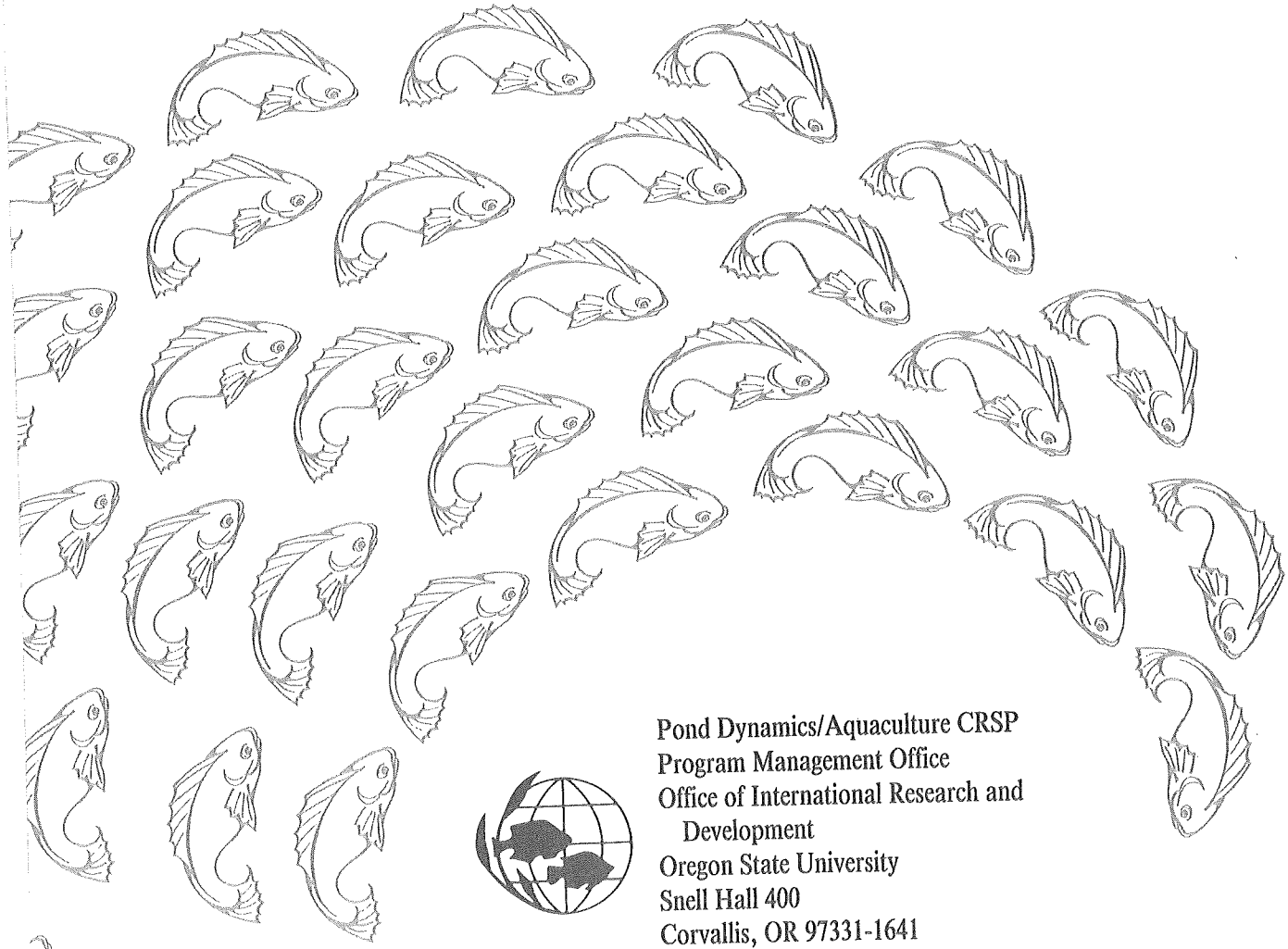
Pond Dynamics/Aquaculture Collaborative Research Data Reports

Cycle I of the CRSP Global Experiment

Volume Five, Number One Rwanda Project



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POND DYNAMICS/AQUACULTURE COLLABORATIVE RESEARCH DATA REPORTS

Volume Five, Number One.
Rwanda: Cycle I of The Global Experiment

October 11, 1989

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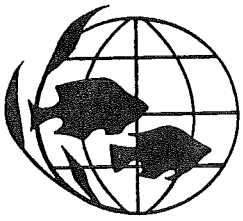
Felicien Rwangano, and Wayne K. Seim



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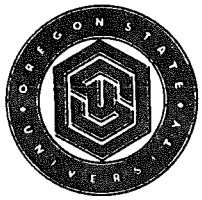

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FOREWORD

The Pond Dynamics/Aquaculture Collaborative Research Support Program (PD/A CRSP) represents an international community of researchers and institutions dedicated to strengthening health and nutrition in developing countries by improving the efficiency of pond aquaculture systems. It is one of several agricultural CRSPs supported by the U.S. Agency for International Development under the authority of Title XII of the International Development and Food Assistance Act of 1975.

The "Global Experiment" in Pond Dynamics/Aquaculture is the major CRSP research activity, covering the period from 1982 to 1987. The Global Experiment was designed to quantitatively describe the physical, chemical and biological principles of pond culture systems. The information gained from the Global Experiment will be used to improve production technologies and develop quantitative production functions to facilitate rigorous economic analyses of aquaculture systems.

Standardization is a key element of the Global Experiment. Standardization permits the comparison of data from diverse geographic locations. The experimental design involves monitoring specified environmental and fish production variables in accordance with standardized work plans in twelve or more ponds at each of seven geographical locations. The variables observed, frequency of observation, and materials and methods are uniform for all locations. The field data are filed in a centralized data base, called the CRSP Central Data Base. Statistical methods will be used to test hypotheses about correlations between variables and to evaluate the sources of variance within ponds, between ponds within locations, and between locations.

The CRSP Central Data Base will be used to develop predictive models of the processes occurring in pond culture systems. The models will be used to: provide guidance for ongoing and future research; predict the performance of existing and proposed pond systems subject to specific inputs and constraints; and improve the operation and efficiency of pond culture systems.

The Global Experiment includes three cycles of experiments. Each cycle consists of two series of observations, one during the dry season and one during the wet season. The objective of the first cycle is to create a detailed baseline of chemical, physical, and biological data on all ponds treated with a standard level of inorganic fertilizer. In the second experimental cycle, ponds treated with inorganic fertilizer are compared to ponds treated with organic fertilizer. In the third cycle, the responses of ponds to different levels of organic fertilizer are compared.

The goal of the Pond Dynamics/Aquaculture Collaborative Research Data Reports (referred to as Data Reports) is to record the CRSP Central Data Base and to present interpretations of site specific results. The Pond Dynamics/Aquaculture CRSP has conducted the Global Experiment at seven project sites in six developing countries: Thailand, Indonesia, the Philippines, Panama, Honduras, and Rwanda. The first volume of these reports provides descriptive information for each CRSP site. It presents the physical characteristics of each site, including a geographical sketch, climatology, and water and soil analyses. Experimental cycles are described in CRSP Work Plans One to Three, which are summarized in the first volume.

Volume One will serve as the reference volume for the entire report series. Subsequent volumes will focus on each site separately. Each Data Report will include one cycle (wet and dry seasons) of the Pond Dynamics/Aquaculture CRSP Global Experiment. Therefore, with few exceptions, each project site will have three Data Reports devoted to it, representing the results of the three cycles of the Global Experiment. Cycle I of the Global Experiment in Rwanda is presented in this volume.

INTRODUCTION

The Rwanda project is one element of the Pond Dynamics/Aquaculture CRSP. The long-range goal of the CRSP is to increase the availability of animal protein in less developed countries through a better understanding of pond processes over a wide range of tropical environments. The primary objective of Cycle I investigations was to estimate the natural production and variability of ponds. The investigations were designed to calibrate the pond systems and establish a data base that could be used as a basis for more complex experiments.

MATERIALS AND METHODS

Standardized experiments were conducted at all seven CRSP sites. In Rwanda, the methods and frequency of measuring each variable followed the CRSP protocol, which is available in Volume I of Collaborative Research Data Reports.

Twenty-one ponds, 40 x 15 x 0.90 meters, were constructed at the Rwasave Fish Culture Station on the Butare campus of the Universite Nationale du Rwanda. Routine measurements made throughout the year included: rainfall, air temperature, water temperatures, solar radiation, and wind speed. An extensive series of limnological measurements accompanied the Cycle I experiments (Appendix). Soil samples also were taken of the pond bottoms before and after each set of experiments.

The original experimental design for the Cycle I experiments included the estimation of seasonal differences between wet and dry seasons on fish production, and biological, chemical, and physical conditions. Delays in pond construction resulted in postponing the estimation of differences between wet and dry seasons. Instead, two experiments, each lasting 150 days, were conducted to estimate natural production levels on an annual basis.

Ponds were stocked with Oreochromis niloticus (*Tilapia nilotica*) males that weighed 30 to 40 grams. The sex of the fish was established by two independent examinations. Fish were randomly selected to be stocked in specific ponds. All ponds received triple super phos-phate fertilizer at the low level of 8 kg/ha/month to decrease wide differences in natural variability.

RESULTS

Temperature

The 1,700 meter elevation at the Rwasave Station creates a cool, moist, tropical environment throughout most of the year. Rwanda has a distinct but brief dry season that typically occurs from June through August (Figure 1). The first experiment began on 26 February 1986 and terminated on 22 July. Rainfall in April was intense, averaging 1.4 cm/day, but there were only traces of rainfall in June and July. The average rainfall in the first experiment was 0.40 cm/day, and the average rainfall during the second experiment (1 October to 26 February) was 0.34 cm/day.

Solar radiation was highest from October until January, and lower levels were meas-ured with the dense cloud covers and rainfall of March and April (Figure 2). Higher solar radiation levels might have been expected from June to August, the dry season, but dust and hazy conditions resulted in moderate light levels.

Mean pond temperatures for Experiment 1 were significantly lower in June and July, experimental weeks 17 to 22 (Figure 3), when mean pond temperatures ranged between 16.7°C (SD = 0.48) and 20.8°C (SD = 0.37). The lack of cloud cover in these dry months permitted maximum night radiation resulting in low pond temperatures. Dust particles in the atmosphere permitted only moderate day solar radiation, but did little to decrease night radiation. Ponds were typically thermally stratified during the day, but mixed during the night. The thermal stratifications resulted in a temperature difference of several degrees between the surfaces and bottoms of the ponds (Figures 4 and 5). The relationship between maximum top and minimum bottom temperatures to mean pond temperatures indicates the thermal range of environments available to *O. niloticus* in Rwandan ponds at an elevation of 1700 meters.

Dissolved oxygen

Dissolved oxygen (DO) remained at moderate concentrations during both Cycle I experiments. Increases in production caused by the low levels of phosphate added to the ponds did little to increase night pond respiration and decrease DO concentrations. The difference between surface and bottom DO measurements in the second experiment indicates an increased oxygen demand of the bottom sediments. This was probably a result of sediments in the newly constructed ponds that were beginning to acquire enough unoxidized organic matter to exert a higher oxygen demand on the water column. The differences in surface and bottom DO concentration are evident after week 17 in the first experiment (Figure 6), and are evident throughout the second experiment (Figure 7).

Fish Growth and Production

The rate of change in fish weight over the 150 days was similar for both experiments (Figure 8). *O. niloticus* stocked in the first experiment were about 10 grams heavier than those stocked in the second experiment (Table 1), but this did not seem to affect the rate of growth. The estimated mean net production for the first experiment was higher (2.04 kg/ha/day, SE = 0.20) than the second experiment (1.50 kg/ha/day, SE = 0.20).

Variability Between Individual Ponds

Duncan's Multiple Range Test was used to determine significant differences (Alpha = 0.05) between mean values of each pond. With few exceptions, there were significant differ-ences in measured variables between ponds. During the first experiment, ammonia, primary production, and maximum bottom temperatures were not significantly different between ponds. In the second experiment, total phosphorus was the only variable that was not significantly different between ponds.

Pond C7 had the lowest mean fish weight (37.6 gm/fish) in Experiment 1, and the second lowest mean fish weight (49.5 gm/fish) in Experiment 2 (Table 4). By contrast, B1 had the highest mean fish weight in both experiments. The ranking of ponds on the basis of mean fish weight at the conclusion of the experiments varied, but there was a general pattern. Ponds that ranked highest in fish production during Experiment 1 were the highest in fish production in Experiment 2.

Rankings of ponds on the basis of chlorophyll *a* and total hardness (Tables 2 and 3) showed Pond C7 to be lowest in chlorophyll *a* in both experiments and lowest in total hardness in Experiment 2. Pond B1 was highest in chlorophyll *a* in Experiment 1, but ranked fifth in Experiment 2. There was a good correlation between chlorophyll *a* and fish production (r^2= .664), but other variables did not show any significant correlations.

DISCUSSION

The experimental fish ponds at Rwasave Station are relatively cool for an equatorial environment, having a mean water temperature of about 21°C. Water temperatures were lowest during June, July, and August, but fish continued to grow during all seasons.

Fish production was greatest during Experiment 2 (October to February). Solar radia-tion during both experiments was comparable, but night radiation decreased pond temperatures during Experiment 1. Growth rates during Experiment 1 were probably affected because of the recent construction of the ponds, and the lack of organic content of the sediments. The effects of sediments on pond production could not be documented on the basis of soil samples taken before and after the experiments, but the lack of a sufficient aging period probably affected fish production in the ponds. However, the higher pond temperatures in the second set of experiments were probably most important in increasing fish production.

The Cycle I experiments were designed to estimate natural fish production over all seasons. Less critical but important objectives were to estimate the causative relationships between physico-chemical or biological factors and fish production. These relationships were difficult to establish although a suggestive relationship of chlorophyll *a* and fish production was shown for Experiment 1. It is necessary to increase the data base to clearly demonstrate a quantitative relationship between chlorophyll *a* and fish production.

Significant differences were found between environmental factors of individual ponds. Results from the two sets of experiments indicate that some difference between ponds are persistent and carry over to successive experiments. Residual effects of previous treatments will be superimposed on subsequent experiments conducted in the ponds. Higher treatment levels of organics or commercial fertilizers could overwhelm this base variability, but these persistent effects should be accounted for in later experiments. Removing or mixing bottom sediments may assist in reducing but may not eliminate these effects. Thus, the presence of those ponds persistently different from the rest should be recognized when assigning experimental treatments and when explaining results.

Table 1. Mean fish sample weight through time.

Month	Experiment 1 Fish wt (g)	Experiment 1 SD	Experiment 2 Fish wt (g)	Experiment 2 SD
0	29.92	8.03	41.60	15.91
1	36.42	9.12	46.10	15.63
2	39.42	9.28	52.40	14.95
3	45.67	8.46	56.10	15.01
4	49.67	9.64	63.90	15.87
5	56.83	9.23	68.20	15.41

Table 2. Variability of mean total hardness measurements between ponds. Alpha = 0.05. Means with the same letter are not significantly different.

Pond	N	Mean Hardness	Duncan Grouping		
Experiment 1					
D6	20	106.10		A	
D9	20	105.75		A	
D3	20	103.75		A	
C7	20	101.40	B	A	
D5	20	99.80	B	A	
C8	20	97.25	B	A	
D1	20	95.85	B	A	
C5	20	94.45	B	A	
C3	20	93.50	B	A	
D10	20	89.80	B		C
C2	20	89.75	B		C
B1	20	80.10			C
Experiment 2					
C3	21	65.90		A	
D3	21	64.43		A	
C5	21	64.24		A	
D1	20	62.05	B	A	
D6	21	61.05	B	A	C
D5	21	58.81	B	D	C
B1	20	57.90	B	D	C
D9	21	55.76		D	C
C2	21	54.29		D	
C7	21	53.67		D	

Table 3. Variability of chlorophyll *a* measurements between ponds. Means with the same letter are not significantly different.

Pond	N	Mean Chlorophyll a	Duncan Grouping			
Experiment 1						
B1	12	50.92		A		
C5	12	35.17		B		
C2	12	28.17	C	B		
C3	12	26.33	C	B	D	
D10	12	22.33	C	B	D	E
D1	12	18.42	C		D	E
C8	12	17.83	C		D	E
D6	12	14.00	C		D	E
D3	12	13.42	C		D	E
D5	12	12.17	C		D	E
D9	12	10.67			D	E
C7	12	7.25				E
Experiment 2						
D1	12	36.25		A		
C3	12	30.50	B	A		
D9	12	27.83	B	A		
C2	12	25.33	B	A	C	
B1	12	25.08	B	A	C	
C5	12	19.25	B	D	C	
D5	12	13.42		D	C	
D6	12	13.33		D	C	
D3	12	13.08		D	C	
C7	12	8.83		D		

Table 4. Variability in fish mean weight (grams) over five months for each pond. Ponds with the same letter are not significantly different by Duncan's Multiple Range Test.

