



GOVERNMENT OF PUERTO RICO
Department of Natural and Environmental Resources

MAR 29 2012

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

Dear Mr. Piccirilli:

Please find enclosed the Interim Annual Report for Grant F-35-13 (F11AF00752) "Maricao Fish Hatchery Operation and Maintenance" for the period of January 1, 2011 to December 31, 2011.

Should you require further information, do not hesitate to contact Mr. Jose M. Berríos, Federal Assistance Coordinator, at 787-999-2200 x-2601 and 2612 or by e-mail at jberrios@drna.gobierno.pr.

Cordially,

Miguel A. Garcia
Director
Fisheries and Wildlife Bureau

JMB/vgs
Enclosures

INTERIM REPORT
MARICAO FISH HATCHERY OPERATIONS AND MAINTENANCE

State : Puerto Rico
Grant Title : Maricao Fish Hatchery Operations and Maintenance
Grant Number : F-35-13 (F11AF00752)
Period Covered : January 1, 2011 to Dec 31, 2011

A – MAINTENANCE

Job 1 - Facilities Maintenance

OBJECTIVE 1

To maintain and improve hatchery facilities.

a. Activities

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

Maintenance of structures

Includes routine maintenance (daily), reparations (as required) and painting (2 times per year) of the following structures: restrooms, office, nursery, experimental tanks and their roofs, photoperiod building, quarantine building, feed and materials storage building, electrical pedestal on the six growout pond kettles, and railing at each walkway above the kettles. Cleaning and sterilization of the nursery floor nursery (as required).

- Not as scheduled

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').

- Not as scheduled

Maintenance of equipment

Perform maintenance on the following hatchery equipment:
two pick-up trucks, three utility vehicles (2 Mules and 1 Kubota), 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 was performed on the hatchery facilities according to established schedules and procedures whenever possible. 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. Painting was not possible in all the structures or concrete tanks.

c. Significant Deviations

The year 2011 had unusual rain activity. Most of the year, it rained intensively, registering new precipitation records on many places in the Island. For this reason and due to the high humidity at the Maricao Fish Hatchery, it was not possible to paint all the structures and the concrete tanks as planned. If weather conditions improve the activity will be finished before June 30th.

B – OPERATION

Job 2 - Operation of Maricao Fish Hatchery

OBJECTIVE 2

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

a. Activities

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

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 hauling to reservoir and tilapia and sunfish feeding (as required).

- As scheduled

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

Annual Report

Prepare annual report, by March 31, 2012

- 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 produced at the Hatchery.

The following table shows a summary of T(°C), D.O. and pH for the growout ponds, for January to December 2011.

| | | Jan 11 – Dec 11 |
|---------------------------|---------|------------------------|
| T(°C) | Mean | 24.72 |
| | Std Dev | 1.85 |
| | Max | 28.30 |
| | Min | 19.40 |
| O₂ mg/l | Mean | 5.44 |
| | Std Dev | 1.26 |
| | Max | 10.46 |
| | Min | 1.71 |
| pH | Mean | 9.44 |
| | Std Dev | 1.16 |
| | Max | 10.90 |
| | Min | 5.00 |

Even though low dissolved oxygen level was recorded (1.71 mg/l) on May 26, the fingerling harvest was successful because of appropriate pond management including water flow application and activation of the pond aeration system.

During this year, a total of **164,658** fingerlings were produced at the hatchery. Of this quantity, approximately 22,811 were tilapias, which are mainly used to feed

broodstock at the hatchery or are stocked in private ponds. Nearly 142,114 fingerlings were stocked in 6 reservoirs and private ponds. Among the stocked reservoirs are Caonillas, La Plata, Guajataca, Cidra, Dos Bocas and Carite. From this amount, 125,461 (88.28%) were largemouth bass, 16,386 (11.53%) were redear sunfish and 267 (0.19%) were tilapias.

c. Significant Deviations

No significant deviations occurred.

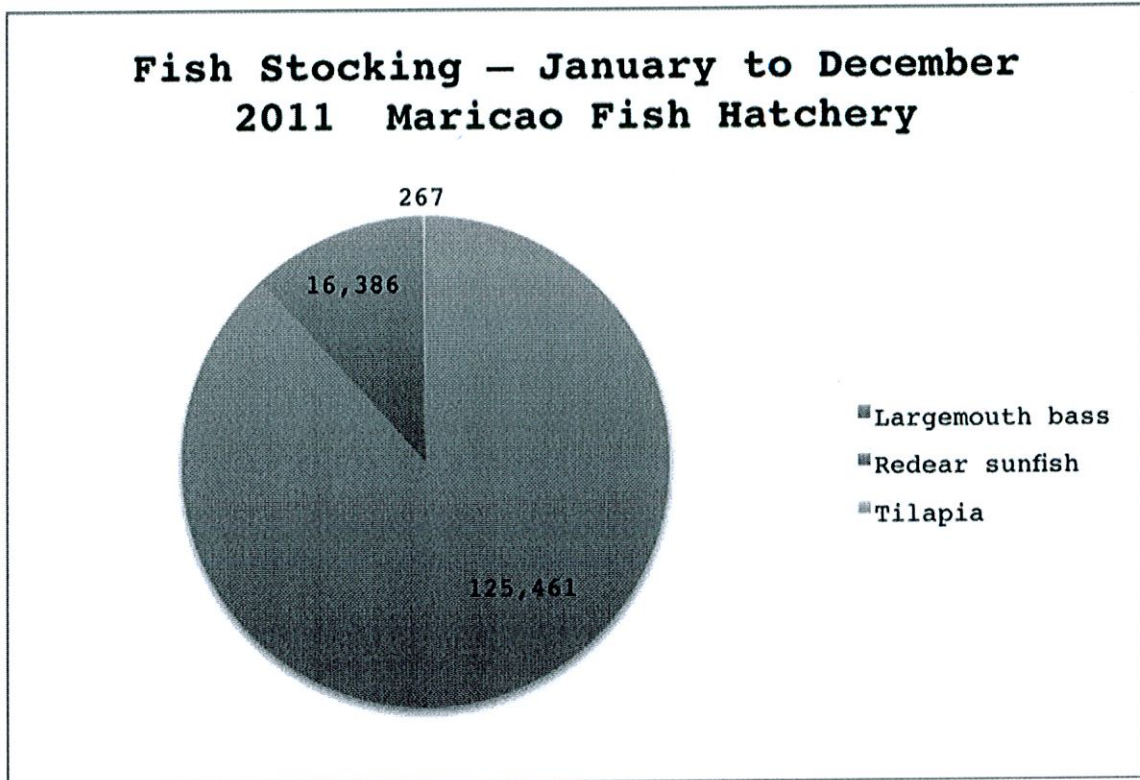


Figure 1. Quantity of fingerlings stocked per species from January to December 2011.

Prepared by María de Lourdes Olmeda, M.S. – Project Leader