budgeted | FY05 | FY06 | FY07 |
|------------------------------|----------|------|------|------|
| Federal : ES Section 6 Funds | \$13,000 | \$   | \$   | \$ 0 |
| State :                      |          |      |      |      |
| Other : _____                |          |      |      |      |
| Total Federal :              | \$13,000 | \$   | \$   | \$ 0 |
| Total Match :                |          |      |      |      |
| Total Project:               | \$13,000 | \$   | \$   | \$ 0 |

**5. Objectives:**

To protect up to 10 Mariana crow nest trees with electrical barriers and area wide snake control.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

This grant was extended in FY07. During this fiscal year, funds from the extended grant were not used.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The result of this project will be available in GDAWR’s annual reports for FY 07.

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-8

**Grant name:** Endangered Species Section 6

**Project number and name:** Segment 8 Guam Endangered Species Recovery

**Subproject number and name:** Subproject A. Reproductive Enhancement of the Mariana Crow and other endangered species. Job 3. Translocation of Mariana crows

**2. Report Period:** October 1, 2004 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source                          | Budgeted | FY05 | FY06<br>(Estimated) | FY07 |
|---------------------------------|----------|------|---------------------|------|
| Federal : ES Section 6<br>Funds | \$37,000 | \$   | \$2,623.86          | \$ 0 |
| State :                         |          |      |                     |      |
| Other :                         |          |      |                     |      |
| <hr/>                           |          |      |                     |      |
| Total Federal :                 | \$37,000 | \$   | \$2,623.86          | \$ 0 |
| Total Match :                   |          |      |                     |      |
| Total Project:                  | \$37,000 | \$   | \$2,623.86          | \$ 0 |

### 5. Objectives:

a. Translocate up to 10 Mariana crow eggs or chicks from Rota to Guam for hand-rearing and then release into the wild the following year in the Munitions Storage Area, Andersen Air Force Base, to reestablish a self-sustaining Mariana crow population on Guam.

b. Band and collect blood samples from all chicks and hatchlings produced on Guam; and tag and instrument all birds for release with radio transmitters.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

This grant was extended in FY07 however funds were not used on this project.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

No crows were translocated from Rota to Guam because the CNMI did not renew required permits.

**9. List any publications or in-house reports resulting from this work.**

The result of this project will be available in DAWR’s annual reports for FY 07.

**Name, title, phone number, and e-mail address of person compiling this report:**

Jeffrey Quitugua, Wildlife Biologist I, 671-735-3956/96, [jeff\\_quitugua73@yahoo.com](mailto:jeff_quitugua73@yahoo.com)

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** E-2-8

**Grant name:** Endangered Species Section 6

**Project number and name:** Segment 8 Guam Endangered Species Recovery

**Subproject and job name and number:** Subproject B: Avicultural Management for Rails, Kingfishers and Crows, Job 1: Captive Propagation of Guam Rails

**2. Report Period:** October 1, 2004 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** 4. Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                          | Budgeted  | FY05<br>(Estimated) | FY06<br>(Estimated) | FY07 |
|---------------------------------|-----------|---------------------|---------------------|------|
| Federal : ES Section 6<br>Funds | \$196,000 | \$51,748.65         | \$41,825.76         | \$ 0 |
| State :                         |           |                     |                     |      |
| Other _____                     |           |                     |                     |      |
| Total Federal :                 | \$196,000 | \$51,748.65         | \$41,825.76         | \$ 0 |
| Total Match :                   |           |                     |                     |      |
| Total Project:                  | \$196,000 | \$51,748.65         | \$41,825.76         | \$ 0 |

### 5. Objectives:

- a. Increase the number of actively breeding pairs of Guam rails at the GDAWR facilities until a maximum of 22 pairs is reached.
- b. Produce at least five Guam rails from each pair of rails annually. (Full production potential of GDAWR will be an average of 110 rails annually.)
- c. Maintain a minimum of 80 individual Guam rails at mainland zoo facilities for captive

breeding.

- d. Equalize founder representation and maintain the genetic diversity of the captive flock at 90% or higher.
- e. Transfer 12 Guam rails to mainland zoos, and 12 Guam rails from zoos to the GDAWR facility every other year to maintain genetic diversity within the captive population.
- f. Build 8 ten stall (equaling 80 individual bird holding cages) steel-framed rail holding cages at GDAWR.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

This grant provided all funding for endangered Guam rail captive propagation on Guam. Other funding was provided by 17 US zoological facilities participating in the Guam Rail Species Survival Plan. Each institution funded the husbandry efforts of maintaining and reproducing rails at their respective facility.