Pond	N	Mean Weight	Duncan Grouping		
Experiment 1					
B1	5	45.40		A	
C2	5	41.40		A	B
C3	5	41.40		A	B
D10	5	41.20		A	B
C5	5	41.00		A	B
D3	5	40.60		A	B
C8	5	40.40		A	B
D9	5	39.40			B
D6	5	38.80			B
D5	5	38.60			B
D1	5	38.00			B
C7	5	37.60			B
Experiment 2					
B1	6	67.83	A		
C5	6	61.67	A	B	
D1	6	57.00	C	B	
D9	6	55.00	C	B	D
C2	6	54.00	C		D
C3	6	53.17	C		D
D5	6	50.67	C		D
D6	6	50.33	C		D
C7	6	49.50	C		D

Figure 1. Mean rainfall in cm/day at Rwasave Station (Station Piscicole de la Faculte d' Agronomie de Rwasave, Universite Nationale du Rwanda) during the Cycle I experiments

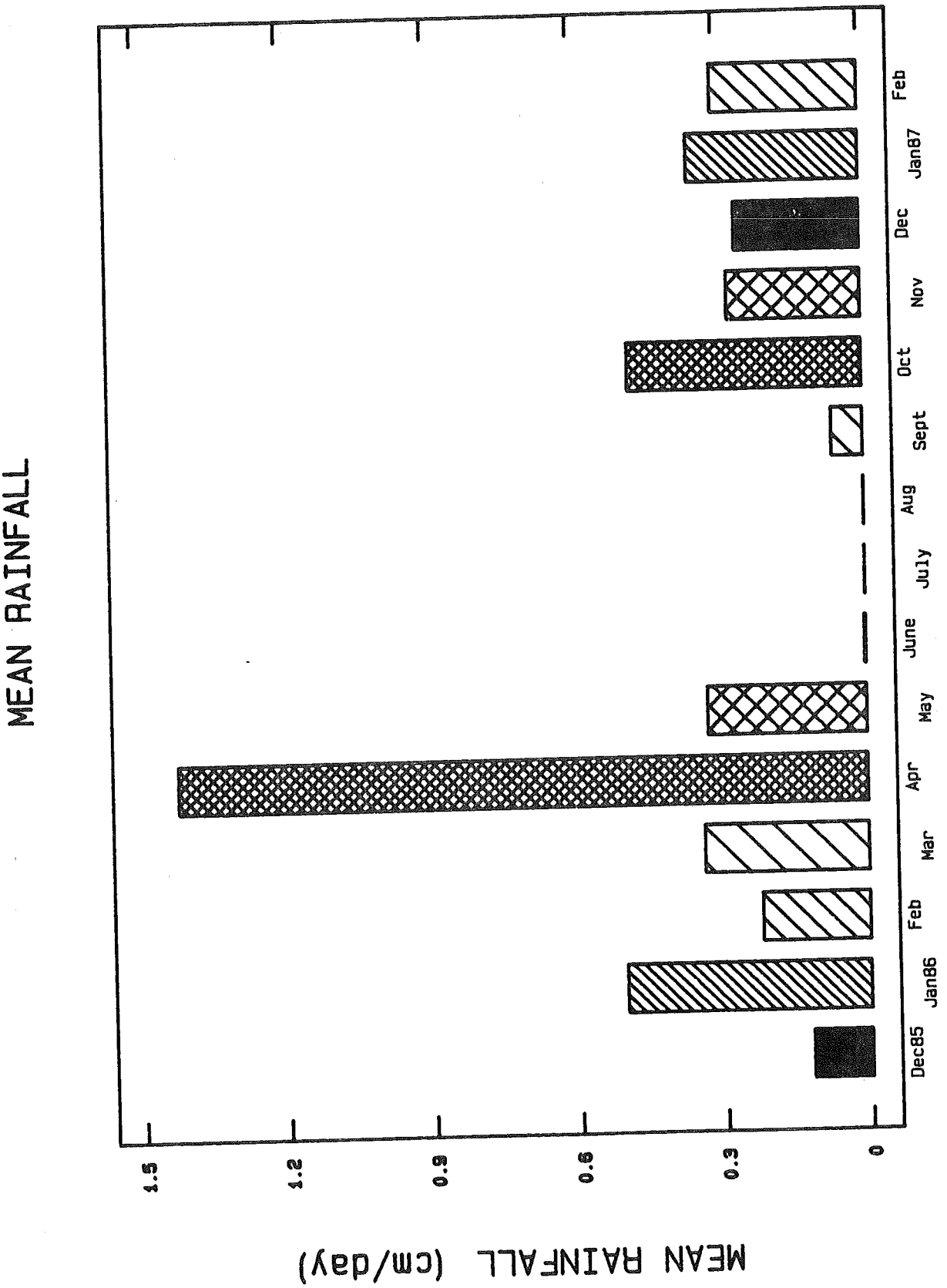

Figure 2. Five-day mean solar radiation in Einsteins/m^2/day at the Rwasave Station

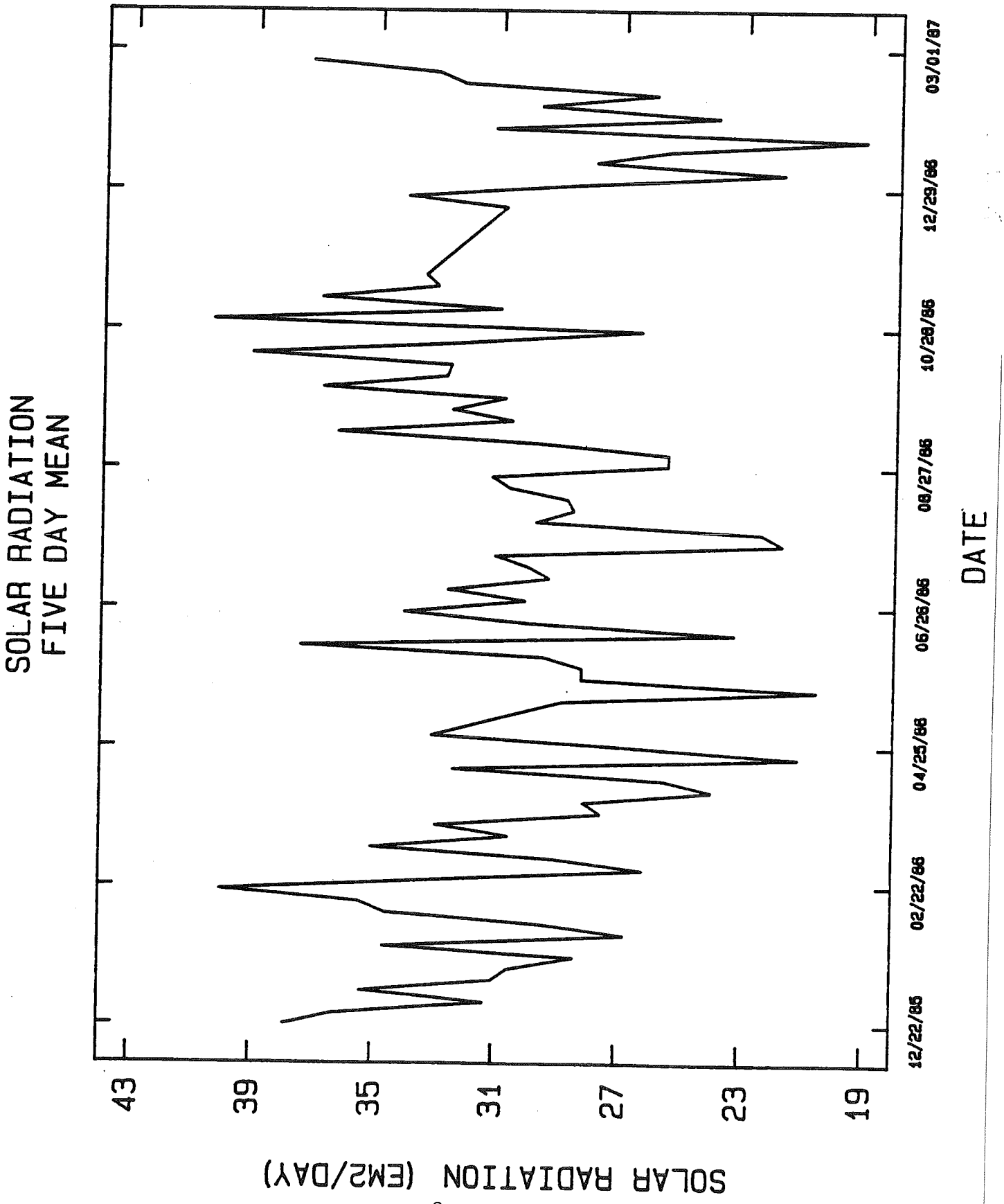

Figure 3. Mean weekly pond temperature (±) SE for both experiments

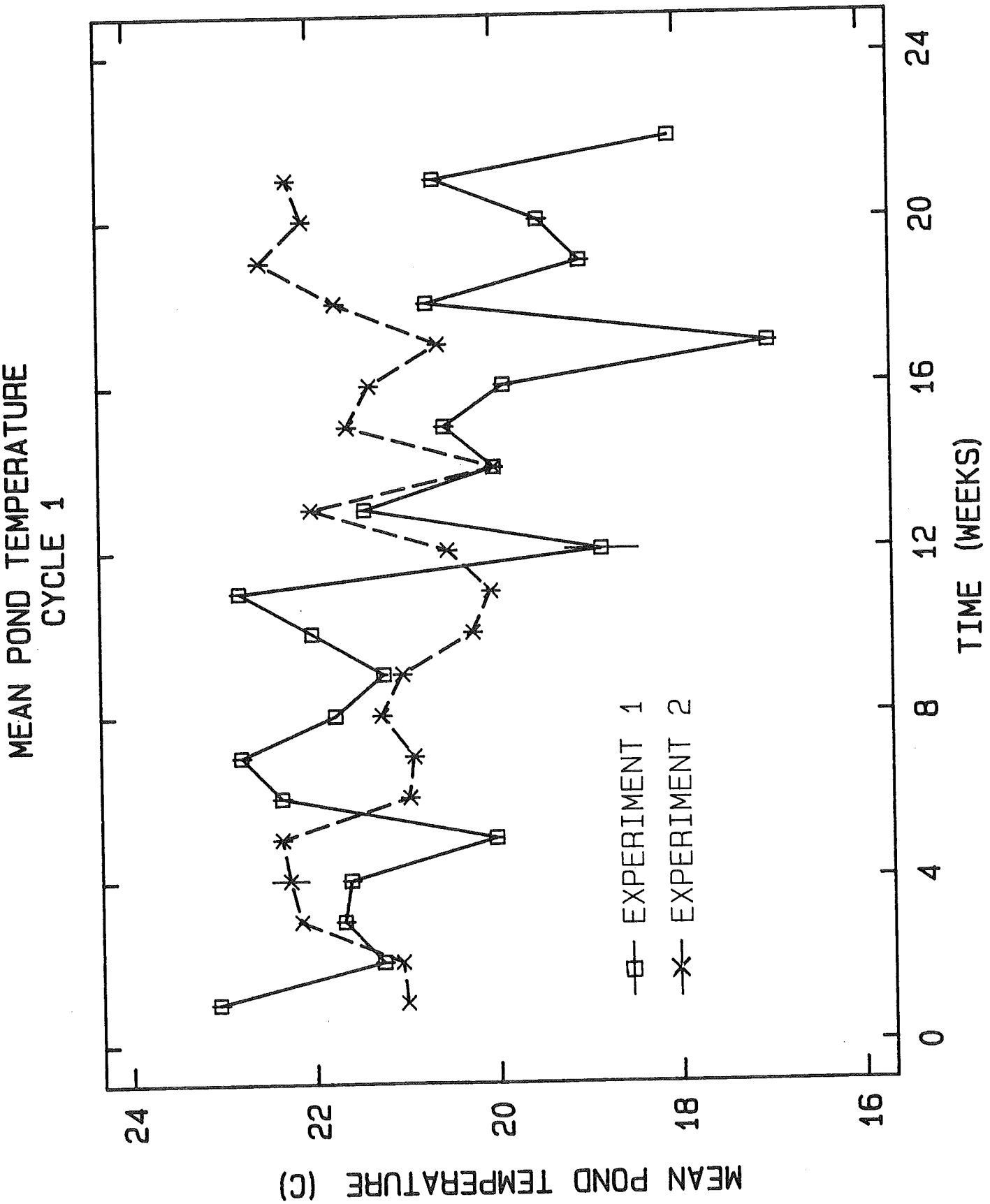

Figure 4. Weekly mean values for top maximum, whole pond, and bottom minimum water temperatures for Experiment 1. SE shown for mean whole pond temperature

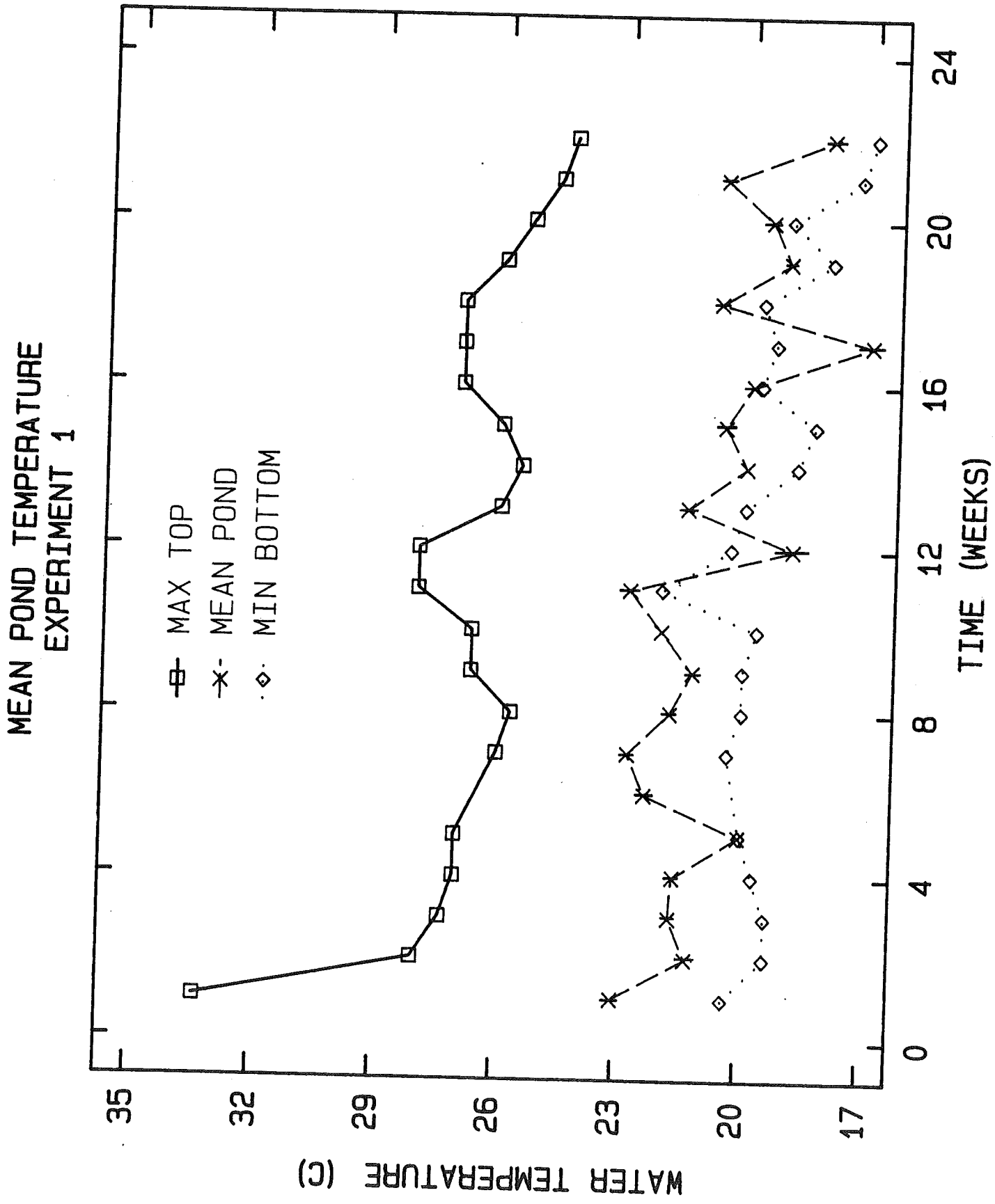

Figure 5. Weekly mean values for top maximum, whole pond, and bottom minimum water temperatures for Experiment 2. SE shown for mean whole pond temperature

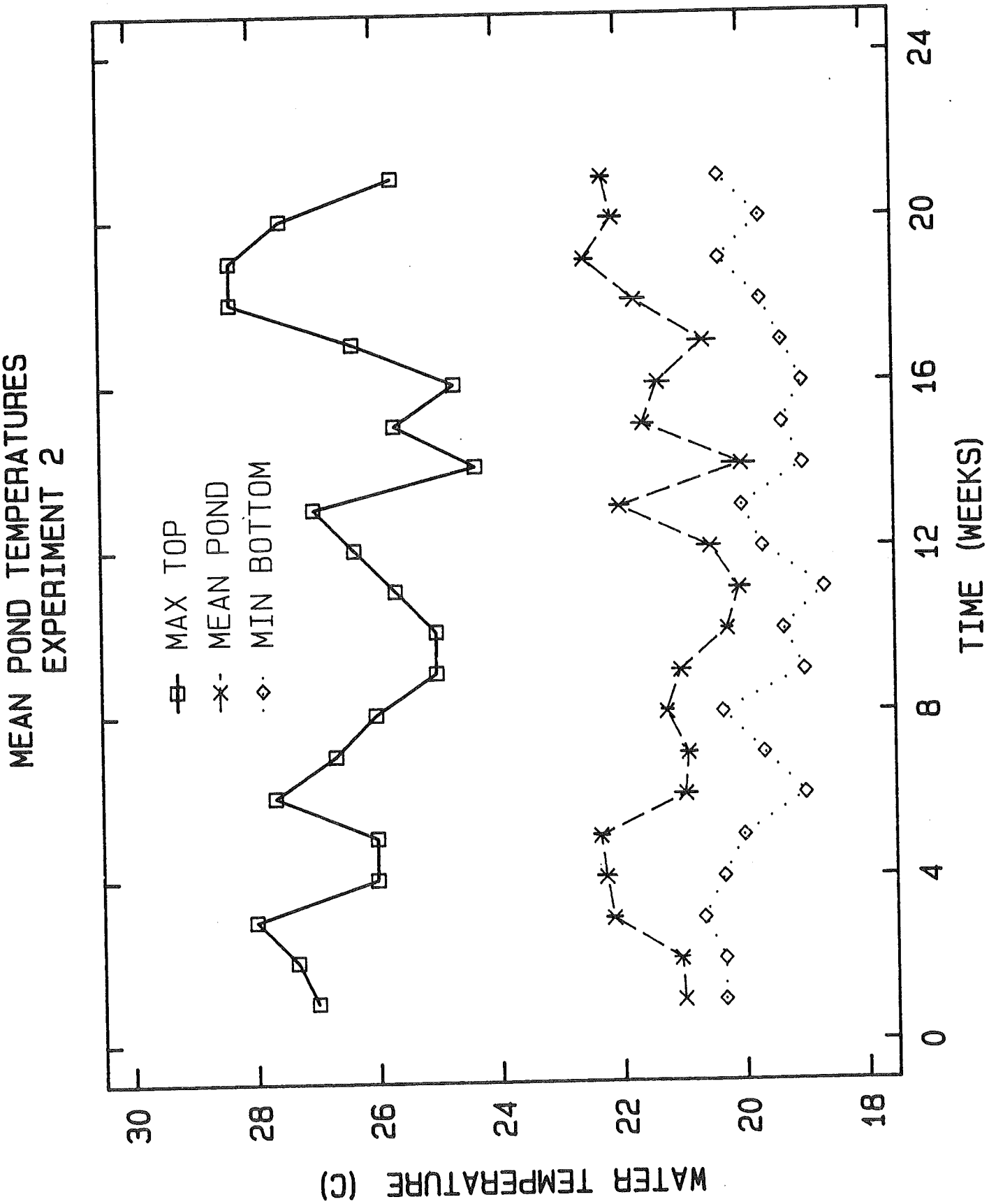

Figure 6. Weekly mean dissolved oxygen concentrations (±SE) for pond top and bottom, Experiment 1

