



PD/A CRSP SIXTEENTH ANNUAL TECHNICAL REPORT

NEW SITE DEVELOPMENT AND CHARACTERIZATION—KENYA

Eighth Work Plan, Kenya Research 1 (KR1)
Abstract

Karen Veverica
Department of Fisheries and Allied Aquacultures
Auburn University, Alabama, USA

Jim Bowman
Department of Fisheries and Wildlife
Oregon State University
Corvallis, Oregon, USA

ABSTRACT

Site development and characterization activities for the new prime site at Sagana, Kenya, began immediately upon arrival of the Africa Project's resident researcher, Karen Veverica, on 31 March 1997. Major undertakings that were required to make the site suitable for CRSP research included modification of the existing ponds, refurbishment of the water quality laboratory, acquisition of suitable laboratory and farm supplies and equipment, installation of a weather monitoring and recording (datalogger) system, and acquisition of a new computer system and an appropriate four-wheel-drive vehicle. Pond and laboratory renovations proceeded rapidly, and the major portions of these tasks were complete by the end of September 1987. Four existing 4000-m² production ponds were modified to create twelve 800-m² ponds of uniform size and shape for CRSP research. Extra soil from the pond renovation was used to make seven additional ponds, ranging from 800 m² to 1500 m², which will be used as holding ponds, for fry production, or for activities requiring the use of hapas. Three of the extra ponds have dimensions appropriate for experimental work. Farm and laboratory supplies and equipment, including a new desktop computer, laboratory instruments, and seines, were shipped from the US on 30 June and arrived at Sagana on 3 September. A Land Rover was purchased from the United Kingdom and shipped to Kenya on 1 July, becoming available for project use in mid-September. Installation of the weather monitoring system was begun at the end of November and weather data were recorded beginning the first week of December. In addition, observations on pond soil and source water chemistry and annual weather patterns were begun to allow complete characterization of the new site. Initial pond soil samples were collected in October 1997, and water samples for source water characterization were collected starting in October 1997. Weather data recording was begun in December 1997. Solar radiation, photosynthetic active radiation (PAR), precipitation, relative humidity, wind speed, and air temperature were recorded hourly. Four temperature probes were suspended in one pond (D6) to record pond temperature at 5, 25, 50, and 75 cm depth as of April 1998. Preliminary analyses of pond soil samples indicate that they are mainly of the "black cotton soils" variety, high in 2:1 type clay minerals (70 to 90% clay), with cation exchange capacities typical for that type of soil (30 to 55 meq 100 g⁻¹), and pH values ranging from 5.4 to 7.5. Lime will be required to ensure that carbon is not limiting in fertilization experiments or during production cycles. Lime requirements of 5 to 10 tons ha⁻¹ have been calculated. The phosphorus adsorption capacity of these soils is expected to be quite high. Total alkalinity and total hardness levels of water provided to the Sagana ponds through the 2-km canal system are typically 10 to 20 mg l⁻¹ as CaCO₃. Conductivity was measured at 0.05 mmho cm⁻¹. Detailed characterization of the pond soils and source waters for the Sagana station, as well as a summary of the first year's weather, will be included in the final report for this activity.