The overall goal of this effort is to increase the captive Guam rail population to supply Guam rails for release into the wild. As the majority of the captive population is located on Guam (78%), our institution is able to reproduce over 95% of rails annually.

**7. Describe how the objectives were met.**

Twelve pairs produced 46 rails in FY05 (average of 3.9 chicks per pair). The mainland rail population remains below 50 and only four birds were transferred from the mainland to Guam. Founder representation was not equalized and genetic diversity stands at 88%. Two ten stall steel-framed holding cages were built utilizing funds from State Wildlife Grant funds and one was built with ES Section 6 Funds.

This grant was extended for the following year, FY06. During this fiscal year, funds from the extended grant were used to purchase various supplies (food, gravel for rail cages, etc.), equipment (for office and field), and a walk-in freezer to store dry goods for the rails.

This grant was extended in FY07, however funds from the extended grant were not used on this project.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Only 12 pairs were established in FY05, and of them, 12 were active. The inability to achieve Objective 1, 2, and 4 was due to the fact that the Wildlife Biologist in charge of the captive breeding facility retired and the position was not filled. The low number of pairs resulted in the low amount of chicks fledging at the facility. Genetic diversity remained below 90% and

founder representation was not equalized (Founder 98 has half the representatives as the other nine founders). The transfer of rails between Guam and the mainland did not take place as genetic diversity was maintained and transfers were not warranted. Only four rails were transferred from the mainland to Guam due to low breeding results in the US zoological facilities. Only three holding pens were constructed this fiscal year because of insufficient funds.

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual reports for FY 07.

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-8

**Grant name:** Guam Endangered Species Section 6

**Project number and name:** Segment 9 Guam Endangered Species Recovery

**Subproject number and name:** Subproject B: Avicultural Support for Rails, Kingfishers and Crows, Job 2: Mariana Crow Aviculture Support

**2. Report Period:** October 1, 2004 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source                       | Budgeted | FY05       | FY06       | FY07 |
|------------------------------|----------|------------|------------|------|
| Federal : ES Section 6 Funds | \$39,000 | \$5,398.78 | \$7,653.00 | \$ 0 |
| State :                      |          |            |            |      |
| Other: _____                 |          |            |            |      |
| Total Federal :              | \$39,000 | \$5,398.78 | \$7,653.00 | \$0  |
| Total Match :                |          |            |            |      |
| Total Project:               | \$39,000 | \$5,398.78 | \$7,653.00 | \$0  |

### 5. Objectives:

- a. From crows on Guam, produce at least one surviving nestling each year per pair through inducement of multiple clutches, including eggs, hand-rearing young, and releasing into the wild.
- b. From up to 10 crow eggs and/or chicks translocated from Rota to Guam annually, artificially incubate, hatch, hand-rear and release into the wild on Guam.
- c. Maintain outdoor aviaries for crows.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

This grant provided all funding for all aviculture support for the endangered Mariana crow.

**7. Describe how the objectives were met.**

Five eggs were pulled from two clutches in FY05. The first clutch of three eggs was pulled for artificial incubation; however two pipped prior to the air cell drawing down while the third was malposition. All three embryos pipped blood vessels and hemorrhaged. The second clutch of two eggs died within the first trimester of artificial incubation. Prior to pulling from the wild, this clutch had three eggs, however, the day of pulling, one egg was missing. One of the pulled eggs had blood on the shell along with a piece of the missing egg's shell. The early embryo death of these two eggs is indicative to trauma occurring at the nest or during transport to the Wildlife Lab.

No crows eggs and/or chicks were translocated from Rota in FY05 due to lack of permits.

Seven crows were housed at the Wildlife Lab in FY05. Six of these crows will be released into the wild while the seventh, due to deformed feet, will remain at the lab and act as a mentor bird for future chicks.

This grant was extended for the following year, FY06. During this fiscal year, funds from the extended grant were used to construct a fence around the crow aviaries as well as purchase incubators.

This grant was extended in FY07, however funds from the extended grant were not spent on this project.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual reports for FY 07.