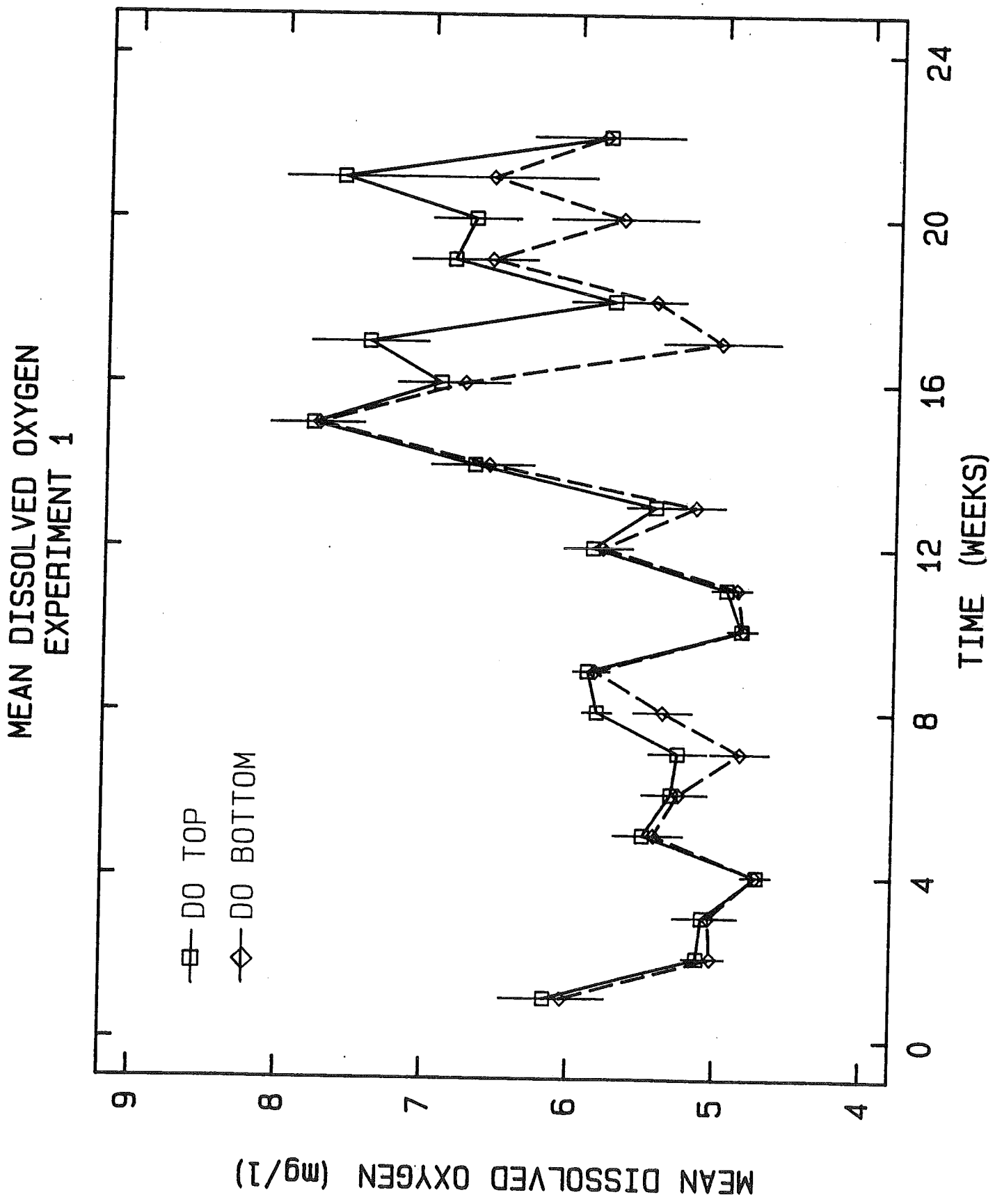

Figure 7. Weekly mean dissolved oxygen concentrations (±SE) for pond top and bottom, Experiment 2

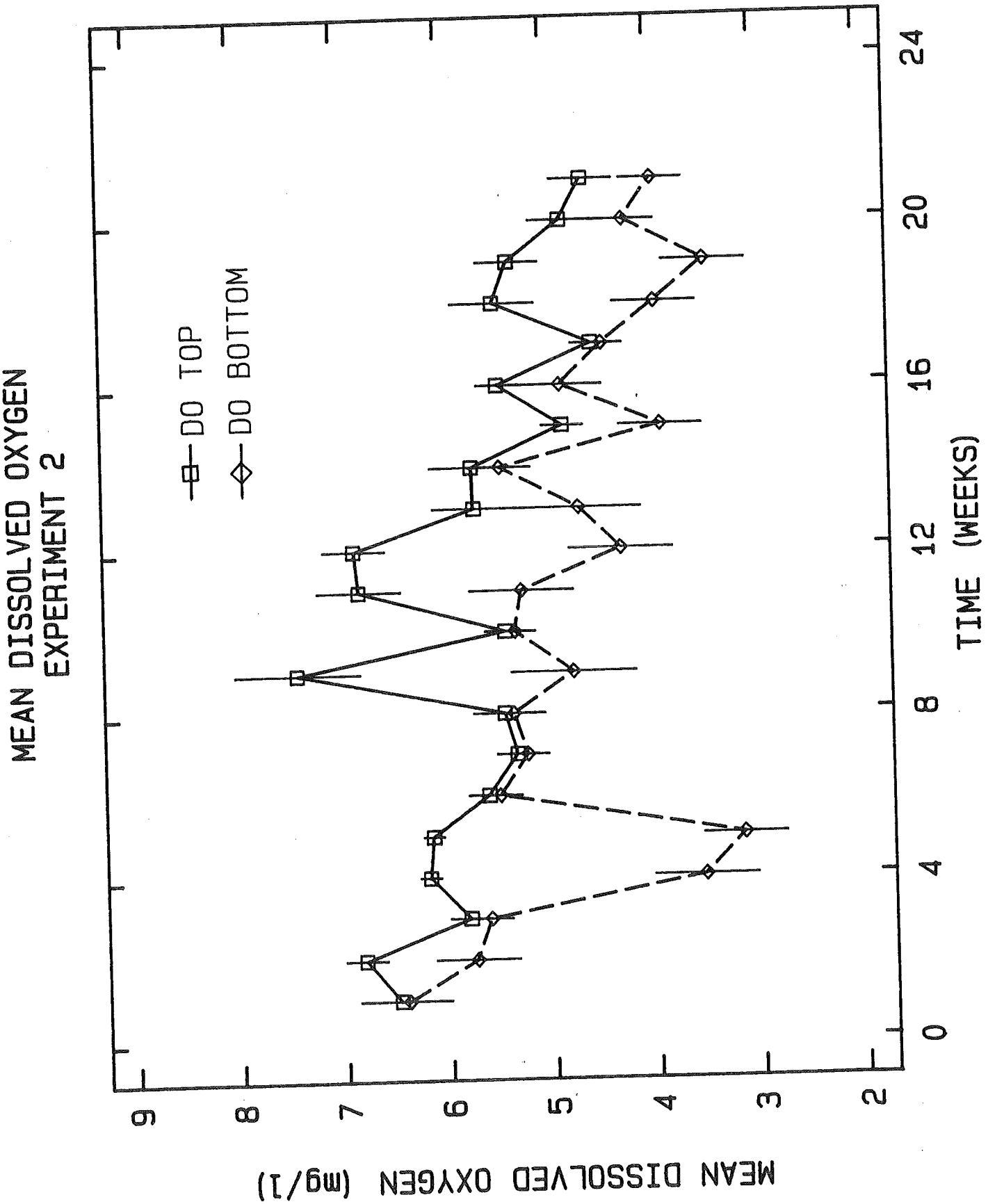

Figure 8. Monthly mean fish weight in grams (±SE)

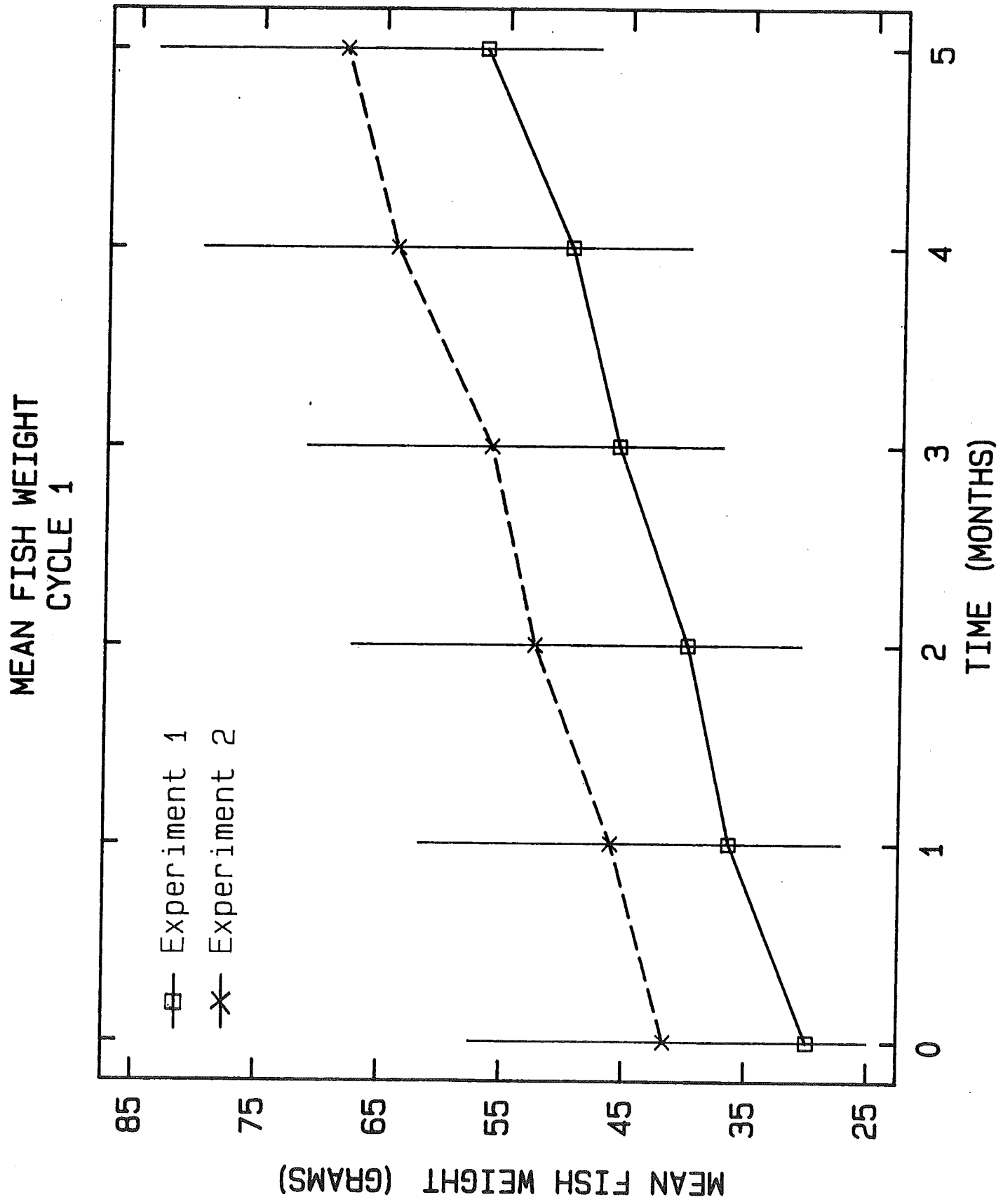

Figure 9. Relationship between fish production rate and chlorophyll a concentration for Experiment 1

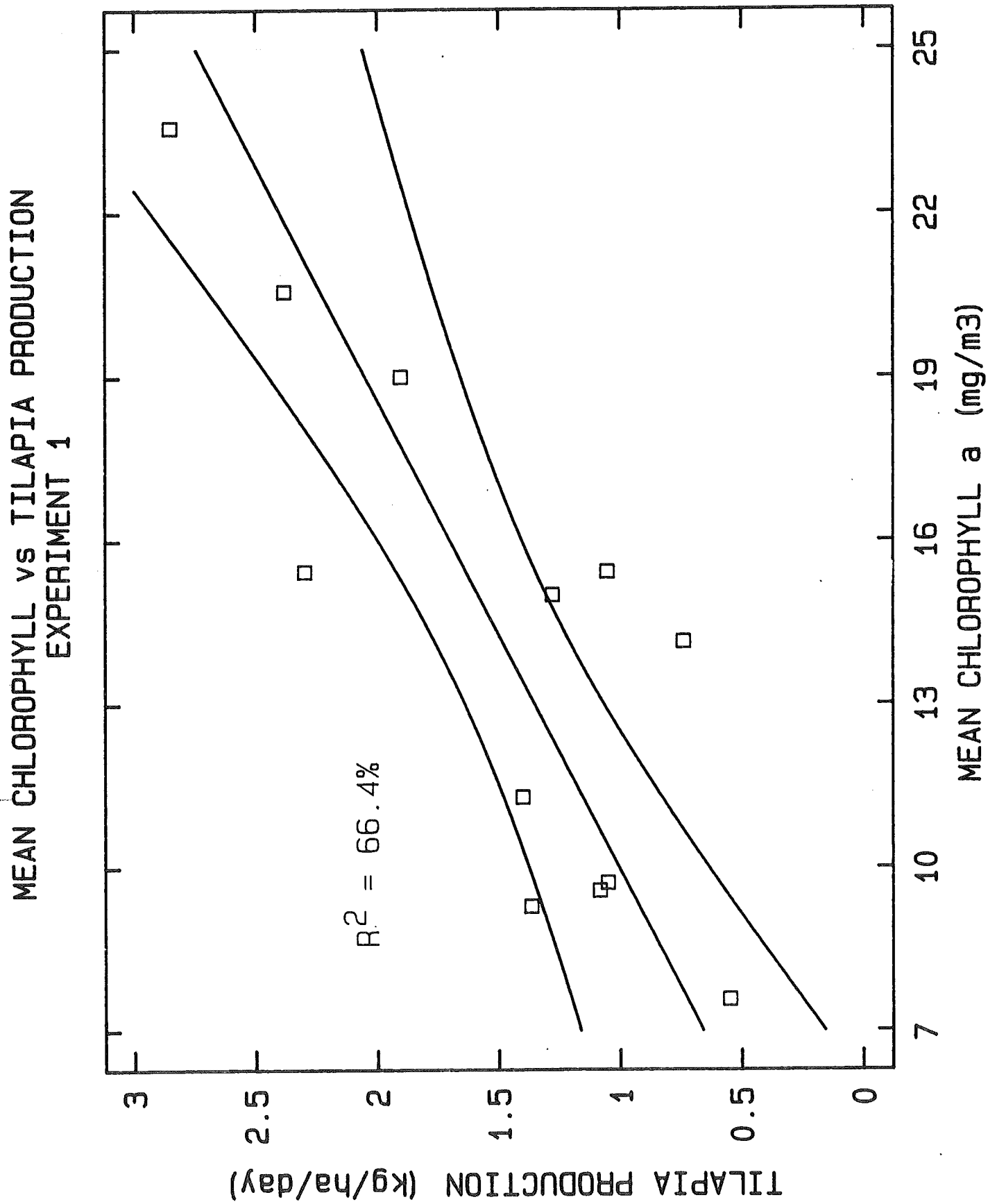

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Table 1. Daily Weather Measurements. Rwanda, Cycle I

