



Commonwealth of Puerto Rico

Department of Natural and Environmental Resources

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April 14, 2009

Mr. Michael Piccirilli
Chief, Federal Aid Division
US Fish and Wildlife Service
1875 Century Boulevard, Suite 240
Atlanta GA 30345

Dear Mr. Piccirilli:

Enclosed please find a Revised Annual Report for Grant F-35.10 "*Maricao Fish Hatchery Operations and Maintenance*" for the period of January 1, 2008 to December 31, 2008. This revision was made to respond to the concerns of Mr. Fernando Nuñez, from your staff, after reviewing the report we had sent before.

Should you require further information, do not hesitate to contact us.

Cordially,

Miguel A. Garcia, Ph.D
Director
Fisheries and Wildlife Bureau

JMB/vgs

Enclosures

REVISED PROGRESS REPORT
MARICAO FISH HATCHERY OPERATIONS AND MAINTENANCE

State : Puerto Rico
Grant Title : Maricao Fish Hatchery Operations and Maintenance
Grant Number : F-35-10
Period Covered : January 1, 2008 to December 31, 2008

A – MAINTENANCE

Job 1 - Facilities Maintenance

OBJECTIVE 1

To maintain and improve hatchery facilities.

a. Activities

1.1- Maintenance of ponds, water supply system, gabions and hatchery grounds

Control undesirable vegetation in spawning pond (two times per month) and hatchery surroundings (once a week). Clean plastic liners, kettles and valves (after each harvest). Repair and clean sediment trap at the dam (as required). Maintain sidewalks, roads, landscaping and parking gate (once a week), dikes (two times per month), and repair gabions (as required).

- As scheduled

1.2- Maintenance of structures

Includes routine maintenance (daily), reparations (as required) and painting (2 times per year) of the following structures: restrooms, office, future visitor center, nursery, feed and materials storage building, electrical pedestal on the six growout pond kettles, and railing at each walkway above the kettles.

- As scheduled

1.3- Maintenance of concrete tanks

Includes draining and cleaning (two times per month), repair (as necessary), and painting (once per year) five rectangular tanks (three 60'x 17'x 4' and two 60' x 21'x 5'), and twenty-four rectangular tanks (12'x 5'x 2 1/2').

- As scheduled

1.4- Maintenance of equipment

Perform maintenance on the following hatchery equipment: two pick-up trucks, two mule vehicles, trimmers, lawnmowers, blowers, aerators, live hauler tank, water pumps, welder, electrical generator, manholes at the dam, tools, (as necessary).

Perform maintenance on the following nursery equipment: hatching jars, pumps, tanks, filters, glass aquaria, refrigerator, generator, air blower, piping, etc. (as necessary).

- As scheduled

- b. **Job Summary** Maintenance has been performed on the hatchery facilities according to established schedules and procedures. Grass and bushes were trimmed on a biweekly basis. Routine maintenance was performed on the structures. In the same way, concrete tanks were drained, cleaned and repaired as needed.

c. Significant Deviations

No significant deviations occurred

B – OPERATION

Job 2 - Operation of Maricao Fish Hatchery

OBJECTIVE 2

To achieve optimum hatchery production of fingerling fish under prevailing conditions.

a. Activities

2.1- Water quality and pond preparation

Measure and record dissolved oxygen and temperature (every day), secchi disk transparency, nitrite and pH of growout pond water (three times per week), measure and record dissolved oxygen and temperature (before stocking) at each reservoir or private pond stocking site (as required), pond fertilization (as required), and zooplankton sampling and identification in growout ponds (once per week).

- As scheduled

2.2- Fish production

Coordination of broodstock capture, broodstock capture and maintenance, broodstock reproduction, egg disease treatment, coordination of fingerling stocking, stockings of fingerlings, fry transfer to growout ponds, fingerling harvest and transport to reservoir and tilapia and sunfish feeding (as required).

- As scheduled but not at full potential

2.5- Data analysis and computerization

Acquisition and computerization of water quality data, broodstock records, fingerling production and stocking records, analysis and integration of information (as required).

- As scheduled

2.6- Annual Report

Prepare annual report, by Dec 2008

- As scheduled

b. Job Summary

Water quality was measured as proposed. For pond fertilization, we used a combination of inorganic fertilizers and Alfalfa pellets to promote microorganism growth. Adult largemouth bass were fed with tilapia fingerlings.

The following table shows a summary of T(°C), D.O. and pH for the growout ponds, for January 2008 to November 2008.

		Jan 08 – Nov 08
T(°C)	Mean	23.91
	Std Dev	2.09
	Max	28.70
	Min	18.00
O₂ mg/l	Mean	5.04
	Std Dev	0.71
	Max	8.63
	Min	2.50
pH	Mean	8.32
	Std Dev	0.32
	Max	9.00
	Min	8.00

For the month of December the water quality tests were not performed since ponds were empty.