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Territory of Guam

**Grant number:** E-2-8

**Grant name:** Endangered Species Section 6

**Project number and name:** Segment 8 Guam Endangered Species Recovery

**Subproject and job number and name:** Subproject B: Avicultural Support for Rails, Kingfishers and Crows, Job 3: Captive Propagation of Guam Micronesian Kingfishers

**2. Report Period:** October 1, 2004 to September 30, 2007

**Report due date:** December 31, 2007 [March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source                       | Budgeted | FY05       | FY06       | FY07 |
|------------------------------|----------|------------|------------|------|
| Federal : ES Section 6 Funds | \$78,000 | \$9,284.63 | \$4,142.00 | \$ 0 |
| State :                      |          |            |            |      |
| Other: _____                 |          |            |            |      |
| Total Federal :              | \$78,000 | \$9,284.63 | \$4,142.00 | \$ 0 |
| Total Match :                |          |            |            |      |
| Total Project:               | \$78,000 | \$9,284.63 | \$4,142.00 | \$ 0 |

**5. Objectives:**

- a. Bring to completion Micronesian kingfisher breeding enclosure compete with holding cages, breeding cages and security fence (Phase II and III).
- b. Upon completion of GDAWR kingfisher facility, transfer 3.3 kingfishers from mainland zoos.
- c. Begin captive breeding of kingfishers as breeding facilities are in place.

**6. If the work in this grant was part of a larger undertaking with other components and**

**funding, present a brief overview of the larger activity and the role of this project.**

This grant provided the funds to commence the process of repatriating Micronesian kingfishers to Guam from US zoological facilities for reproduction. Other funding was provided by 11 zoological facilities participating in the Micronesian Kingfisher Species Survival Plan (SSP). Each institution funds the husbandry efforts of maintaining and reproducing kingfishers at their respective facility.

Wildlife Conservation and Restoration Program and State Wildlife Grant money funded construction of holding and captive breeding aviaries for kingfishers on Guam.

The overall goal of this effort is to increase the captive Micronesian kingfisher population to sufficient numbers to begin reintroductions in snake-controlled areas on Guam. Currently, the mainland zoological facilities are unable to accomplish this goal due to high chick and adult mortality. Efforts for DAWR to become involved with the captive breeding program remains the highest priority on Guam and of the SSP as the Micronesian kingfisher will eventually become extinct in captivity on the mainland. It is speculated that the problems the zoo community are encountering are within their inability to completely replicate the natural diet and environment of the kingfisher as well as the population consisting of mostly hand-reared birds.

**7. Describe how the objectives were met.**

The sihek breeding facility was completed in FY05. DAWR currently has three breeding enclosures and five holding pens that can house up to 20 kingfishers.

No birds were transferred from the mainland to DAWR during FY05. Two females were scheduled to arrive in September, however they have been delayed due to *Mycobacterium avium*.

Efforts to reproduce kingfishers in FY05 were successful. Due to the lack of females on island, one pair was formed which produced three clutches totaling seven eggs. The first clutch had two eggs of which only one egg was viable. This egg hatched, however the chick disappeared after a few days. The second clutch consisted of three fertile eggs. One egg was brought to the Wildlife Lab where it successfully hatched and was hand-reared. The fate of one egg is unknown though it is presumed to of hatched while the third egg was found lodged at the base of the nest hole covered with wood shavings. The third clutch consisted of two fertile eggs. Of this clutch, one chick was reared at the lab while the second was kept in the nest log. DAWR staff supplemental fed the chick in the nest for 12 days at four times per day. At the 12<sup>th</sup> day, the male became involved with feeding the chick and by the 15<sup>th</sup> day, DAWR staff no longer needed to supplemental feed. A total of three chicks fledged on Guam this fiscal year.

The grant was extended for the following year, FY06. During this fiscal year, funds were spent purchasing their main food source of geckos.

This grant was extended in FY07, however funds from the extended grant were not spent on this project.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

N/A

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual reports for FY 07.

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-8

**Grant name:** Guam Endangered Species Recovery

**Project number and name:** Segment 8 Guam Endangered Species Recovery

**Subproject number and name:** Subproject C: Development of an experimental population of Guam rails on Rota and other Suitable Islands, Job 1: Establishment of Experimental Population of Guam Rails on Rota and other Suitable Islands

**2. Report Period:** October 1, 2004 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Rota, Commonwealth of the Northern Mariana Islands

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source                       | Budgeted | FY05        | FY06     | FY07 |
|------------------------------|----------|-------------|----------|------|
| Federal : ES Section 6 Funds | \$46,189 | \$49,656.67 | \$707.30 | \$   |
| State :                      |          |             |          |      |
| Other _____                  |          |             |          |      |
| Total Federal :              | \$46,189 | \$49,656.67 | \$707.30 | \$   |
| Total Match :                |          |             |          |      |
| Total Project:               | \$46,189 | \$46,656.67 | \$707.30 | \$   |

### 5. Objectives:

- a. Release at least 100 rails from the captive breeding program at the GDAWR and mainland zoo facilities in the Gampapa and Duge areas, Rota. The rails should be genetically unimportant to the maintenance of the captive gene pool (*i.e.* from over-represented family lines) and in excess numbers needed for maintaining the integrity of the captive populations.