DATE			SOLAR RADIATION	RAIN	MEAN WIND	AIR TEMPERATURE MAX	AIR TEMPERATURE MIN	EVAPORATION
DAY	MONTH	YEAR	E/m2/d	cm/d	km/hr	deg C	deg C	mm/d
1	7	1986	17.5	0.	3.	29.3	9.7	4.
2	7	1986	28.96	0.	2.	25.	7.7	4.
3	7	1986	35.44	0.	3.	29.7	7.7	4.
4	7	1986	34.4	0.	3.	30.	8.	4.
5	7	1986	32.89	0.	3.	30.7	7.7	4.
6	7	1986	33.42	0.	3.	31.	8.7	4.
7	7	1986	31.63	0.	3.	28.7	8.	4.
8	7	1986	33.43	0.	3.	28.3	6.3	4.
9	7	1986	31.7	0.	3.	27.7	6.7	4.
10	7	1986	33.05	0.	3.	30.3	7.7	4.
11	7	1986	30.32	0.	3.	31.	8.3	4.
12	7	1986	29.58	0.	3.	27.3	6.7	4.
13	7	1986	25.43	0.	3.	32.	9.7	4.
14	7	1986	28.05	0.	3.	29.7	8.	3.
15	7	1986	29.32	0.	3.	29.7	8.	3.
16	7	1986	29.83	0.	3.	30.	7.	3.
17	7	1986	25.87	0.	3.	30.7	10.	3.
18	7	1986	31.48	0.	3.	28.7	8.	3.
19	7	1986	33.41	0.	3.	29.	5.	3.
20	7	1986	34.55	0.	3.	28.7	3.7	3.
21	7	1986	32.11	0.	4.	26.7	4.7	3.
22	7	1986	30.55	0.	4.	26.7	5.7	3.
23	7	1986	30.46	0.	3.	28.7	6.7	3.
24	7	1986	27.67	0.	3.	29.7	8.	3.
25	7	1986	26.13	0.	3.	28.7	7.7	3.
26	7	1986	20.29	0.	3.	28.7	8.3	3.
27	7	1986	17.68	0.	2.	29.7	8.7	3.
28	7	1986	18.68	0.	2.	26.7	10.	3.
29	7	1986	25.64	0.	2.	27.7	9.	3.
30	7	1986	24.92	0.	3.	29.7	7.7	3.
31	7	1986	25.51	0.	4.	28.3	8.	3.
1	8	1986	25.04	0.	3.	29.	7.7	3.
2	8	1986	22.28	0.	3.	30.3	17.7	3.
3	8	1986	14.27	0.	2.	30.3	12.	3.
4	8	1986	31.	0.	3.	29.	9.7	3.
5	8	1986	31.89	0.	3.	30.7	9.3	3.
6	8	1986	29.1	0.	3.	31.	8.7	3.
7	8	1986	28.56	0.	3.	31.7	8.7	3.
8	8	1986	28.16	0.	3.	31.	9.7	3.
9	8	1986	29.02	0.	3.	32.	7.7	3.
10	8	1986	25.19	0.	3.	28.7	10.	3.
11	8	1986	28.5	0.	4.	32.	8.	3.
12	8	1986	29.34	0.	3.	28.7	10.3	3.
13	8	1986	30.47	0.	4.	28.7	9.	3.
14	8	1986	30.77	0.	3.	30.	5.7	3.
15	8	1986	29.15	0.	4.	29.7	6.	3.
16	8	1986	29.	0.	4.	30.7	6.7	3.
17	8	1986	26.33	0.	3.	31.3	8.	3.
18	8	1986	28.46	0.	3.	31.3	9.7	3.
19	8	1986	29.68	0.	3.	31.7	8.7	5.
20	8	1986	27.69	0.	3.	32.3	7.7	5.
21	8	1986	31.4	0.	3.	32.	7.7	5.
22	8	1986	31.86	0.	3.	32.	11.7	5.
23	8	1986	32.39	0.	3.	32.	7.7	5.
24	8	1986	32.39	0.	3.	31.7	8.3	5.

Table 1. Daily Weather Measurements. Rwanda, Cycle I

DATE			SOLAR RADIATION	RAIN	MEAN WIND	AIR TEMPERATURE MAX	AIR TEMPERATURE MIN	EVAPOR-ATION
DAY	MONTH	YEAR	E/m2/d	cm/d	km/hr	deg C	deg C	mm/d
25	8	1986	34.51	0.	4.	31.3	9.7	5.
26	8	1986	33.23	0.	3.	32.	8.7	5.
27	8	1986	26.43	0.	4.	32.	6.3	5.
28	8	1986	29.45	0.	3.	32.	11.7	5.
29	8	1986	30.91	0.	4.	32.	9.7	5.
30	8	1986	26.1	0.	4.	33.7	10.7	5.
31	8	1986	27.2	0.	3.	31.3	11.3	5.
1	9	1986	25.58	0.	3.	32.3	10.3	5.
2	9	1986	17.5	0.	4.	32.	11.	5.
3	9	1986	14.94	0.	3.	29.3	13.3	5.
4	9	1986	20.57	0.	3.	27.	14.	5.
5	9	1986	30.28	0.	2.	25.3	11.	4.
6	9	1986	34.77	0.	3.	30.	14.7	4.
7	9	1986	26.7	0.	3.	31.3	11.7	4.
8	9	1986	28.12	0.	3.	31.3	11.3	4.
9	9	1986	26.72	0.	4.	32.	11.	4.
10	9	1986	32.11	1.	3.	31.7	9.7	4.
11	9	1986	28.71	0.	3.	30.7	11.	4.
12	9	1986	32.36	0.	2.	31.	9.7	4.
13	9	1986	40.03	0.	3.	29.7	9.7	4.
14	9	1986	39.9	0.	3.	31.	9.	4.
15	9	1986	35.52	0.	3.	31.	9.	4.
16	9	1986	31.6	0.	3.	31.	12.	4.
17	9	1986	34.43	0.	3.	32.7	12.	4.
18	9	1986	18.64	0.	4.	32.7	15.7	4.
19	9	1986	34.45	0.	3.	29.	10.	4.
20	9	1986	27.03	0.	3.	30.7	9.	4.
21	9	1986	34.59	0.	3.	30.	9.7	4.
22	9	1986	37.93	0.	3.	31.3	8.7	3.
23	9	1986	29.48	0.	4.	33.3	14.7	3.
24	9	1986	40.79	0.	4.	32.	10.7	3.
25	9	1986	32.22	0.	3.	33.3	12.3	3.
26	9	1986	33.83	0.	4.	33.3	11.7	3.
27	9	1986	26.37	1.	4.	33.7	13.	3.
28	9	1986	20.75	0.	4.	29.7	12.7	3.
29	9	1986	39.65	0.	2.	28.	9.7	3.
30	9	1986	31.89	0.	3.	31.3	11.7	3.
1	10	1986	99.99	0.	3.	32.	10.	3.
2	10	1986	99.99	0.	3.	33.7	10.	3.
3	10	1986	99.99	0.	3.	33.7	13.7	3.
4	10	1986	99.99	0.	3.	33.	11.	3.
5	10	1986	99.99	0.	4.	33.3	10.7	3.
6	10	1986	99.99	0.	4.	33.	11.7	3.
7	10	1986	36.8	1.	4.	33.7	14.7	3.
8	10	1986	24.31	1.	4.	31.7	12.	3.
9	10	1986	39.44	0.	3.	30.	11.7	3.
10	10	1986	37.9	0.	3.	32.	12.	3.
11	10	1986	34.58	0.	3.	32.3	11.	3.
12	10	1986	27.31	2.	4.	32.	14.	3.
13	10	1986	22.25	0.	3.	32.	13.	3.
14	10	1986	22.2	1.	2.	31.3	14.7	3.
15	10	1986	45.52	1.	3.	29.3	11.	3.
16	10	1986	39.79	0.	3.	32.	10.7	3.
17	10	1986	33.08	0.	3.	32.	11.7	3.
18	10	1986	33.83	1.	3.	32.	12.	3.

Table 1. Daily Weather Measurements. Rwanda, Cycle I

DATE			SOLAR RADIATION	RAIN	MEAN WIND	AIR TEMPERATURE MAX	AIR TEMPERATURE MIN	EVAPOR-ATION
DAY	MONTH	YEAR	E/m2/d	cm/d	km/hr	deg C	deg C	mm/d
19	10	1986	38.32	0.	3.	29.7	13.	3.
20	10	1986	33.66	1.	3.	32.7	12.	3.
21	10	1986	46.05	0.	4.	29.7	11.	3.
22	10	1986	43.77	0.	4.	33.	10.7	3.
23	10	1986	37.01	0.	3.	32.7	11.	3.
24	10	1986	35.39	0.	4.	32.7	11.3	3.
25	10	1986	17.11	2.	3.	31.7	14.	3.
26	10	1986	30.54	0.	3.	24.	12.	3.
27	10	1986	39.46	2.	2.	29.7	11.	3.
28	10	1986	15.47	1.	3.	32.	12.7	3.
29	10	1986	39.52	1.	3.	32.	13.	3.
30	10	1986	16.9	0.	4.	31.7	15.	3.
31	10	1986	33.3	0.	2.	31.3	14.3	3.
1	11	1986	26.51	1.	2.	31.	14.	3.
2	11	1986	39.79	0.	3.	29.3	14.7	3.
3	11	1986	43.41	1.	3.	31.3	14.	3.
4	11	1986	38.66	1.	2.	29.	12.	3.
5	11	1986	39.98	0.	3.	31.7	13.	3.
6	11	1986	40.17	0.	3.	31.7	14.	3.
7	11	1986	38.9	0.	3.	31.7	12.	3.
8	11	1986	43.2	0.	3.	31.3	12.	3.
9	11	1986	29.1	0.	3.	31.7	12.	3.
10	11	1986	29.69	0.	3.	30.	11.	3.
11	11	1986	13.88	0.	3.	32.3	12.	3.
12	11	1986	24.65	2.	3.	29.3	12.	3.
13	11	1986	38.77	0.	3.	30.3	11.7	3.
14	11	1986	50.76	2.	2.	28.7	13.	3.
15	11	1986	28.34	1.	2.	27.3	12.	3.
16	11	1986	41.83	0.	3.	27.	12.7	3.
17	11	1986	39.71	0.	3.	30.7	11.	3.
18	11	1986	33.18	1.	3.	31.	12.	3.
19	11	1986	32.98	0.	3.	30.3	11.7	3.
20	11	1986	28.23	0.	3.	29.	11.7	3.
21	11	1986	31.08	0.	3.	31.7	12.	3.
22	11	1986	32.28	0.	3.	29.7	13.	3.
23	11	1986	38.66	0.	3.	29.	13.	3.
24	11	1986	27.52	0.	3.	29.7	14.	3.
25	11	1986	35.41	0.	3.	32.7	13.	3.
26	11	1986		0.	2.	31.3	14.7	3.
27	11	1986		0.	2.	30.7	11.3	3.
28	11	1986		0.	2.	30.3	12.7	3.
29	11	1986		0.	3.	30.7	12.	3.
30	11	1986		0.	3.	26.3	12.7	3.
1	12	1986		1.	2.	29.3	11.	3.
2	12	1986		0.	2.	30.	13.	3.
3	12	1986		0.	2.	28.3	10.7	3.
4	12	1986		0.	3.	29.	12.7	3.
5	12	1986		1.	2.	30.	13.	3.
6	12	1986		0.	2.	32.	14.	3.
7	12	1986		1.	1.	31.3	13.	3.
8	12	1986		3.	2.	33.7	13.3	3.
9	12	1986		0.	2.	29.7	13.3	3.
10	12	1986		0.	2.	25.3	12.3	3.
11	12	1986		0.	2.	28.7	11.3	3.
12	12	1986		0.	3.	31.	13.3	3.

Table 1. Daily Weather Measurements. Rwanda, Cycle I

DATE			SOLAR RADIATION	RAIN	MEAN WIND	AIR TEMPERATURE MAX	AIR TEMPERATURE MIN	EVAPOR-ATION
DAY	MONTH	YEAR	E/m2/d	cm/d	km/hr	deg C	deg C	mm/d
13	12	1986		0.	2.	32.	12.7	3.
14	12	1986		0.	3.	32.3	10.3	3.
15	12	1986		0.	3.	22.	10.3	3.
16	12	1986		0.	3.	30.7	10.	3.
17	12	1986		0.	3.	29.	11.	3.
18	12	1986		0.	4.	30.7	11.	3.
19	12	1986		0.	2.	29.	10.	3.
20	12	1986		0.	3.	30.3	11.7	3.
21	12	1986		1.	3.	29.3	10.	3.
22	12	1986		0.	3.	30.	11.	3.
23	12	1986		0.	3.	28.3	12.	3.
24	12	1986	28.22	0.	4.	29.3	11.7	3.
25	12	1986	26.29	0.	3.	30.	11.	3.
26	12	1986	37.92	0.	3.	26.7	14.	3.
27	12	1986	46.48	0.	3.	33.7	10.	3.
28	12	1986	34.68	0.	3.	33.7	14.	3.
29	12	1986	38.77	1.	3.	34.3	12.7	3.
30	12	1986	24.91	0.	3.	32.	14.7	3.
31	12	1986	25.59	0.	3.	30.	14.3	3.
1	1	1987	17.	0.	2.	32.3	16.	3.
2	1	1987	35.3	2.5	3.	30.	13.	3.
3	1	1987	26.17	0.	2.	28.7	12.	3.
4	1	1987	26.41	0.	2.	33.3	13.	3.
5	1	1987	37.4	0.	3.	25.7	12.	3.
6	1	1987	21.21	0.	2.	33.7	13.	2.
7	1	1987	32.8	0.	3.	32.3	10.	2.
8	1	1987	13.26	0.	3.	31.	10.3	2.
9	1	1987	19.38	0.	2.	30.	12.	2.
10	1	1987	22.23	0.	2.	29.3	11.	2.
11	1	1987	22.87	0.	3.	31.3	12.3	2.
12	1	1987	40.98	0.	3.	28.3	12.	2.
13	1	1987	38.13	0.	3.	34.	11.3	2.
14	1	1987	21.44	0.	2.	28.7	13.3	2.
15	1	1987	16.28	0.	1.	31.3	15.	2.
16	1	1987	29.88	0.	2.	31.	14.	2.
17	1	1987	19.36	0.	2.	32.7	15.	2.
18	1	1987	29.76	0.	2.	29.3	11.	2.
19	1	1987	15.09	0.	2.	33.	14.	2.
20	1	1987	33.49	1.	3.	30.3	12.	3.
21	1	1987	20.8	0.	2.	32.	15.7	3.
22	1	1987	15.36	0.	2.	30.3	13.	3.
23	1	1987	9.09	2.9	1.	33.	15.7	3.
24	1	1987	22.64	0.	1.	27.7	14.	3.
25	1	1987	27.76	0.	2.	29.	14.	3.
26	1	1987	39.26	0.	3.	34.	12.	3.
27	1	1987	31.7	0.	3.	33.3	12.	3.
28	1	1987	27.01	0.	3.	33.	10.	3.
29	1	1987	33.49	0.	4.	30.3	12.	3.
30	1	1987	24.7	0.	3.	32.	15.	3.
31	1	1987	19.75	4.6	3.	33.7	13.7	3.
1	2	1987	32.64	0.	2.	24.	13.	3.
2	2	1987	34.25	0.	3.	31.	14.	3.
3	2	1987	41.45	0.	3.	33.7	10.3	3.
4	2	1987	41.69	0.	3.	33.7	10.3	3.
5	2	1987	38.23	0.	3.	35.7	11.	2.

Table 1. Daily Weather Measurements. Rwanda, Cycle I

DATE			SOLAR RADIATION	RAIN	MEAN WIND	AIR TEMPERATURE MAX	AIR TEMPERATURE MIN	EVAPORATION
DAY	MONTH	YEAR	E/m2/d	cm/d	km/hr	deg C	deg C	mm/d
6	2	1987	29.78	0.	3.	36.3	14.	2.
7	2	1987	31.14	1.6	3.	36.3	15.	2.
8	2	1987	31.05	0.	3.	33.3	15.	2.
9	2	1987	35.12	1.3	3.	32.3	14.3	2.
10	2	1987	16.62	1.5	1.	33.3	15.	2.
11	2	1987	42.55	0.	3.	25.7	12.7	2.
12	2	1987	15.44	0.	2.	32.3	15.	2.
13	2	1987	38.02	0.	2.	30.3	12.	2.
14	2	1987	17.11	0.	2.	32.	14.	2.
15	2	1987	32.07	0.	2.	31.3	14.	2.
16	2	1987	31.04	0.	2.	30.	13.3	2.
17	2	1987	32.54	0.6	2.	31.	12.3	2.
18	2	1987	29.21	0.	2.	31.7	12.7	2.
19	2	1987	36.6	0.	3.	31.3	13.3	2.
20	2	1987	34.9	0.	3.	31.7	13.	2.
21	2	1987	20.86	0.7	2.	31.3	12.7	2.
22	2	1987	34.8	0.6	3.	29.3	12.	2.
23	2	1987	39.93	0.	2.	30.	13.	2.
24	2	1987	35.34	0.	3.	34.	12.	2.
25	2	1987	37.93	1.6	3.	32.7	12.	2.
26	2	1987	36.6	0.	2.	30.7	11.	2.