During this year, a total of **242,744** fingerlings were produced at the hatchery. Of this quantity, approximately 21,543 were tilapias, which are mainly used for feed at the hatchery or stocked in private ponds. Nearly 221,201 fingerlings were stocked in 12 reservoirs and private ponds. Among the stocked reservoirs are Cidra, Caonillas, Carraizo, Dos Bocas, Carite, Lucchetti, Cerrillos, Guayabal, Guayo, Patillas, Comerío I and Comerío II. From this amount, 44,360 (20.05%) were largemouth bass, 176,811 (63.72%) were sunfish (bluegill, redear and redbreast) and 30 (0.13%) were tilapias. There was one abbreviated production cycle of sunfish and another production cycle we had programmed was not initiated during the month of November. Despite the fact that during December the production was halted, the total number of fingerlings produced represents an increase of over 58%, as compared to the previous year and over 8% if compared to the annual average (222,163.62) after the hatchery renovation (2000-2007).

b. Significant Deviations

Due to a lack of food and fertilizer, fish production was not performed during December and a decision was taken to stock sunfish fry that were in the growout pond, at a smaller size than usual.

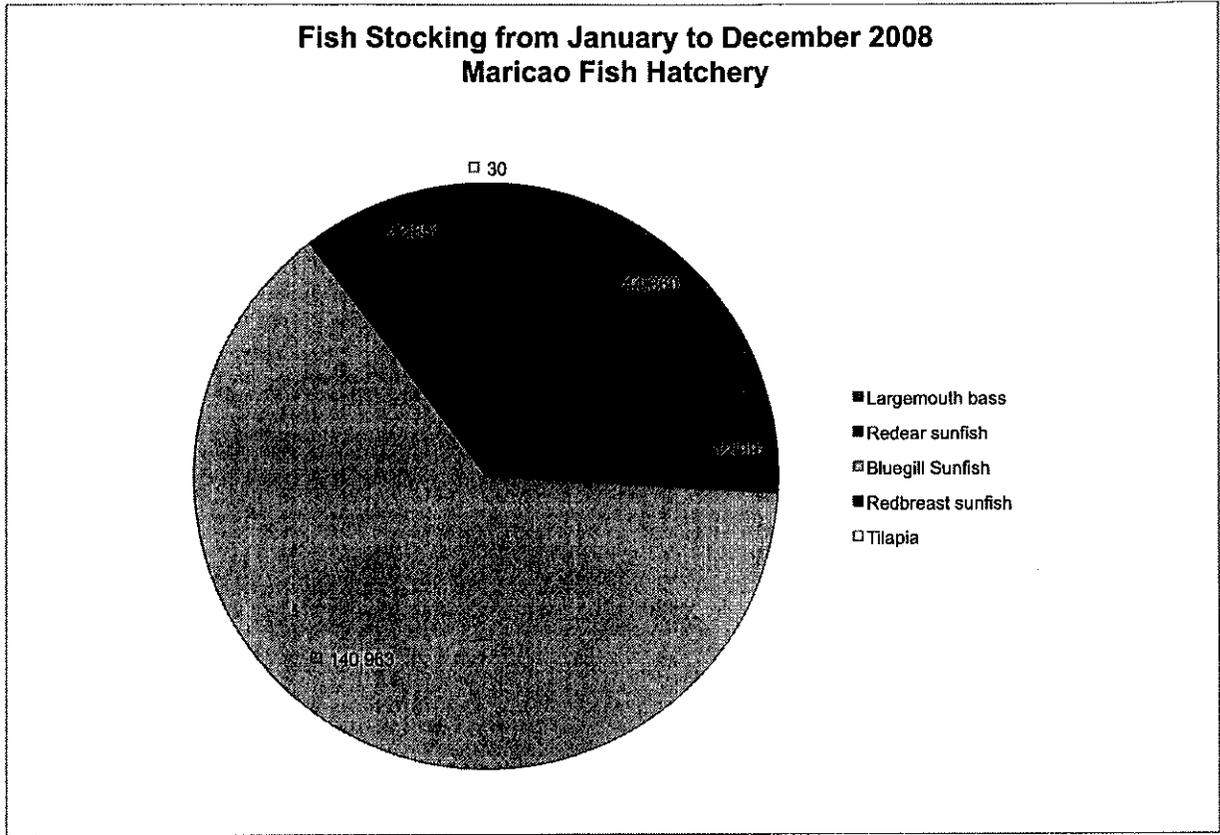


Figure 1. Amount of fingerlings stocked per species from January to December 2008.

Prepared by María de Lourdes Olmeda, M.S.