- b. Monitor survival, dispersal, reproduction and establishment of released rails through radio telemetry and surveys.
- c. Identify and eliminate or control factors limiting establishment of rails in the wild on Rota, including trapping and removal of feral cats, monitor lizards, rats, and other potential predators.
- d. Trap wild rails and harness with radio transmitters to gain further knowledge of rail behavior and territory size.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Only 12 rails were released in FY05. All rails had transmitters and telemetry was used (555 bearings) to determine locations of the birds and monitor survival, dispersal, reproduction and establishment. Seventy-seven cats and 2 monitor lizards were trapped in approximately 4050 trap nights on Rota using live traps and leg-hold traps.

This grant was extended in FY06, however this project was not worked on.

This grant was extended in FY07. During this fiscal year, funds from the extended grant were used to purchase travel for two technicians to Rota, a battery for the vehicle in Rota, and rent for the project’s field apartment Rota.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

The release objective of 100 rails was not met in FY05 because the breeding facility was unable to produce sufficient numbers for release. Also, wild rails were not trapped on Rota due to low population densities.

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR’s annual reports for FY07.

**Name, title, phone number, and e-mail address of person compiling this report:**

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**ENDANGERED SPECIES SECTION 6  
E-2-9  
FY 06**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-9

**Grant name:** Endangered Species Section 6

**Project number and name:** Segment 9 Guam Endangered Species Recovery

**Subproject and job number and name:** Subproject A: Avicultural Management for Rails, Kingfishers and Crows, Job 1: Captive Propagation of Guam Rails

**2. Report Period:** October 1, 2005 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated".

| Source                          | Budgeted  | FY06<br>(Estimated) | FY07<br>(Estimated) |
|---------------------------------|-----------|---------------------|---------------------|
| Federal : ES Section 6<br>Funds | \$179,312 | \$7,773.05          | \$40,736.61         |
| State :                         |           |                     |                     |
| Other:_____                     |           |                     |                     |
| Total Federal :                 | \$179,312 | \$7,773.05          | \$40,736.61         |
| Total Match :                   |           |                     |                     |
| Total Project:                  | \$179,312 | \$7,773.05          | \$40,736.61         |

**5. Objectives:**

- a. Increase the number of actively breeding pairs of Guam rails at the GDAWR facilities until a maximum of 22 pairs is reached.
- b. Produced at least five Guam rails from each pair of rails annually. (Full production

potential of GDAWR will be an average of 110 rails annually.)

- c. Maintain a minimum of 40 individual Guam rails at mainland zoo facilities for captive breeding.
- d. Equalize founder representation and maintain the genetic diversity of the captive flock at 90% or higher.
- e. Transfer three ko'ko' to mainland zoos, and 25 ko'ko' from zoos to the GDAWR facility every year to maintain genetic diversity within the captive population, as well as support the release program.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

This grant provided all funding for endangered Guam rail captive propagation on Guam. Other funding was provided by 17 US zoological facilities participating in the Guam Rail Species Survival Plan. Each institution funded the husbandry efforts of maintaining and reproducing rails at their respective facility.

The overall goal of this effort is to increase the captive Guam rail population to supply Guam rails for release into the wild. As the majority of the captive population is located on Guam (78%), our institution is able to reproduce over 95% of rails annually.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Twenty-two pairs produced sixty-six chicks that were banded and added to the captive flock in FY06 (average 3 chicks per pair). Ten deaths occurred at the facility: three from old age related illnesses, one ingested a wire and died after surgery, two from mate trauma, two killed by neighboring birds, and two cause of deaths unknown. Ninety-eight rails were transported to Rota and 96 were released (two arrived dead). Genetic diversity at the Guam facility remains at 88.5% and three rails were transferred from the mainland to Guam from the Milwaukee County Zoo. Wildlife Biologist II Caplan Anderson was hired to manage the Guam Rail Captive Breeding Facility and the Wildlife Lab.

This grant was extended in FY07. During this fiscal year, funds from the extended grant were used to purchase rail food, lab printer ink, a ladder and drill, one rail holding cage, travel for Suzanne Medina to Chicago and Toronto, and the replacement of conduit for the lab generator.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Although the Guam facility achieved its objective of having 22 pairs, not all pairs successfully hatched eggs or fledged chicks. The hiring of Wildlife Biologist Caplan Anderson in April has

greatly increased breeding in the facility and our reproductive goals are expected to be achieved in the upcoming fiscal year. Genetic diversity below the desired goal of 90% is due to behavior difficulties within genetically compatible pairs.