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Dry Season

DATE				POND DEPTH	WATER
DAY	MONTH	YEAR	POND#	m	INFLOW
12	3	1986	C8	1.17	N
12	3	1986	D1	1.21	N
12	3	1986	D3	1.34	N
12	3	1986	D5	1.37	N
12	3	1986	D6	1.3	N
12	3	1986	D9	1.15	N
12	3	1986	D10	1.19	N
16	3	1986	B1	1.	N
16	3	1986	C2	1.15	N
16	3	1986	C3	1.28	Y
16	3	1986	C5	1.22	N
16	3	1986	C7	1.32	N
16	3	1986	C8	1.14	N
16	3	1986	D1	1.26	N
16	3	1986	D3	1.35	N
16	3	1986	D5	1.36	N
16	3	1986	D6	1.28	N
16	3	1986	D9	1.15	N
16	3	1986	D10	1.24	N
19	3	1986	B1	1.22	Y
19	3	1986	C2	1.21	N
19	3	1986	C3	1.24	N
19	3	1986	C5	1.22	N
19	3	1986	C7	1.32	N
19	3	1986	C8	1.11	N
19	3	1986	D1	1.22	N
19	3	1986	D3	1.35	N
19	3	1986	D5	1.35	N
19	3	1986	D6	1.27	N
19	3	1986	D9	1.14	N
19	3	1986	D10	1.2	N
23	3	1986	B1	1.12	N
23	3	1986	C2	1.2	N
23	3	1986	C3	1.21	N
23	3	1986	C5	1.23	N
23	3	1986	C7	1.34	N
23	3	1986	C8	1.23	N
23	3	1986	D1	1.3	N
23	3	1986	D3	1.36	N
23	3	1986	D5	1.35	N
23	3	1986	D6	1.29	N
23	3	1986	D9	1.24	Y
23	3	1986	D10	1.23	N
26	3	1986	B1	1.12	N
26	3	1986	C2	1.2	N
26	3	1986	C3	1.21	N
26	3	1986	C5	1.23	N
26	3	1986	C7	1.34	N
26	3	1986	C8	1.23	N
26	3	1986	D1	1.3	N
26	3	1986	D3	1.36	N
26	3	1986	D5	1.35	N
26	3	1986	D6	1.29	N

DATE				POND DEPTH	WATER
DAY	MONTH	YEAR	POND#	m	INFLOW
23	2	1986	B1	1.09	N
23	2	1986	C2	1.2	N
23	2	1986	C3	1.14	N
23	2	1986	C5	1.18	N
23	2	1986	C7	1.29	N
23	2	1986	C8	1.05	N
23	2	1986	D1	1.16	N
23	2	1986	D3	1.3	N
23	2	1986	D5	1.33	N
23	2	1986	D6	1.27	N
23	2	1986	D9	1.14	N
23	2	1986	D10	1.22	N
2	3	1986	B1	1.17	N
2	3	1986	C2	1.23	N
2	3	1986	C3	1.1	N
2	3	1986	C5	1.15	N
2	3	1986	C7	1.26	N
2	3	1986	C8	1.01	N
2	3	1986	D1	1.3	N
2	3	1986	D3	1.3	N
2	3	1986	D5	1.33	N
2	3	1986	D6	1.3	N
2	3	1986	D9	1.15	N
2	3	1986	D10	1.21	N
5	3	1986	B1	1.25	Y
5	3	1986	C2	1.22	N
5	3	1986	C3	1.1	N
5	3	1986	C5	1.3	N
5	3	1986	C7	1.29	N
5	3	1986	C8	1.25	Y
5	3	1986	D1	1.28	N
5	3	1986	D3	1.33	N
5	3	1986	D5	1.38	N
5	3	1986	D6	1.32	N
5	3	1986	D9	1.16	N
5	3	1986	D10	1.23	N
9	3	1986	B1	1.14	N
9	3	1986	C2	1.2	N
9	3	1986	C3	1.2	Y
9	3	1986	C5	1.26	N
9	3	1986	C7	1.3	N
9	3	1986	C8	1.2	N
9	3	1986	D1	1.24	N
9	3	1986	D3	1.34	N
9	3	1986	D5	1.38	N
9	3	1986	D6	1.31	N
9	3	1986	D9	1.16	N
9	3	1986	D10	1.22	N
12	3	1986	B1	1.08	N
12	3	1986	C2	1.18	N
12	3	1986	C3	1.09	N
12	3	1986	C5	1.24	N
12	3	1986	C7	1.32	N

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Dry Season

DATE				POND DEPTH	WATER
DAY	MONTH	YEAR	POND#	m	INFLOW
26	3	1986	D9	1.24	N
26	3	1986	D10	1.23	N
30	3	1986	B1	1.12	N
30	3	1986	C2	1.18	N
30	3	1986	C3	1.19	N
30	3	1986	C5	1.25	N
30	3	1986	C7	1.34	N
30	3	1986	C8	1.17	N
30	3	1986	D1	1.23	N
30	3	1986	D3	1.37	N
30	3	1986	D5	1.36	N
30	3	1986	D6	1.29	N
30	3	1986	D9	1.27	N
30	3	1986	D10	1.23	N
2	4	1986	B1	1.27	Y
2	4	1986	C2	1.28	Y
2	4	1986	C3	1.19	N
2	4	1986	C5	1.27	N
2	4	1986	C7	1.35	N
2	4	1986	C8	1.26	Y
2	4	1986	D1	1.21	N
2	4	1986	D3	1.38	N
2	4	1986	D5	1.36	N
2	4	1986	D6	1.3	N
2	4	1986	D9	1.23	N
2	4	1986	D10	1.23	N
6	4	1986	B1	1.28	N
6	4	1986	C2	1.26	N
6	4	1986	C3	1.3	Y
6	4	1986	C5	1.3	N
6	4	1986	C7	1.34	N
6	4	1986	C8	1.23	N
6	4	1986	D1	1.22	N
6	4	1986	D3	1.38	N
6	4	1986	D5	1.4	N
6	4	1986	D6	1.33	N
6	4	1986	D9	1.22	N
6	4	1986	D10	1.26	N
9	4	1986	B1	1.28	N
9	4	1986	C2	1.32	Y
9	4	1986	C3	1.37	Y
9	4	1986	C5	1.4	Y
9	4	1986	C7	1.36	N
9	4	1986	C8	1.3	Y
9	4	1986	D1	1.31	Y
9	4	1986	D3	1.38	N
9	4	1986	D5	1.45	N
9	4	1986	D6	1.41	Y
9	4	1986	D9	1.3	Y
9	4	1986	D10	1.32	Y
13	4	1986	B1	1.2	N
13	4	1986	C2	1.31	N
13	4	1986	C3	1.38	N
13	4	1986	C5	1.4	N
13	4	1986	C7	1.34	N
13	4	1986	C8	1.29	N
13	4	1986	D1	1.34	N
13	4	1986	D3	1.38	N
13	4	1986	D5	1.45	N
13	4	1986	D6	1.42	N
13	4	1986	D9	1.31	N
13	4	1986	D10	1.32	N
16	4	1986	B1	1.18	N
16	4	1986	C2	1.31	N
16	4	1986	C3	1.38	N
16	4	1986	C5	1.41	N
16	4	1986	C7	1.35	N
16	4	1986	C8	1.28	N
16	4	1986	D1	1.33	N
16	4	1986	D3	1.38	N
16	4	1986	D5	1.45	N
16	4	1986	D6	1.42	N
16	4	1986	D9	1.3	N
16	4	1986	D10	1.32	N
20	4	1986	B1	1.2	N
20	4	1986	C2	1.24	N
20	4	1986	C3	1.32	N
20	4	1986	C5	1.28	N
20	4	1986	C7	1.32	N
20	4	1986	C8	1.21	N
20	4	1986	D1	1.28	N
20	4	1986	D3	1.37	N
20	4	1986	D5	1.45	N
20	4	1986	D6	1.4	N
20	4	1986	D9	1.24	N
20	4	1986	D10	1.23	N
23	4	1986	B1	1.23	N
23	4	1986	C2	1.32	Y
23	4	1986	C3	1.4	Y
23	4	1986	C5	1.41	Y
23	4	1986	C7	1.34	N
23	4	1986	C8	1.28	Y
23	4	1986	D1	1.36	Y
23	4	1986	D3	1.37	N
23	4	1986	D5	1.45	N
23	4	1986	D6	1.44	N
23	4	1986	D9	1.3	Y
23	4	1986	D10	1.34	Y
27	4	1986	B1	1.2	N
27	4	1986	C2	1.32	N
27	4	1986	C3	1.42	N
27	4	1986	C5	1.42	N
27	4	1986	C7	1.34	N
27	4	1986	C8	1.3	N
27	4	1986	D1	1.38	N
27	4	1986	D3	1.37	N

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Dry Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
9	5	1986	C2	1.23	N		nil
9	5	1986	C3	1.32	N		nil
9	5	1986	C5	1.38	N		nil
9	5	1986	C7	1.32	N		nil
9	5	1986	C8	1.18	N		nil
9	5	1986	D1	1.26	N		nil
9	5	1986	D3	1.36	N		nil
9	5	1986	D5	1.45	N		nil
9	5	1986	D6	1.36	N		nil
9	5	1986	D9	1.21	N		nil
9	5	1986	D10	1.23	N		nil
10	5	1986	B1	1.1	N		nil
10	5	1986	C2	1.22	N		nil
10	5	1986	C3	1.3	N		nil
10	5	1986	C5	1.38	N		nil
10	5	1986	C7	1.32	N		nil
10	5	1986	C8	1.17	N		nil
10	5	1986	D1	1.25	N		nil
10	5	1986	D3	1.37	N		nil
10	5	1986	D5	1.4	N		nil
10	5	1986	D6	1.37	N		nil
10	5	1986	D9	1.22	N		nil
10	5	1986	D10	1.22	N		nil
11	5	1986	B1	1.14	N		nil
11	5	1986	C2	1.22	N		nil
11	5	1986	C3	1.3	N		nil
11	5	1986	C5	1.38	N		nil
11	5	1986	C7	1.3	N		nil
11	5	1986	C8	1.26	Y		nil
11	5	1986	D1	1.25	N		nil
11	5	1986	D3	1.38	N		nil
11	5	1986	D5	1.43	N		nil
11	5	1986	D6	1.38	N		nil
11	5	1986	D9	1.24	N		nil
11	5	1986	D10	1.22	N		nil
14	5	1986	B1	1.15	N		nil
14	5	1986	C2	1.2	N		nil
14	5	1986	C3	1.26	N		nil
14	5	1986	C5	1.36	N		nil
14	5	1986	C7	1.32	N		nil
14	5	1986	C8	1.26	N		nil
14	5	1986	D1	1.22	N		nil
14	5	1986	D3	1.36	N		nil
14	5	1986	D5	1.43	N		nil
14	5	1986	D6	1.37	N		nil
14	5	1986	D9	1.2	N		nil
14	5	1986	D10	1.21	N		nil
18	5	1986	B1	1.26	Y		nil
18	5	1986	C2	1.28	Y		nil
18	5	1986	C3	1.14	N		nil
18	5	1986	C5	1.21	N		nil
18	5	1986	C7	1.3	N		nil
18	5	1986	C8	1.16	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Dry Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
27	4	1986	D5	1.42	N		
27	4	1986	D6	1.45	N		
27	4	1986	D9	1.31	N		
27	4	1986	D10	1.34	N		
30	4	1986	B1	1.18	N		
30	4	1986	C2	1.32	N		
30	4	1986	C3	1.42	N		
30	4	1986	C5	1.42	N		
30	4	1986	C7	1.34	N		
30	4	1986	C8	1.3	N		
30	4	1986	D1	1.38	N		
30	4	1986	D3	1.37	N		
30	4	1986	D5	1.42	N		
30	4	1986	D6	1.45	N		
30	4	1986	D9	1.31	N		
30	4	1986	D10	1.34	N		
4	5	1986	B1	1.27	Y		nil
4	5	1986	C2	1.27	N		nil
4	5	1986	C3	1.33	N		nil
4	5	1986	C5	1.4	N		nil
4	5	1986	C7	1.32	N		nil
4	5	1986	C8	1.23	N		nil
4	5	1986	D1	1.32	N		nil
4	5	1986	D3	1.36	N		nil
4	5	1986	D5	1.45	N		nil
4	5	1986	D6	1.4	N		nil
4	5	1986	D9	1.26	N		nil
4	5	1986	D10	1.29	N		nil
7	5	1986	B1	1.17	N		nil
7	5	1986	C2	1.23	N		nil
7	5	1986	C3	1.33	N		nil
7	5	1986	C5	1.38	N		nil
7	5	1986	C7	1.32	N		nil
7	5	1986	C8	1.19	N		nil
7	5	1986	D1	1.29	N		nil
7	5	1986	D3	1.36	N		nil
7	5	1986	D5	1.43	N		nil
7	5	1986	D6	1.39	N		nil
7	5	1986	D9	1.24	N		nil
7	5	1986	D10	1.25	N		nil
8	5	1986	B1	1.14	N		nil
8	5	1986	C2	1.23	N		nil
8	5	1986	C3	1.32	N		nil
8	5	1986	C5	1.38	N		nil
8	5	1986	C7	1.32	N		nil
8	5	1986	C8	1.18	N		nil
8	5	1986	D1	1.26	N		nil
8	5	1986	D3	1.36	N		nil
8	5	1986	D5	1.45	N		nil
8	5	1986	D6	1.39	N		nil
8	5	1986	D9	1.22	N		nil
8	5	1986	D10	1.24	N		nil
9	5	1986	B1	1.13	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Dry Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
18	5	1986	D1	1.18	N		nil
18	5	1986	D3	1.31	N		nil
18	5	1986	D5	1.4	N		nil
18	5	1986	D6	1.34	N		nil
18	5	1986	D9	1.16	N		nil
18	5	1986	D10	1.17	N		nil
21	5	1986	B1	1.11	N		nil
21	5	1986	C2	1.16	N		nil
21	5	1986	C3	1.18	N		nil
21	5	1986	C5	1.2	N		nil
21	5	1986	C7	1.28	N		nil
21	5	1986	C8	1.19	N		nil
21	5	1986	D1	1.26	Y		nil
21	5	1986	D3	1.26	N		nil
21	5	1986	D5	1.32	N		nil
21	5	1986	D6	1.28	N		nil
21	5	1986	D9	1.12	N		nil
21	5	1986	D10	1.13	N		nil
25	5	1986	B1	1.13	N		nil
25	5	1986	C2	1.16	N		nil
25	5	1986	C3	1.12	N		nil
25	5	1986	C5	1.27	Y		nil
25	5	1986	C7	1.26	N		nil
25	5	1986	C8	1.3	Y		nil
25	5	1986	D1	1.19	N		nil
25	5	1986	D3	1.15	N		nil
25	5	1986	D5	1.28	N		nil
25	5	1986	D6	1.22	N		nil
25	5	1986	D9	1.19	Y		nil
25	5	1986	D10	1.2	Y		nil
28	5	1986	B1	1.15	Y		nil
28	5	1986	C2	1.22	Y		nil
28	5	1986	C3	1.14	N		nil
28	5	1986	C5	1.12	N		nil
28	5	1986	C7	1.24	N		nil
28	5	1986	C8	1.19	N		nil
28	5	1986	D1	1.26	Y		nil
28	5	1986	D3	1.24	Y		nil
28	5	1986	D5	1.23	N		nil
28	5	1986	D6	1.18	N		nil
28	5	1986	D9	1.11	N		nil
28	5	1986	D10	1.11	N		nil
1	6	1986	B1	1.2	Y		nil
1	6	1986	C2	1.22	N		nil
1	6	1986	C3	1.18	Y		nil
1	6	1986	C5	1.2	Y		nil
1	6	1986	C7	1.2	N		nil
1	6	1986	C8	1.28	Y		nil
1	6	1986	D1	1.28	N		nil
1	6	1986	D3	1.28	Y		nil
1	6	1986	D5	1.2	N		nil
1	6	1986	D6	1.24	Y		nil
1	6	1986	D9	1.21	Y		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Dry Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
1	6	1986	D10	1.2	Y		nil
4	6	1986	B1	1.2	N		nil
4	6	1986	C2	1.29	Y		nil
4	6	1986	C3	1.13	N		nil
4	6	1986	C5	1.2	N		nil
4	6	1986	C7	1.28	N		nil
4	6	1986	C8	1.27	N		nil
4	6	1986	D1	1.2	N		nil
4	6	1986	D3	1.19	N		nil
4	6	1986	D5	1.27	Y		nil
4	6	1986	D6	1.21	N		nil
4	6	1986	D9	1.28	Y		nil
4	6	1986	D10	1.2	N		nil
8	6	1986	B1	1.14	N		nil
8	6	1986	C2	1.15	N		nil
8	6	1986	C3	1.09	N		nil
8	6	1986	C5	1.16	N		nil
8	6	1986	C7	1.24	N		nil
8	6	1986	C8	1.28	N		nil
8	6	1986	D1	1.22	N		nil
8	6	1986	D3	1.19	N		nil
8	6	1986	D5	1.22	N		nil
8	6	1986	D6	1.3	Y		nil
8	6	1986	D9	1.18	N		nil
8	6	1986	D10	1.17	N		nil
11	6	1986	B1	1.14	N		nil
11	6	1986	C2	1.17	N		nil
11	6	1986	C3	1.19	Y		nil
11	6	1986	C5	1.16	N		nil
11	6	1986	C7	1.2	N		nil
11	6	1986	C8	1.17	N		nil
11	6	1986	D1	1.15	N		nil
11	6	1986	D3	1.28	Y		nil
11	6	1986	D5	1.2	N		nil
11	6	1986	D6	1.26	N		nil
11	6	1986	D9	1.13	N		nil
11	6	1986	D10	1.21	N		nil
15	6	1986	B1	1.2	Y		nil
15	6	1986	C2	1.29	Y		nil
15	6	1986	C3	1.28	Y		nil
15	6	1986	C5	1.29	Y		nil
15	6	1986	C7	1.22	Y		nil
15	6	1986	C8	1.29	Y		nil
15	6	1986	D1	1.29	Y		nil
15	6	1986	D3	1.28	N		nil
15	6	1986	D5	1.22	N		nil
15	6	1986	D6	1.25	N		nil
15	6	1986	D9	1.25	Y		nil
15	6	1986	D10	1.2	N		nil
18	6	1986	B1	1.18	N		nil
18	6	1986	C2	1.24	N		nil
18	6	1986	C3	1.22	N		nil
18	6	1986	C5	1.26	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Dry Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
18	6	1986	C7	1.24	N		nil
18	6	1986	C8	1.22	N		nil
18	6	1986	D1	1.23	N		nil
18	6	1986	D3	1.28	N		nil
18	6	1986	D5	1.24	N		nil
18	6	1986	D6	1.24	N		nil
18	6	1986	D9	1.21	N		nil
18	6	1986	D10	1.24	N		nil
22	6	1986	B1	1.28	Y		nil
22	6	1986	C2	1.3	Y		nil
22	6	1986	C3	1.15	N		nil
22	6	1986	C5	1.22	N		nil
22	6	1986	C7	1.26	N		nil
22	6	1986	C8	1.22	N		nil
22	6	1986	D1	1.31	Y		nil
22	6	1986	D3	1.26	N		nil
22	6	1986	D5	1.24	N		nil
22	6	1986	D6	1.22	N		nil
22	6	1986	D9	1.23	Y		nil
22	6	1986	D10	1.2	N		nil
25	6	1986	B1	1.15	N		nil
25	6	1986	C2	1.25	N		nil
25	6	1986	C3	1.23	N		nil
25	6	1986	C5	1.2	N		nil
25	6	1986	C7	1.26	N		nil
25	6	1986	C8	1.28	Y		nil
25	6	1986	D1	1.25	N		nil
25	6	1986	D3	1.25	N		nil
25	6	1986	D5	1.24	N		nil
25	6	1986	D6	1.21	N		nil
25	6	1986	D9	1.26	Y		nil
25	6	1986	D10	1.24	N		nil
29	6	1986	B1	1.14	N		nil
29	6	1986	C2	1.2	N		nil
29	6	1986	C3	1.15	N		nil
29	6	1986	C5	1.3	Y		nil
29	6	1986	C7	1.26	N		nil
29	6	1986	C8	1.19	N		nil
29	6	1986	D1	1.18	N		nil
29	6	1986	D3	1.23	N		nil
29	6	1986	D5	1.24	N		nil
29	6	1986	D6	1.2	N		nil
29	6	1986	D9	1.18	N		nil
29	6	1986	D10	1.18	N		nil
2	7	1986	B1	1.3	Y		nil
2	7	1986	C2	1.26	Y		nil
2	7	1986	C3	1.28	Y		nil
2	7	1986	C5	1.25	N		nil
2	7	1986	C7	1.26	N		nil
2	7	1986	C8	1.24	Y		nil
2	7	1986	D1	1.28	Y		nil
2	7	1986	D3	1.21	N		nil
2	7	1986	D5	1.23	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Dry Season

DATE			POND	POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
2	7	1986	D6	1.18	N		nil
2	7	1986	D9	1.28	Y		nil
2	7	1986	D10	1.3	Y		nil
6	7	1986	B1	1.14	N		nil
6	7	1986	C2	1.2	N		nil
6	7	1986	C3	1.18	N		nil
6	7	1986	C5	1.21	N		nil
6	7	1986	C7	1.26	N		nil
6	7	1986	C8	1.15	N		nil
6	7	1986	D1	1.2	N		nil
6	7	1986	D3	1.2	N		nil
6	7	1986	D5	1.26	Y		nil
6	7	1986	D6	1.3	Y		nil
6	7	1986	D9	1.2	N		nil
6	7	1986	D10	1.24	N		nil
9	7	1986	B1	1.22	Y		nil
9	7	1986	C2	1.22	Y		nil
9	7	1986	C3	1.12	N		nil
9	7	1986	C5	1.18	N		nil
9	7	1986	C7	1.24	N		nil
9	7	1986	C8	1.08	N		nil
9	7	1986	D1	1.16	N		nil
9	7	1986	D3	1.18	N		nil
9	7	1986	D5	1.26	N		nil
9	7	1986	D6	1.28	N		nil
9	7	1986	D9	1.16	N		nil
9	7	1986	D10	1.19	N		nil
13	7	1986	B1	1.24	Y		nil
13	7	1986	C2	1.17	N		nil
13	7	1986	C3	1.28	Y		nil
13	7	1986	C5	1.16	N		nil
13	7	1986	C7	1.25	Y		nil
13	7	1986	C8	1.23	Y		nil
13	7	1986	D1	1.14	N		nil
13	7	1986	D3	1.2	Y		nil
13	7	1986	D5	1.26	N		nil
13	7	1986	D6	1.26	N		nil
13	7	1986	D9	1.14	N		nil
13	7	1986	D10	1.2	N		nil
16	7	1986	B1	1.11	N		nil
16	7	1986	C2	1.14	N		nil
16	7	1986	C3	1.22	N		nil
16	7	1986	C5	1.28	Y		nil
16	7	1986	C7	1.26	Y		nil
16	7	1986	C8	1.16	N		nil
16	7	1986	D1	1.24	N		nil
16	7	1986	D3	1.2	N		nil
16	7	1986	D5	1.25	N		nil
16	7	1986	D6	1.24	N		nil
16	7	1986	D9	1.24	Y		nil
16	7	1986	D10	1.18	N		nil
20	7	1986	B1	1.26	Y		nil
20	7	1986	C2	1.28	Y		nil
20	7	1986	C3	1.15	N		nil
20	7	1986	C5	1.24	N		nil
20	7	1986	C7	1.24	N		nil
20	7	1986	C8	1.08	N		nil
20	7	1986	D1	1.2	N		nil
20	7	1986	D3	1.2	N		nil
20	7	1986	D5	1.25	N		nil
20	7	1986	D6	1.24	N		nil
20	7	1986	D9	1.17	N		nil
20	7	1986	D10	1.3	Y		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Wet Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
7	9	1986	B1	1.23	Y		nil
7	9	1986	C2	1.22	Y		nil
7	9	1986	C3	1.16	Y		nil
7	9	1986	C5	1.2	Y		nil
7	9	1986	C7	1.29	Y		nil
7	9	1986	D1	1.16	Y		nil
7	9	1986	D3	1.26	Y		nil
7	9	1986	D5	1.26	Y		nil
7	9	1986	D6	1.16	Y		nil
7	9	1986	D9	1.1	Y		nil
9	9	1986	B1	1.15	N		nil
9	9	1986	C2	1.18	N		nil
9	9	1986	C3	1.26	Y		nil
9	9	1986	C5	1.21	N		nil
9	9	1986	C7	1.34	Y		nil
9	9	1986	D1	1.24	Y		nil
9	9	1986	D3	1.27	N		nil
9	9	1986	D5	1.3	Y		nil
9	9	1986	D6	1.22	Y		nil
9	9	1986	D9	1.2	Y		nil
14	9	1986	B1	1.23	Y		nil
14	9	1986	C2	1.27	Y		nil
14	9	1986	C3	1.2	N		nil
14	9	1986	C5	1.21	N		nil
14	9	1986	C7	1.3	N		nil
14	9	1986	D1	1.16	N		nil
14	9	1986	D3	1.28	N		nil
14	9	1986	D5	1.3	N		nil
14	9	1986	D6	1.2	N		nil
14	9	1986	D9	1.14	N		nil
17	9	1986	B1	1.14	N		nil
17	9	1986	C2	1.2	N		nil
17	9	1986	C3	1.17	N		nil
17	9	1986	C5	1.2	N		nil
17	9	1986	C7	1.34	Y		nil
17	9	1986	D1	1.23	Y		nil
17	9	1986	D3	1.26	N		nil
17	9	1986	D5	1.3	N		nil
17	9	1986	D6	1.2	N		nil
17	9	1986	D9	1.21	Y		nil
21	9	1986	B1	1.22	Y		nil
21	9	1986	C2	1.29	Y		nil
21	9	1986	C3	1.24	Y		nil
21	9	1986	C5	1.2	N		nil
21	9	1986	C7	1.34	N		nil
21	9	1986	D1	1.29	Y		nil
21	9	1986	D3	1.27	N		nil
21	9	1986	D5	1.28	N		nil
21	9	1986	D6	1.19	N		nil
21	9	1986	D9	1.15	N		nil
24	9	1986	B1	1.13	N		nil
24	9	1986	C2	1.21	N		nil
24	9	1986	C3	1.2	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Wet Season

DATE			POND	POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	PONDR	m	INFLOW	SHRIMP	SPECIES
24	9	1986	C5	1.18	N		nil
24	9	1986	C7	1.33	N		nil
24	9	1986	D1	1.22	N		nil
24	9	1986	D3	1.26	N		nil
24	9	1986	D5	1.26	N		nil
24	9	1986	D6	1.17	N		nil
24	9	1986	D9	1.11	N		nil
28	9	1986	B1	1.05	N		nil
28	9	1986	C2	1.14	N		nil
28	9	1986	C3	1.15	N		nil
28	9	1986	C5	1.16	N		nil
28	9	1986	C7	1.31	N		nil
28	9	1986	D1	1.15	N		nil
28	9	1986	D3	1.25	N		nil
28	9	1986	D5	1.24	N		nil
28	9	1986	D6	1.15	N		nil
28	9	1986	D9	1.08	N		nil
1	10	1986	B1	1.26	Y		nil
1	10	1986	C2	1.29	Y		nil
1	10	1986	C3	1.26	Y		nil
1	10	1986	C5	1.28	Y		nil
1	10	1986	C7	1.3	N		nil
1	10	1986	D1	1.11	N		nil
1	10	1986	D3	1.24	N		nil
1	10	1986	D5	1.23	N		nil
1	10	1986	D6	1.13	N		nil
1	10	1986	D9	1.06	N		nil
5	10	1986	B1	1.27	N		nil
5	10	1986	C2	1.19	N		nil
5	10	1986	C3	1.2	N		nil
5	10	1986	C5	1.25	N		nil
5	10	1986	C7	1.3	N		nil
5	10	1986	D1	1.26	Y		nil
5	10	1986	D3	1.22	N		nil
5	10	1986	D5	1.22	N		nil
5	10	1986	D6	1.27	Y		nil
5	10	1986	D9	1.24	Y		nil
8	10	1986	B1	1.2	N		nil
8	10	1986	C2	1.27	Y		nil
8	10	1986	C3	1.28	Y		nil
8	10	1986	C5	1.25	N		nil
8	10	1986	C7	1.3	N		nil
8	10	1986	D1	1.24	N		nil
8	10	1986	D3	1.25	N		nil
8	10	1986	D5	1.34	Y		nil
8	10	1986	D6	1.26	N		nil
8	10	1986	D9	1.2	N		nil
12	10	1986	B1	1.22	N		nil
12	10	1986	C2	1.23	N		nil
12	10	1986	C3	1.2	N		nil
12	10	1986	C5	1.2	N		nil
12	10	1986	C7	1.34	N		nil
12	10	1986	D1	1.21	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Wet Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
12	10	1986	D3	1.27	Y		nil
12	10	1986	D5	1.34	N		nil
12	10	1986	D6	1.27	N		nil
12	10	1986	D9	1.26	Y		nil
15	10	1986	B1	1.27	Y		nil
15	10	1986	C2	1.24	N		nil
15	10	1986	C3	1.29	Y		nil
15	10	1986	C5	1.27	Y		nil
15	10	1986	C7	1.34	N		nil
15	10	1986	D1	1.21	N		nil
15	10	1986	D3	1.3	N		nil
15	10	1986	D5	1.34	N		nil
15	10	1986	D6	1.27	N		nil
15	10	1986	D9	1.22	N		nil
19	10	1986	B1	1.3	N		nil
19	10	1986	C2	1.28	N		nil
19	10	1986	C3	1.27	N		nil
19	10	1986	C5	1.26	N		nil
19	10	1986	C7	1.32	N		nil
19	10	1986	D1	1.29	Y		nil
19	10	1986	D3	1.32	N		nil
19	10	1986	D5	1.35	N		nil
19	10	1986	D6	1.3	N		nil
19	10	1986	D9	1.28	Y		nil
22	10	1986	B1	1.19	N		nil
22	10	1986	C2	1.22	N		nil
22	10	1986	C3	1.22	N		nil
22	10	1986	C5	1.22	N		nil
22	10	1986	C7	1.32	N		nil
22	10	1986	D1	1.24	N		nil
22	10	1986	D3	1.3	N		nil
22	10	1986	D5	1.33	N		nil
22	10	1986	D6	1.26	N		nil
22	10	1986	D9	1.2	N		nil
26	10	1986	B1	1.1	N		nil
26	10	1986	C2	1.16	N		nil
26	10	1986	C3	1.17	N		nil
26	10	1986	C5	1.2	N		nil
26	10	1986	C7	1.32	N		nil
26	10	1986	D1	1.18	N		nil
26	10	1986	D3	1.32	N		nil
26	10	1986	D5	1.34	N		nil
26	10	1986	D6	1.24	N		nil
26	10	1986	D9	1.15	N		nil
29	10	1986	B1	1.29	Y		nil
29	10	1986	C2	1.31	Y		nil
29	10	1986	C3	1.3	Y		nil
29	10	1986	C5	1.22	N		nil
29	10	1986	C7	1.34	N		nil
29	10	1986	D1	1.3	Y		nil
29	10	1986	D3	1.33	N		nil
29	10	1986	D5	1.34	N		nil
29	10	1986	D6	1.24	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Wet Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
29	10	1986	D9	1.28	Y		nil
2	11	1986	B1	1.18	N	3	nil
2	11	1986	C2	1.23	N	3	nil
2	11	1986	C3	1.24	N	3	nil
2	11	1986	C5	1.22	N	3	nil
2	11	1986	C7	1.34	N	3	nil
2	11	1986	D1	1.25	N	3	nil
2	11	1986	D3	1.33	N	3	nil
2	11	1986	D5	1.33	N	3	nil
2	11	1986	D6	1.24	N	3	nil
2	11	1986	D9	1.2	N	3	nil
5	11	1986	B1	1.21	N		nil
5	11	1986	C2	1.2	N		nil
5	11	1986	C3	1.21	N		nil
5	11	1986	C5	1.23	N		nil
5	11	1986	C7	1.34	N		nil
5	11	1986	D1	1.22	N		nil
5	11	1986	D3	1.34	N		nil
5	11	1986	D5	1.34	N		nil
5	11	1986	D6	1.24	N		nil
5	11	1986	D9	1.24	N		nil
9	11	1986	B1	1.1	N		nil
9	11	1986	C2	1.14	N		nil
9	11	1986	C3	1.16	N		nil
9	11	1986	C5	1.21	N		nil
9	11	1986	C7	1.33	N		nil
9	11	1986	D1	1.15	N		nil
9	11	1986	D3	1.32	N		nil
9	11	1986	D5	1.32	N		nil
9	11	1986	D6	1.22	N		nil
9	11	1986	D9	1.16	N		nil
12	11	1986	B1	1.26	Y		nil
12	11	1986	C2	1.26	Y		nil
12	11	1986	C3	1.3	Y		nil
12	11	1986	C5	1.22	N		nil
12	11	1986	C7	1.34	N		nil
12	11	1986	D1	1.28	Y		nil
12	11	1986	D3	1.33	N		nil
12	11	1986	D5	1.33	N		nil
12	11	1986	D6	1.22	N		nil
12	11	1986	D9	1.28	Y		nil
16	11	1986	B1	1.26	N		nil
16	11	1986	C2	1.23	N		nil
16	11	1986	C3	1.24	N		nil
16	11	1986	C5	1.22	N		nil
16	11	1986	C7	1.34	N		nil
16	11	1986	D1	1.24	N		nil
16	11	1986	D3	1.32	N		nil
16	11	1986	D5	1.34	N		nil
16	11	1986	D6	1.23	N		nil
16	11	1986	D9	1.21	N		nil
19	11	1986	B1	1.18	N		nil
19	11	1986	C2	1.2	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Wet Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
19	11	1986	C3	1.2	N		nil
19	11	1986	C5	1.22	N		nil
19	11	1986	C7	1.34	N		nil
19	11	1986	D1	1.19	N		nil
19	11	1986	D3	1.32	N		nil
19	11	1986	D5	1.34	N		nil
19	11	1986	D6	1.22	N		nil
19	11	1986	D9	1.16	N		nil
23	11	1986	B1	1.2	N		nil
23	11	1986	C2	1.25	N		nil
23	11	1986	C3	1.26	Y		nil
23	11	1986	C5	1.22	N		nil
23	11	1986	C7	1.34	N		nil
23	11	1986	D1	1.24	N		nil
23	11	1986	D3	1.32	N		nil
23	11	1986	D5	1.32	N		nil
23	11	1986	D6	1.21	N		nil
23	11	1986	D9	1.21	N		nil
26	11	1986	B1	1.21	N		nil
26	11	1986	C2	1.2	N		nil
26	11	1986	C3	1.2	N		nil
26	11	1986	C5	1.22	N		nil
26	11	1986	C7	1.34	N		nil
26	11	1986	D1	1.19	N		nil
26	11	1986	D3	1.31	N		nil
26	11	1986	D5	1.31	N		nil
26	11	1986	D6	1.2	N		nil
26	11	1986	D9	1.15	N		nil
30	11	1986	B1	1.24	N	3	nil
30	11	1986	C2	1.16	N	3	nil
30	11	1986	C3	1.15	N	3	nil
30	11	1986	C5	1.22	N	3	nil
30	11	1986	C7	1.34	N	3	nil
30	11	1986	D1	1.28	Y	3	nil
30	11	1986	D3	1.31	N	3	nil
30	11	1986	D5	1.3	N	3	nil
30	11	1986	D6	1.2	N	3	nil
30	11	1986	D9	1.17	N	3	nil
3	12	1986	B1	1.16	N		nil
3	12	1986	C2	1.3	N		nil
3	12	1986	C3	1.26	Y		nil
3	12	1986	C5	1.22	N		nil
3	12	1986	C7	1.35	N		nil
3	12	1986	D1	1.23	N		nil
3	12	1986	D3	1.3	N		nil
3	12	1986	D5	1.3	N		nil
3	12	1986	D6	1.2	N		nil
3	12	1986	D9	1.26	Y		nil
7	12	1986	B1	1.12	N		nil
7	12	1986	C2	1.16	N		nil
7	12	1986	C3	1.12	N		nil
7	12	1986	C5	1.12	N		nil
7	12	1986	C7	1.33	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Wet Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
7	12	1986	D1	1.16	N		nil
7	12	1986	D3	1.27	N		nil
7	12	1986	D5	1.28	N		nil
7	12	1986	D6	1.18	N		nil
7	12	1986	D9	1.15	N		nil
10	12	1986	B1	1.17	N		nil
10	12	1986	C2	1.19	N		nil
10	12	1986	C3	1.18	N		nil
10	12	1986	C5	1.21	N		nil
10	12	1986	C7	1.34	N		nil
10	12	1986	D1	1.26	Y		nil
10	12	1986	D3	1.25	N		nil
10	12	1986	D5	1.28	N		nil
10	12	1986	D6	1.18	N		nil
10	12	1986	D9	1.28	Y		nil
14	12	1986	B1	1.16	N		nil
14	12	1986	C2	1.16	N		nil
14	12	1986	C3	1.16	N		nil
14	12	1986	C5	1.06	N		nil
14	12	1986	C7	1.3	N		nil
14	12	1986	D1	1.16	N		nil
14	12	1986	D3	1.18	N		nil
14	12	1986	D5	1.21	N		nil
14	12	1986	D6	1.14	N		nil
14	12	1986	D9	1.12	N		nil
17	12	1986	B1	1.22	Y		nil
17	12	1986	C2	1.23	Y		nil
17	12	1986	C3	1.2	Y		nil
17	12	1986	C5	1.2	Y		nil
17	12	1986	C7	1.28	N		nil
17	12	1986	D1	1.24	Y		nil
17	12	1986	D3	1.27	Y		nil
17	12	1986	D5	1.2	N		nil
17	12	1986	D6	1.13	N		nil
17	12	1986	D9	1.08	N		nil
21	12	1986	B1	1.1	N		nil
21	12	1986	C2	1.15	N		nil
21	12	1986	C3	1.28	Y		nil
21	12	1986	C5	1.3	Y		nil
21	12	1986	C7	1.31	N		nil
21	12	1986	D1	1.19	N		nil
21	12	1986	D3	1.3	N		nil
21	12	1986	D5	1.29	Y		nil
21	12	1986	D6	1.26	Y		nil
21	12	1986	D9	1.21	Y		nil
24	12	1986	B1	1.2	Y		nil
24	12	1986	C2	1.22	Y		nil
24	12	1986	C3	1.21	N		nil
24	12	1986	C5	1.28	N		nil
24	12	1986	C7	1.32	N		nil
24	12	1986	D1	1.25	Y		nil
24	12	1986	D3	1.3	N		nil
24	12	1986	D5	1.3	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Wet Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
24	12	1986	D6	1.24	N		nil
24	12	1986	D9	1.17	N		nil
28	12	1986	B1	1.26	Y		nil
28	12	1986	C2	1.18	N		nil
28	12	1986	C3	1.16	N		nil
28	12	1986	C5	1.25	N		nil
28	12	1986	C7	1.32	N		nil
28	12	1986	D1	1.2	N		nil
28	12	1986	D3	1.28	N		nil
28	12	1986	D5	1.3	N		nil
28	12	1986	D6	1.23	N		nil
28	12	1986	D9	1.29	Y		nil
31	12	1986	B1	1.17	N	3	nil
31	12	1986	C2	1.18	N	3	nil
31	12	1986	C3	1.25	Y	3	nil
31	12	1986	C5	1.27	N	3	nil
31	12	1986	C7	1.32	N	3	nil
31	12	1986	D1	1.16	N	3	nil
31	12	1986	D3	1.28	N	3	nil
31	12	1986	D5	1.32	N	3	nil
31	12	1986	D6	1.22	N	3	nil
31	12	1986	D9	1.23	N	3	nil
4	1	1987	B1	1.24	Y		nil
4	1	1987	C2	1.29	Y		nil
4	1	1987	C3	1.2	N		nil
4	1	1987	C5	1.26	N		nil
4	1	1987	C7	1.35	N		nil
4	1	1987	D1	1.29	Y		nil
4	1	1987	D3	1.26	N		nil
4	1	1987	D5	1.32	N		nil
4	1	1987	D6	1.23	N		nil
4	1	1987	D9	1.18	N		nil
7	1	1987	B1	1.15	N		nil
7	1	1987	C2	1.24	N		nil
7	1	1987	C3	1.25	Y		nil
7	1	1987	C5	1.24	N		nil
7	1	1987	C7	1.35	N		nil
7	1	1987	D1	1.24	N		nil
7	1	1987	D3	1.25	N		nil
7	1	1987	D5	1.32	N		nil
7	1	1987	D6	1.22	N		nil
7	1	1987	D9	1.23	Y		nil
11	1	1987	B1	1.18	N		nil
11	1	1987	C2	1.2	N		nil
11	1	1987	C3	1.2	N		nil
11	1	1987	C5	1.24	N		nil
11	1	1987	C7	1.35	N		nil
11	1	1987	D1	1.2	N		nil
11	1	1987	D3	1.3	Y		nil
11	1	1987	D5	1.32	N		nil
11	1	1987	D6	1.24	N		nil
11	1	1987	D9	1.16	N		nil
14	1	1987	B1	1.22	Y		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Wet Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
14	1	1987	C2	1.15	N		nil
14	1	1987	C3	1.13	N		nil
14	1	1987	C5	1.22	N		nil
14	1	1987	C7	1.35	N		nil
14	1	1987	D1	1.14	N		nil
14	1	1987	D3	1.32	N		nil
14	1	1987	D5	1.32	N		nil
14	1	1987	D6	1.23	N		nil
14	1	1987	D9	1.13	N		nil
18	1	1987	B1	1.28	Y		nil
18	1	1987	C2	1.28	Y		nil
18	1	1987	C3	1.27	Y		nil
18	1	1987	C5	1.22	N		nil
18	1	1987	C7	1.35	N		nil
18	1	1987	D1	1.29	Y		nil
18	1	1987	D3	1.32	N		nil
18	1	1987	D5	1.31	N		nil
18	1	1987	D6	1.2	N		nil
18	1	1987	D9	1.28	Y		nil
21	1	1987	B1	1.19	N	3	nil
21	1	1987	C2	1.25	N	3	nil
21	1	1987	C3	1.22	N	3	nil
21	1	1987	C5	1.23	N	3	nil
21	1	1987	C7	1.34	N	3	nil
21	1	1987	D1	1.25	N	4	nil
21	1	1987	D3	1.31	N	3	nil
21	1	1987	D5	1.31	N	3	nil
21	1	1987	D6	1.3	Y	3	nil
21	1	1987	D9	1.21	N	3	nil
25	1	1987	B1	1.22	N		nil
25	1	1987	C2	1.25	N		nil
25	1	1987	C3	1.21	N		nil
25	1	1987	C5	1.27	Y		nil
25	1	1987	C7	1.35	N		nil
25	1	1987	D1	1.26	N		nil
25	1	1987	D3	1.33	N		nil
25	1	1987	D5	1.36	N		nil
25	1	1987	D6	1.31	N		nil
25	1	1987	D9	1.18	N		nil
28	1	1987	B1	1.13	N		nil
28	1	1987	C2	1.21	N		nil
28	1	1987	C3	1.16	N		nil
28	1	1987	C5	1.26	N		nil
28	1	1987	C7	1.34	N		nil
28	1	1987	D1	1.21	N		nil
28	1	1987	D3	1.32	N		nil
28	1	1987	D5	1.36	N		nil
28	1	1987	D6	1.29	N		nil
28	1	1987	D9	1.14	N		nil
1	2	1987	B1	1.1	N		nil
1	2	1987	C2	1.23	N		nil
1	2	1987	C3	1.3	Y		nil
1	2	1987	C5	1.3	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Wet Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
1	2	1987	C7	1.35	N		nil
1	2	1987	D1	1.2	N		nil
1	2	1987	D3	1.33	N		nil
1	2	1987	D5	1.37	N		nil
1	2	1987	D6	1.31	N		nil
1	2	1987	D9	1.27	Y		nil
4	2	1987	B1	1.04	N		nil
4	2	1987	C2	1.2	N		nil
4	2	1987	C3	1.24	N		nil
4	2	1987	C5	1.28	N		nil
4	2	1987	C7	1.34	N		nil
4	2	1987	D1	1.2	N		nil
4	2	1987	D3	1.33	N		nil
4	2	1987	D5	1.36	N		nil
4	2	1987	D6	1.29	N		nil
4	2	1987	D9	1.19	N		nil
8	2	1987	B1	1.18	N		nil
8	2	1987	C2	1.26	N		nil
8	2	1987	C3	1.19	N		nil
8	2	1987	C5	1.28	N		nil
8	2	1987	C7	1.35	N		nil
8	2	1987	D1	1.2	N		nil
8	2	1987	D3	1.3	N		nil
8	2	1987	D5	1.36	N		nil
8	2	1987	D6	1.28	N		nil
8	2	1987	D9	1.3	Y		nil
11	2	1987	B1	1.17	N		nil
11	2	1987	C2	1.25	N		nil
11	2	1987	C3	1.18	N		nil
11	2	1987	C5	1.26	N		nil
11	2	1987	C7	1.35	N		nil
11	2	1987	D1	1.19	N		nil
11	2	1987	D3	1.29	N		nil
11	2	1987	D5	1.35	N		nil
11	2	1987	D6	1.27	N		nil
11	2	1987	D9	1.29	N		nil
15	2	1987	B1	1.21	N		nil
15	2	1987	C2	1.21	N		nil
15	2	1987	C3	1.27	Y		nil
15	2	1987	C5	1.26	N		nil
15	2	1987	C7	1.37	N		nil
15	2	1987	D1	1.19	N		nil
15	2	1987	D3	1.34	N		nil
15	2	1987	D5	1.36	N		nil
15	2	1987	D6	1.27	N		nil
15	2	1987	D9	1.18	N		nil
18	2	1987	B1	1.21	N		nil
18	2	1987	C2	1.21	N		nil
18	2	1987	C3	1.26	N		nil
18	2	1987	C5	1.25	N		nil
18	2	1987	C7	1.36	N		nil
18	2	1987	D1	1.19	N		nil
18	2	1987	D3	1.32	N		nil