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual report for FY07.

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-9

**Grant name:** Endangered Species Section 6

**Project number and name:** Segment 9 Guam Endangered Species Recovery

**Subproject and job number and name:** Subproject A: Avicultural Management for Rails, Kingfishers and Crows, Job 2: Mariana Crow Avicultural Support

**2. Report Period:** October 1, 2005 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source                       | Budgeted | FY06       | FY07 |
|------------------------------|----------|------------|------|
| Federal : ES Section 6 Funds | \$48,821 | \$2,615.48 | \$ 0 |
| State :                      |          |            |      |
| Other : _____                |          |            |      |
| Total Federal :              | \$48,821 | \$2,615.48 | \$ 0 |
| Total Match :                |          |            |      |
| Total Project:               | \$48,821 | \$2,615.48 | \$ 0 |

**5. Objectives:**

- a. Artificially incubate, hatch, hand-rear and release back into the wild up to nine eggs from nests on Guam.
- b. Prevent imprinting by rearing aga with broodmates and mentor birds.
- c. Maintain outdoor aviaries for crows.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

This grant provides all funding for aviculture support for the Mariana crow. This work is part of a larger undertaking to reestablish Mariana crows in northern Guam. Other grants, such as Office of Insular Affairs Brown Treesnake Control Grant and the Department of Defense Civil Engineering Environmental Section grant fund area-wide snake control measures and the installation of brown treesnake barriers on active Mariana crow nesting trees. Guam Wildlife Restoration Grant W-1R-14 supports search and inventory of released crows.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Only two eggs were pulled for artificial incubation this fiscal year. The first egg produced in October, never completed circulation and the embryo did not hatch (malposition). The second, in December, failed to hatch due to insufficient weight loss.

Supplemental feeding was provided to two pairs in the wild, both which nested and had chicks. Two crows, one non-releasable, were housed at GDAWR.

This grant was extended in FY07, however funds from the extended grant were not used on this project.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Due to only two females in the wild, nine eggs were not reproduced in the wild.

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual report for FY07.

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-9

**Grant name:** Endangered Species Section 6

**Project number and name:** Segment 9 Guam Endangered Species Recovery

**Subproject and job number and name:** Subproject A: Avicultural Management for Rails, Kingfishers and Crows, Job 3: Captive Propagation of Guam Micronesian Kingfishers

**2. Report Period:** October 1, 2005 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”.

| Source                          | Budgeted | FY06<br>(Estimated) | FY07 |
|---------------------------------|----------|---------------------|------|
| Federal : ES Section 6<br>Funds | \$60,000 | \$10,868            | \$ 0 |
| State :                         |          |                     |      |
| Other :                         |          |                     |      |
| _____                           |          |                     |      |
| Total Federal :                 | \$60,000 | \$10,868            | \$ 0 |
| Total Match :                   |          |                     |      |
| Total Project:                  | \$60,000 | \$10,868            | \$ 0 |

**5. Objectives:**

- a. Transfer 2.3 (males. females) to GDAWR in FY06.
- b. Reproduce at least one chick from three pairs in FY06.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

This grant provided the funds to captive breed Guam Micronesian kingfishers on Guam. Other funding was provided by 11 zoological facilities participating in the Micronesian Kingfisher Species Survival Plan (SSP). Each institution funds the husbandry efforts of maintaining and reproducing kingfishers at their respective facility.

The overall goal of this effort is to increase the captive Micronesian kingfisher population to sufficient numbers to begin reintroductions in snake-controlled areas on Guam.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

No objectives were met in FY06. This grant was extended in FY07, however funds from the extended grant were not spent on this project.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

GDAWR is still waiting for the arrival of two females from the Smithsonian’s Conservation Research Center (CRC). These birds were delayed due to positive *Mycobacterium avium* cultures. Communication has been established between the Guam Territorial Veterinarian and CRC and the females are now scheduled to arrive in January 2007.

No reproduction took place on Guam this fiscal year as GDAWR’s only adult female died in October 2005, leaving the facility with no breeding females.

Funds were used this fiscal year (FY06) on maintaining Guam’s captive kingfisher population, consisting on three adult males, two juvenile males, and one juvenile female.

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR’s annual report for FY07.