Table 2. Daily Pond Measurements. Rwanda, Cycle I, Wet Season

DATE				POND DEPTH	WATER	NUMBER OF DEAD FISH/	
DAY	MONTH	YEAR	POND#	m	INFLOW	SHRIMP	SPECIES
18	2	1987	D5	1.35	N		nil
18	2	1987	D6	1.27	N		nil
18	2	1987	D9	1.18	N		nil
22	2	1987	B1	1.18	N		nil
22	2	1987	C2	1.18	N		nil
22	2	1987	C3	1.16	N		nil
22	2	1987	C5	1.21	N		nil
22	2	1987	C7	1.34	N		nil
22	2	1987	D1	1.13	N		nil
22	2	1987	D3	1.33	N		nil
22	2	1987	D5	1.36	N		nil
22	2	1987	D6	1.26	N		nil
22	2	1987	D9	1.18	N		nil
24	2	1987	B1	1.26	Y	3	nil
24	2	1987	C2	1.29	Y	3	nil
24	2	1987	C3	1.28	Y	3	nil
24	2	1987	C5	1.2	N	3	nil
24	2	1987	C7	1.34	N	3	nil
24	2	1987	D1	1.3	Y	4	nil
24	2	1987	D3	1.3	N	3	nil
24	2	1987	D5	1.36	N	3	nil
24	2	1987	D6	1.24	N	3	nil
24	2	1987	D9	1.16	N	3	nil

Table 3. Weekly and Twice Weekly Measurements. Rwanda, Cycle I, Dry Season

DAY	NO.	YEAR	EXTRA DATA?	POND#	DO TIME	DO @ TOP	DO @ MID	DO @ BOTTOM	WATER TEMP @ TOP	WATER TEMP @ MID	WATER TEMP @ BOTTOM	WATER TEMP @ TOP-MAX	WATER TEMP @ BOT-MAX	WATER TEMP @ TOP-MIN	WATER TEMP @ BOT-MIN	ALKA.	HARD.	pH	KJELDAHL N	NH3-N	NO2-N	NO3-N	TOTAL NO2 & NO3-N	TOTAL P	ORTHO PO4-P	SECHI DISK A	SECHI DISK B	CHLOR-OPHYLL A
21	2	1986	Y	B1	535	6.2	5.9	5.4	24.	23.3	23.					61.	71.	7.5		0.02		0.07		0.04	0.	109.		12.
21	2	1986	Y	C2	540	6.3	6.3	6.3	24.	23.6	23.6	35.	33.	21.	21.	79.	89.	7.7		0.11		0.07		0.06	0.	107.		0.
21	2	1986	Y	C3	548	7.7	7.7	7.7	24.	23.	23.					56.	80.	8.7		0.07		0.13		0.05	0.01	116.		12.
21	2	1986	Y	C5	552	7.7	7.7	7.5	24.	23.8	23.6					80.	108.	8.2		0.07		0.05		0.04	0.01	124.		24.
21	2	1986	Y	C7	556	6.4	6.4	6.4	24.5	24.2	24.2					75.	92.	7.8		0.02		0.04		0.02	0.02	120.		0.
21	2	1986	Y	C8	600	6.9	6.8	6.8	24.2	24.	24.	32.	29.	21.	20.	66.	77.	8.3		0.21		0.04		0.05	0.01	107.		0.
21	2	1986	Y	D1	610	6.1	6.1	6.1	24.1	23.8	23.6					56.	66.	7.4		0.09		0.12		0.06	0.01	127.		0.
21	2	1986	Y	D3	619	5.2	5.1	5.1	24.	23.8	23.6					79.	89.	7.3		0.11		0.04		0.03	0.01	149.		12.
21	2	1986	Y	D5	628	5.4	5.2	5.2	24.	23.8	23.6					75.	84.	7.2		0.07		0.06		0.02	0.01	156.		12.
21	2	1986	Y	D6	633	5.1	5.1	5.1	23.8	23.6	23.4	33.	28.	21.	20.	79.	95.	7.3		0.07		0.07		0.03	0.01	137.		0.
21	2	1986	Y	D9	646	5.4	5.4	5.4	23.8	23.4	22.9					71.	90.	7.5		0.08		0.04		0.03	0.01	69.		0.
21	2	1986	Y	D10	650	5.5	5.5	5.5		23.5	23.					75.	81.	7.4		0.19		0.07		0.03	0.01	124.		12.
28	2	1986	N	B1	613	4.8	4.8	4.7	21.	20.	19.9					50.	66.	7.8										
28	2	1986	N	C2	615	4.8	4.8	4.6	22.	21.	20.6	29.	25.	20.	20.	72.	90.	7.9										
28	2	1986	N	C3	617	4.6	4.6	4.6	21.5	20.5	20.					57.	74.	8.8										
28	2	1986	N	C5	620	4.9	4.8	4.8	22.	21.	20.8					82.	108.	7.8										
28	2	1986	N	C7	623	4.7	4.7	4.7	21.1	21.2	20.5					72.	96.	7.6										
28	2	1986	N	C8	625	5.6	5.6	5.3	22.	21.4	20.	28.	25.	19.	19.	70.	84.	8.4										
28	2	1986	N	D1	627	5.3	5.3	5.3	21.6	20.9	20.6					60.	69.	7.8										
28	2	1986	N	D3	630	4.8	4.8	4.8	22.	21.8	21.5					82.	98.	7.5										
28	2	1986	N	D5	633	4.7	4.7	4.6	22.	21.5	21.3					73.	90.	7.4										
28	2	1986	N	D6	635	5.9	5.9	5.8	22.	21.5	21.3	27.	25.	20.	19.	81.	92.	7.6										
28	2	1986	N	D9	637	5.6	5.4	5.4	22.3	21.8	21.3					80.	93.	7.7										
28	2	1986	N	D10	640	5.7	5.7	5.7	22.3	21.6	21.2					69.	84.	7.5										
7	3	1986	N	B1	545	6.7	6.6	6.6	22.	21.	20.9					48.	62.	8.6										
7	3	1986	N	C2	605	4.7	4.7	4.7	22.	21.	20.9	28.	24.	19.	19.	71.	72.	7.6								63.	61.	71.
7	3	1986	N	C3	610	4.4	4.4	4.4	22.	21.1	20.9					67.	99.	8.1								67.	63.	48.
7	3	1986	N	C5	615	5.3	5.3	5.3	22.	21.4	21.					69.	93.	7.6								63.	59.	24.
7	3	1986	N	C7	620	5.1	5.1	5.1	22.5	21.9	21.2					74.	89.	7.5								85.	77.	48.
7	3	1986	N	C8	625	6.	6.	6.	22.4	21.6	21.2	26.	23.	19.	19.	60.	72.	8.3								103.	99.	24.
7	3	1986	N	D1	630	4.9	4.9	4.7	22.	21.	20.9					56.	68.	7.8								77.	71.	24.
7	3	1986	N	D3	633	4.7	4.7	4.7	22.	21.8	21.4					79.	92.	7.4								81.	51.	36.
7	3	1986	N	D5	635	4.9	4.9	4.9	22.8	22.6	22.					67.	86.	7.4								103.	83.	36.
7	3	1986	N	D6	637	4.6	4.6	4.5	22.4	22.	21.8	28.	24.	20.	20.	84.	92.	7.5								135.	125.	36.
7	3	1986	N	D9	640	4.8	4.8	4.8	22.1	21.8	21.4					84.	96.	7.6								135.	117.	12.
7	3	1986	N	D10	642	4.9	4.8	4.8	22.4	21.6	21.3					65.	78.	7.5								89.	81.	24.
14	3	1986	N	D10	615	5.1	5.1	5.1	22.4	22.3	21.3					60.		7.7								95.	93.	24.
14	3	1986	N	D9	617	4.6	4.3	4.1	22.4	22.3	21.4					66.		7.6										
14	3	1986	N	D6	620	4.2	4.1	4.	22.4	22.2	21.4	28.	23.	20.	19.	76.		7.6										
14	3	1986	N	D5	622	4.4	4.3	4.3	22.4	22.2	21.5					55.		7.3										
14	3	1986	N	D3	625	5.1	4.9	4.9	22.4	22.2	21.5					58.		7.6										
14	3	1986	N	D1	627	4.7	4.7	4.6	21.	20.6	20.9					59.		7.7										
14	3	1986	N	C8	630	4.5	4.5	4.5	21.8	21.	20.9	26.	24.	20.	20.	67.		7.9										
14	3	1986	N	C7	632	5.	5.	4.9	22.8	21.6	21.					63.		7.6										