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-9

**Grant name:** Segment 9 Guam Endangered Species Recovery

**Subproject and job number and name:** Sub-Project B: Development of an Experimental Population of Guam Rails on Rota and Other Suitable Islands, Job 1: Establishment of Experimental Population of Guam Rails on Rota and Other Suitable Islands

**2. Report Period:** October 1, 2005 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”.

| Source                      | Budgeted | FY06<br>(Estimated) | FY07<br>(Estimated) |
|-----------------------------|----------|---------------------|---------------------|
| Federal: ES Section 6 Funds | \$30,000 | \$15,544.01         | \$1,154.05          |
| State:                      |          |                     |                     |
| Other: _____                |          |                     |                     |
| Total Federal:              | \$30,000 | \$15,544.01         | \$1,154.05          |
| Total Match:                |          |                     |                     |
| Total Project:              | \$30,000 | \$15,544.01         | \$1,154.05          |

**5. Objectives:**

- a. Release at least 100 captive bred koko' on Rota. The ko'ko' should be genetically unimportant to the maintenance of the captive gene pool and in excess of numbers needed for maintaining the integrity of the captive populations.
- b. Monitor survival, dispersal, reproduction and establishment of released rails through radio telemetry and surveys.

- c. Identify and eliminate or control factors limiting establishment of rails in the wild on Rota, including trapping and removal of feral cats, monitor lizards, rats and other potential predators.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Ninety-four rails were released on Rota this fiscal year. The first release of 43 rails took place in Apanon in November. This is the first time rails have been released in this area. Rails were hard released and ten had transmitters. In March, two pairs with transmitters were soft released 0.5km from Apanon in Taimanao. This is the second soft release of pairs in Taimanao. The last release was of 47 rails in Apanon in September. No rails in the last release had transmitters.

Of the 14 birds released with transmitters, two were killed by cats, two were killed by monitors, two dropped transmitters, and eight have unknown fates. Territory establishment, pairing and incubation were detected in three pairs before their transmitters failed. Two rails dispersed as far 0.5km from the Apanon release site. In addition, a pair that was soft released in Taimanao land in April 2005 were tracked through March 2006. The pair established a territory at the release site and had at least two sets of chicks by the time their transmitters failed.

Tomahawk live traps baited with dried fish and Bagong shrimp paste was used to capture seven cats and two monitor lizards in 886 trap nights on Rota. One monitor was opportunistically shot. Animals were dispatched using a 22-caliber air rifle.

This grant was extended in FY07. During this fiscal year, funds from the extended grant were used to purchase equipment upgrades (computer hardware), Rota vehicle repair, utilities for Rota apartment, and shipping.

We did not meet the objective of releasing 100 rails (94 released) because we lacked six eligible individuals from our breeding population.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs. N/A**

**9. List any publications or in-house reports resulting from this work.**

The results of this project will be available in DAWR's annual reports for FY07.

**Name, title, phone number, and e-mail address of person compiling this report:**

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**ENDANGERED SPECIES SECTION 6**  
**E-2-10**  
**FY 07**

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-10

**Grant name:** Endangered Species Section 6

**Project number and name:** Segment 10 Guam Endangered Species Recovery

**Subproject and job number and name:** Subproject A: Avicultural Management for Rails, Kingfishers and Crows, Job 1: Captive Propagation of Guam Rails

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted  | Actual ___or Estimated__X_ |
|----------------|-----------|----------------------------|
| Federal :_____ | \$171,000 | \$77,793.87                |
| State          |           |                            |
| Other:_____    |           |                            |
| _____          |           |                            |
| _____          |           |                            |
| Total Federal  | \$171,000 | \$77,793.87                |
| Total match    |           |                            |
| Total project: | \$171,000 | \$77,793.87                |

**5. Objectives:**

- a. Increase the number of actively breeding pairs of Guam rails at the GDAWR facilities until a maximum of 22 pairs is reached.
- b. Produced at least five Guam rails from each pair of rails annually. (Full production potential of GDAWR will be an average of 110 rails annually.)
- c. Maintain a minimum of 40 individual Guam rails at mainland zoo facilities for

- captive breeding.
- d. Equalize founder representation and maintain the genetic diversity of the captive flock at 90% or higher.
  - e. Transfer three ko'ko' to mainland zoos, and 25 ko'ko' from zoos to the GDAWR facility every year to maintain genetic diversity within the captive population, as well as support the release program.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

This grant provided all funding for endangered Guam rail captive propagation on Guam. Other funding was provided by 17 US zoological facilities participating in the Guam Rail Species Survival Plan. Each institution funded the husbandry efforts of maintaining and reproducing rails at their respective facility.

The overall goal of this effort is to increase the captive Guam rail population to supply Guam rails for release into the wild. As the majority of the captive population is located on Guam (78%), our institution is able to reproduce over 95% of rails annually.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Twenty-two pairs produced 119 chicks that were banded and added to the captive flock in FY07 (average 5.4 chicks per pair). Seventeen deaths occurred at the facility: four killed by rats, one killed by a brown tree snake, two were euthanized due to old age and poor quality of life, one ingested a wire and died after surgery, and nine cause of deaths unknown. Sixty-nine rails were transported to Rota and released. Five rails were transferred from the National Zoo to Guam in January. Suzanne Medina traveled to the Lincoln Park Zoo's Population Management Center in August to evaluate the genetics of the Guam and mainland populations of rails. This is the first assessment of both populations performed in almost ten years. Genetic diversity at the Guam facility is at 88.7%.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Genetic diversity below the desired goal of 90% is due to behavior difficulties within genetically compatible pairs.

**9. List any publications or in-house reports resulting from this work.**

GDAWR, Captive Propagation of Guam Rails, Fiscal Year 2007, Guam's Division of

Aquatic and Wildlife Resources' Annual Report, Department of Agriculture.

**Name, title, phone number, and e-mail address of person compiling this report:**

Suzanne Medina, Wildlife Biologist III, 671-735-3985, [medinas@guam.net](mailto:medinas@guam.net).

## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-10

**Grant name:** Endangered Species Section 6

**Project number and name:** Segment 10 Guam Endangered Species Recovery

**Subproject and job number and name:** Subproject A: Avicultural Management for Rails, Kingfishers and Crows, Job 2: Mariana Crow Avicultural Support

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated"

| Source         | Budgeted | Actual ___or Estimated_X__ |
|----------------|----------|----------------------------|
| Federal :_____ | \$43,000 | \$16,218.59                |
| State          |          |                            |
| Other:_____    |          |                            |
| _____          |          |                            |
| _____          |          |                            |
| Total Federal  | \$43,000 | \$16,218.59                |
| Total match    |          |                            |
| Total project: | \$43,000 | \$16,218.59                |

**5. Objectives:**

- a. Artificially incubate, hatch, hand-rear and release back into the wild up to nine eggs from nests on Guam.
- b. Prevent imprinting by rearing aga with broodmates and mentor birds.
- c. Maintain ten outdoor aviaries.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

This grant provides all funding for aviculture support for the Mariana crow. This work is part of a larger undertaking to reestablish Mariana crows in northern Guam. Other grants, such as Office of Insular Affairs Brown Treesnake Control Grant and the Department of Defense Civil Engineering Environmental Section grant fund area-wide snake control measures and the installation of brown treesnake barriers on active Mariana crow nesting trees. Guam Wildlife Restoration Grant W-1R-15 supports search and inventory of released crows.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Three eggs from one nest were pulled in April due to a typhoon threat. Once the storm had passed, two eggs with no sign of development were placed back in the nest. One egg remained at the Wildlife Lab for artificial incubation as it was flawed with cracks and toenail holes. The chick hatched however the umbilicus was not closed and the vitality of the chick was poor at hatching and it subsequently died.

Two crows, one non-releasable, were housed at GDAWR.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

Due to only two females in the wild, nine eggs were not reproduced in the wild.

**9. List any publications or in-house reports resulting from this work.**

GDAWR, Mariana Crow Aviculture Report, Fiscal Year 2007, Guam’s Division of Aquatic and Wildlife Resources’ Annual Report, Department of Agriculture.

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-10

**Grant name:** Endangered Species Section 6

**Project number and name:** Segment 10 Guam Endangered Species Recovery

**Subproject and job number and name:** Subproject A: Avicultural Management for Rails, Kingfishers and Crows, Job 3: Captive Propagation of Guam Micronesian Kingfishers

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007 [Extended to March 31, 2008]

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are "Actual" or "Estimated".

| Source         | Budgeted | Actual ___or Estimated_X__ |
|----------------|----------|----------------------------|
| Federal: _____ | \$54,000 | \$ 22,913.47               |
| State          |          |                            |
| Other: _____   |          |                            |
| _____          |          |                            |
| _____          |          |                            |
| Total Federal  | \$54,000 | \$22,913.47                |
| Total match    |          |                            |
| Total project: | \$54,000 | \$22,913.47                |

**5. Objectives:**

1. Transfer 2.3 (males.females) to GDAWR in FY06.
2. Reproduce at least one chick from three pairs in FY06.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this**

**project.**

This grant provided the funds to captive breed Guam Micronesian kingfishers on Guam. Other funding was provided by 11 zoological facilities participating in the Micronesian Kingfisher Species Survival Plan (SSP). Each institution funds the husbandry efforts of maintaining and reproducing kingfishers at their respective facility.

The overall goal of this effort is to increase the captive Micronesian kingfisher population to sufficient numbers to begin reintroductions in snake-controlled areas on Guam.

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

No objectives were met in FY06. The Guam population remains at 5.1 birds (males:females) and has been waiting the arrival of two females for over two years. Delays range from medical issues of selected females to the unavailability of single females. Guam's one female became of reproductive age this summer, was paired with a male and subsequently laid eggs, though all eggs were infertile.

This grant was extended in FY07, however funds from the extended grant were not used on this project.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

No females arrived from the mainland this fiscal year, which hampered reproduction. Guam's only female became reproductively active this June and was paired with a male. Unfortunately, this pair produced infertile eggs only.

**9. List any publications or in-house reports resulting from this work.**

GDAWR, Captive Propagation of Guam Micronesian Kingfishers, Fiscal Year 2007, Guam's Division of Aquatic and Wildlife Resources' Annual Report, Department of Agriculture.

**Name, title, phone number, and e-mail address of person compiling this report:**

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## Annual Project Performance Report

Guam Division of Aquatic and Wildlife Resources, Department of Agriculture  
FY 2007

**1. State:** Guam

**Grant number:** E-2-10

**Grant name:** Segment 10 Guam Endangered Species Recovery

**Subproject and job number and name:** Sub-Project B: Development of an Experimental Population of Guam Rails on Rota and Other Suitable Islands, Job 1: Establishment of Experimental Population of Guam Rails on Rota and Other Suitable Islands.

**2. Report Period:** October 1, 2006 to September 30, 2007

**Report due date:** December 31, 2007

**3. Location of work:** Guam

**4. Costs:** Please identify sources of federal funds and match and indicate amounts budgeted and spent for each. Indicate if match is in-kind. Indicate in table whether costs are “Actual” or “Estimated”

| Source         | Budgeted | Actual ___or Estimated_X_ |
|----------------|----------|---------------------------|
| Federal: _____ | \$2,549  | \$2,549                   |
| State          |          |                           |
| Other: _____   |          |                           |
| _____          |          |                           |
| _____          |          |                           |
| Total Federal  | \$2,549  | \$2,549                   |
| Total match    |          |                           |
| Total project: | \$2,549  | \$2,549                   |

**5. Objectives:**

1. Release at least 100 captive bred koko’ on Rota. The ko’ko’ should be genetically unimportant to the maintenance of the captive gene pool and in excess of numbers needed for maintaining the integrity of the captive populations.

2. Monitor survival, dispersal, reproduction and establishment of released rails through radio telemetry and surveys.

3. Identify and eliminate or control factors limiting establishment of rails in the wild on Rota, including trapping and removal of feral cats, monitor lizards, rats and other potential predators.

**6. If the work in this grant was part of a larger undertaking with other components and funding, present a brief overview of the larger activity and the role of this project.**

N/A

**7. Describe how the objectives were met. See “Supplemental Information” for additional requirements and “Attachments” for specialized tables.**

Eighty-six rails were released on Rota in FY07; 20 in January (hard-released), 50 in June (48 hard-released, two soft-released), and 16 in September (hard-released). The soft-released birds were a pair and were held in the release cage for 13 days prior to release. All rails were released in the Apanon area of Rota.

Thirty-three rails were harnessed with transmitters to monitor survival, dispersal, reproduction and establishment. Seven instrumented rails were killed by cats, six died of unknown causes, three failed to forage, three dropped their transmitters, four are missing due likely to transmitter failure, and 10 are alive as of September.

Four cats and three monitor lizards were captured with Tomahawk live traps and Victor Oneida size 1.5 leg-hold traps baited with dried fish and shrimp in 924 trap nights on Rota. Animals were dispatched using a 22-caliber air rifle.

**8. Discuss differences between work anticipated in grant proposal and grant agreement, and that actually carried out with Federal Aid grant funds; include differences between expected and actual costs.**

The objective of releasing 100 rails (86 released) was not reached due to a lack of eligible individuals from the Guam rail breeding population.

**9. List any publications or in-house reports resulting from this work.**

N/A

GDAWR, Establishment of Experimental Population of Guam Rails on Rota and Other Suitable Islands, Fiscal Year 2007. Guam’s Division of Aquatic and Wildlife Resources’ Annual Report, Department of Agriculture.

**Name, title, phone number, and e-mail address of person compiling this report:**

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