Table 3. Weekly and Twice Weekly Measurements. Rwanda, Cycle I, Dry Season

DAY	MO.	YEAR	EXTRA DATA?	POND#	DO TIME	DO @ TOP	DO @ MID	DO @ BOTTOM	WATER TEMP @ TOP	WATER TEMP @ MID	WATER TEMP @ BOTTOM	WATER TEMP @ TOP-MAX	WATER TEMP @ BOT-MAX	WATER TEMP @ TOP-MIN	WATER TEMP @ BOT-MIN	ALKA.	HARD.	pH	KJELDAHL N	NH3-N	NO2-N	NO3-N	TOTAL NO2 & NO3-N	TOTAL P	ORTHO PO4-P	SECHII DISK A	SECHII DISK B	CHLOR-OPHYLL A
14	3	1986	N	C5	637	4.4	4.4	4.4	22.	21.	20.6					70.		7.6										
14	3	1986	N	C3	640	4.9	4.8	4.8	22.	21.	20.6					72.		8.										
14	3	1986	N	C2	648	4.9	4.9	4.7	20.8	20.4	20.	27.	23.	20.	20.	63.		7.6										
14	3	1986	N	B1	657	4.8	4.8	4.8	22.6	22.4	22.					51.		7.7										
21	3	1986	Y	B1	618	6.5	6.4	6.4	20.	20.1	20.1					40.	86.	7.7		0.1		0.1		0.13	0.01	78.	77.	24.
21	3	1986	Y	C2	621	6.9	6.8	6.8	19.8	19.8	19.8	27.	23.	20.	20.	65.	122.	7.2		0.04		0.05		0.12	0.01	75.	73.	36.
21	3	1986	Y	C3	623	6.1	6.	6.	20.	20.1	20.1					66.	117.	7.9		0.04		0.04		0.11	0.01	85.	75.	24.
21	3	1986	Y	C5	625	6.2	6.	6.	20.1	20.2	20.2					70.	131.	7.5		0.05		0.04		0.12	0.01	97.	95.	36.
21	3	1986	Y	C7	628	4.5	4.5	4.9	20.1	20.2	20.2					68.	111.	7.3		0.06		0.033		0.08	0.01	107.	95.	12.
21	3	1986	Y	C8	630	5.6	5.5	5.5	20.	20.	20.	26.	24.	20.	20.	60.	98.	7.4		0.07		0.04		0.14	0.02	87.	73.	12.
21	3	1986	Y	D1	632	5.5	5.2	5.1	19.2	19.2	19.2					59.	101.	7.4		0.06		0.07		0.14	0.02	55.	51.	48.
21	3	1986	Y	D3	635	5.5	5.4	5.4	20.2	20.2	20.2					75.	122.	7.3		0.04		0.04		0.14	0.01	99.	81.	24.
21	3	1986	Y	D5	637	4.7	4.7	4.7	20.4	20.3	20.2					65.	120.	7.3		0.04		0.03		0.08	0.01	115.	101.	12.
21	3	1986	Y	D6	640	4.8	4.8	4.8	20.3	20.2	20.2	28.	23.	21.	20.	78.	128.	7.3		0.06		0.05		0.11	0.01	97.	85.	36.
21	3	1986	Y	D9	645	4.9	4.7	4.7	19.8	19.8	19.8					76.	131.	7.3		0.06		0.05		0.12	0.02	63.	61.	12.
21	3	1986	Y	D10	650	4.8	4.8	4.8	20.1	20.1	20.2					61.	126.	7.4		0.04		0.04		0.1	0.01	119.	95.	12.
28	3	1986	N	D10	600	4.3	4.2	4.8	23.	22.4	22.					59.		7.5										
28	3	1986	N	D9	601	5.5	5.5	5.5	23.	22.5	21.5					78.		7.8										
28	3	1986	N	D6	602	4.8	4.8	4.8	23.5	22.4	21.9					82.		7.6										
28	3	1986	N	D5	603	4.8	4.8	4.7	23.7	22.6	22.					68.		7.3										
28	3	1986	N	D3	605	6.	6.	5.8	23.6	22.	21.5					71.		7.6										
28	3	1986	N	D1	607	5.7	5.7	5.7	22.	21.5	21.					60.		7.8										
28	3	1986	N	C8	610	5.9	5.2	5.1	23.	22.5	21.3					67.		8.										
28	3	1986	N	C7	612	5.8	5.8	5.8	24.	22.5	22.					64.		7.6										
28	3	1986	N	C5	615	6.3	6.3	6.3	24.	22.5	22.					69.		7.7										
28	3	1986	N	C3	618	4.9	4.9	4.9	23.	22.	21.5					70.		7.8										
28	3	1986	N	C2	622	4.7	4.7	4.7	23.	22.	21.3	27.	23.	20.	20.	69.		7.5										
28	3	1986	N	B1	625	5.	5.	5.	22.6	22.	21.2					41.		7.9										
4	4	1986	N	B1	600	6.5	6.5	6.5	22.8	22.4	22.2					38.	69.	8.2								83.	71.	36.
4	4	1986	N	C2	604	5.4	5.1	4.8	22.8	22.3	22.	26.	25.	21.	21.	60.	105.	7.6								77.	77.	36.
4	4	1986	N	C3	609	5.6	5.3	4.4	22.7	22.1	21.9					59.	117.	8.1								63.	61.	36.
4	4	1986	N	C5	615	5.5	5.2	4.3	23.	22.8	22.5					64.	126.	7.6								106.	102.	24.
4	4	1986	N	C7	619	4.9	4.9	4.8	23.2	22.9	22.6					51.	116.	7.3								96.	81.	12.
4	4	1986	N	C8	623	6.1	6.1	5.9	23.2	22.9	22.5	25.	24.	21.	20.	58.	102.	8.2								87.	83.	12.
4	4	1986	N	D1	627	5.3	5.	3.8	22.8	22.3	22.					45.	107.	7.6								63.	57.	17.
4	4	1986	N	D3	632	4.3	4.3	4.3	23.	22.8	22.5					62.	122.	7.5								123.	121.	24.
4	4	1986	N	D5	637	4.8	4.7	4.5	23.4	23.	22.7					63.	110.	7.3								99.	89.	24.
4	4	1986	N	D6	641	4.9	4.9	4.9	23.7	23.1	22.6	27.	24.	21.	20.	75.	132.	7.5								98.	95.	12.
4	4	1986	N	D9	646	5.2	5.2	5.2	23.9	23.2	22.7					61.	117.	7.7								119.	93.	19.
4	4	1986	N	D10	651	4.7	4.7	4.7	23.9	23.2	22.6					56.	96.	7.4								95.	85.	17.
11	4	1986	N	B1	550	5.3	5.3	5.3	21.8	21.8	21.8					32.	109.	7.4										
11	4	1986	N	C2	555	6.2	6.2	6.1	21.5	21.4	21.4	26.	24.	20.	21.	42.	115.	7.3										
11	4	1986	N	C3	559	6.2	6.2	6.2	21.9	21.8	21.8					69.	51.	7.7										
11	4	1986	N	C5	604	6.5	6.4	5.9	22.	22.	21.9					55.	122.	7.4										
11	4	1986	N	C7	609	6.	5.9	5.3	21.9	21.9	21.8					50.	96.	7.3										

Table 3. Weekly and Twice Weekly Measurements. Rwanda, Cycle I, Dry Season

DAY	MO.	YEAR	EXTRA DATA?	POND#	DO TIME	DO @ TOP	DO @ MID	DO @ BOTTOM	WATER TEMP @ TOP	WATER TEMP @ MID	WATER TEMP @ BOTTOM	WATER TEMP @ TOP-MAX	WATER TEMP @ BOT-MAX	WATER TEMP @ TOP-MIN	WATER TEMP @ BOT-MIN	ALKA.	HARD.	pH	KJELDAHL N	NH3-N	NO2-N	NO3-N	TOTAL NO2 & NO3-N	TOTAL P	ORTHO PO4-P	SECHII DISK A	SECHII DISK B	CHLOR-OPHYLL A
11	4	1986	N	C8	614	6.2	6.2	6.1	21.8	21.8	21.8	25.	24.	20.	20.	54.	109.	7.5										
11	4	1986	N	D1	620	5.8	5.6	4.5	21.3	21.3	21.3					53.	90.	7.5										
11	4	1986	N	D3	625	5.2	5.2	5.2	22.	22.	21.9					57.	122.	7.2										
11	4	1986	N	D5	629	5.8	5.7	4.3	21.8	21.8	21.7					49.	102.	7.2										
11	4	1986	N	D6	633	5.1	5.	4.8	21.8	21.7	21.7	26.	24.	21.	19.	52.	122.	7.3										
11	4	1986	N	D9	637	5.9	5.6	4.8	21.7	21.7	21.6					42.	115.	7.5										
11	4	1986	N	D10	644	5.7	5.6	5.5	21.9	21.9	21.8					44.	96.	7.5										
17	4	1986	Y	B1	600	6.1	6.	6.	20.9	20.9	21.					35.	103.	7.1		0.		0.05		0.12	0.01	81.	69.	8.
17	4	1986	Y	C2	603	6.	5.9	5.9	21.1	21.2	21.2	27.	24.	21.	20.	50.	96.	7.3		0.01		0.04		0.08	0.01	121.	88.	4.
17	4	1986	Y	C3	606	6.3	6.2	6.1	21.	21.1	21.1					60.	128.	7.7		0.		0.04		0.09	0.01	138.	137.	4.
17	4	1986	Y	C5	610	5.9	5.9	5.9	21.2	21.3	21.5					52.	109.	7.4		0.01		0.04		0.07	0.01	141.	101.	4.
17	4	1986	Y	C7	614	6.3	6.3	6.2	21.2	21.3	21.3					42.	90.	7.2		0.		0.02		0.08	0.01	139.	95.	0.
17	4	1986	Y	C8	617	6.2	6.2	6.2	21.	21.	21.	26.	25.	20.	20.	56.	115.	7.7		0.02		0.05		0.12	0.02	83.	79.	8.
17	4	1986	Y	D1	620	6.2	6.2	6.2	21.	21.	21.					53.	96.	7.5		0.02		0.07		0.11	0.02	79.	69.	4.
17	4	1986	Y	D3	622	4.9	4.9	4.9	21.5	21.5	21.5					57.	109.	7.2		0.09		0.04		0.07	0.01	167.	129.	8.
17	4	1986	Y	D5	625	5.8	5.8	5.8	21.3	21.2	21.2					50.	96.	7.1		0.39		0.05		0.07	0.01	181.	137.	8.
17	4	1986	Y	D6	628	5.3	5.3	5.3	21.1	21.1	21.1	27.	24.	21.	20.	64.	135.	7.3		0.03		0.05		0.08	0.01	159.	117.	4.
17	4	1986	Y	D9	632	5.7	5.7	5.7	21.3	21.2	21.2					58.	109.	7.5		0.07		0.05		0.09	0.01	109.	87.	4.
17	4	1986	Y	D10	635	6.	5.9	5.9	21.8	21.8	21.8					47.	90.	7.4		0.02		0.02		0.07	0.	139.	109.	4.
2	5	1986	Y	B1	600	4.7	4.7	4.7	22.	22.	22.					33.	64.	7.2		0.03		0.06		0.12	0.03	31.		0.
2	5	1986	Y	C2	605	4.5	4.5	4.5	22.	22.	22.	27.	25.	21.	20.	39.	109.	7.2		0.02		0.04		0.1	0.01	32.		1.
2	5	1986	Y	C3	610	5.	5.	5.	22.	22.	22.					62.	96.	7.5		0.		0.02		0.09	0.01	49.		0.
2	5	1986	Y	C5	615	5.1	5.1	5.1	22.	22.	22.					48.	64.	7.3		0.		0.04		0.08	0.01	58.		1.
2	5	1986	Y	C7	619	5.1	5.1	5.1	22.	22.	22.					33.	96.	7.1		0.01		0.03		0.08	0.02	40.		1.
2	5	1986	Y	C8	623	5.2	5.2	5.1	22.	22.	22.	26.	24.	20.	20.	51.	90.	7.4		0.02		0.03		0.09	0.02	39.		1.
2	5	1986	Y	D1	627	5.2	5.2	5.2	22.	22.	22.					46.	103.	7.3		0.05		0.04		0.08	0.02	41.		0.
2	5	1986	Y	D3	631	4.6	4.6	4.6	22.	22.	22.					47.	103.	7.		0.		0.05		0.08	0.01	59.		1.
2	5	1986	Y	D5	635	4.5	4.5	4.5	22.	22.	22.					43.	103.	7.		0.05		0.04		0.08	0.02	40.		0.
2	5	1986	Y	D6	638	4.1	4.1	4.1	22.	22.	22.	27.	25.	21.	19.	50.	96.	7.1		0.01		0.05		0.07	0.02	52.		0.
2	5	1986	Y	D9	644	5.1	5.1	5.1	22.	22.	22.					48.	109.	7.3		0.02		0.03		0.08	0.02	51.		0.
2	5	1986	Y	D10	648	5.	5.	5.	22.	22.	22.					38.	83.	7.1		0.02		0.04		0.07	0.02	60.		0.
9	5	1986	N	B1	550	4.6	4.6	4.6	21.	21.	21.					34.	83.	7.1										
9	5	1986	N	C2	555	4.9	4.8	4.8	22.5	22.5	22.5	28.	25.	21.	22.	43.	115.	7.2										
9	5	1986	N	C3	600	5.3	5.3	5.3	23.	23.	23.					62.	115.	7.6										
9	5	1986	N	C5	603	4.8	4.8	4.8	23.	23.	23.					50.	96.	7.4										
9	5	1986	N	C7	607	5.3	5.2	5.	23.	23.	23.					32.	115.	7.										
9	5	1986	N	C8	610	5.1	5.1	5.1	23.	23.	23.	27.	26.	22.	21.	57.	122.	7.5										
9	5	1986	N	D1	615	5.	4.9	4.9	23.	23.	23.					48.	115.	7.4										
9	5	1986	N	D3	620	4.7	4.7	4.7	23.	23.	23.					51.	122.	7.2										
9	5	1986	N	D5	638	5.1	5.1	5.1	23.	23.	23.					43.	90.	7.3										
9	5	1986	N	D6	640	4.6	4.4	4.4	23.	23.	23.	29.	27.	22.	23.	50.	128.	7.2										
9	5	1986	N	D9	643	4.9	4.9	4.9	23.	23.	23.					48.	109.	7.4										
9	5	1986	N	D10	648	5.1	5.	4.9	23.	23.	23.					40.	83.	7.3										
15	5	1986	Y	B1	545	5.6	5.6	5.6	21.5	21.5	21.5					38.	77.	7.1		0.06		0.1		0.13	0.01	33.	32.	14.
15	5	1986	Y	C2	550	6.4	6.3	6.3	21.	21.	21.	28.	25.	21.	20.	47.	115.	7.1		0.02		0.07		0.12	0.	33.	31.	8.

Table 3. Weekly and Twice Weekly Measurements. Rwanda, Cycle I, Dry Season

DAY	NO.	YEAR	EXTRA DATA?	PONDS	DO TIME	DO @ TOP	DO @ MID	DO @ BOTTOM	WATER TEMP @ TOP	WATER TEMP @ MID	WATER TEMP @ BOTTOM	WATER TEMP @ TOP-MAX	WATER TEMP @ BOT-MAX	WATER TEMP @ TOP-MIN	WATER TEMP @ BOT-MIN	ALKA.	HARD.	pH	KJELDAHL N	NH3-N	NO2-N	NO3-N	TOTAL NO2 & NO3-N	TOTAL P	ORTHO PO4-P	SECHII DISK A	SECHII DISK B	CHLOR-OPHYLL A
15	5	1986	Y	C3	554	6.5	6.5	6.5	17.	17.	17.					68.	103.	7.5		0.02		0.03		0.12	0.	43.	40.	8.
15	5	1986	Y	C5	600	5.5	5.5	5.5	17.	17.	17.					53.	83.	7.3		0.01		0.08		0.09	0.01	50.	42.	7.
15	5	1986	Y	C7	604	6.1	6.	5.9	17.5	17.	16.5					39.	109.	7.		0.01		0.04		0.08	0.01	52.	51.	4.
15	5	1986	Y	C8	608	6.9	6.8	6.8	17.	17.	17.	27.	25.	21.	21.	62.	103.	7.6		0.02		0.07		0.11	0.01	40.	31.	8.
15	5	1986	Y	D1	612	6.1	6.1	6.	16.	16.	16.					53.	115.	7.5		0.02		0.07		0.1	0.01	38.	35.	3.
15	5	1986	Y	D3	615	4.8	4.8	4.6	16.	16.	16.					58.	103.	7.1		0.19		0.07		0.07	0.	71.	66.	0.
15	5	1986	Y	D5	617	5.2	5.2	5.2	21.5	21.5	21.5					45.	103.	7.2		0.05		0.06		0.09	0.	49.	42.	7.
15	5	1986	Y	D6	623	5.5	5.5	5.5	22.5	22.	22.	29.	26.	21.	20.	54.	103.	7.3		0.23		0.06		0.08	0.	62.	57.	4.
15	5	1986	Y	D9	628	5.9	5.9	5.8	21.	21.	21.					52.	115.	7.4		0.18		0.06		0.1	0.01	41.	41.	8.
15	5	1986	Y	D10	633	5.9	5.9	5.9	21.5	21.5	21.5					47.	77.	7.3		0.02		0.07		0.1	0.01	51.	46.	10.
22	5	1986	N	C2	553	5.6	5.6	5.6	21.5	21.5	21.5	26.	23.	20.	20.	36.	78.	7.										
22	5	1986	N	B1	557	5.7	5.7	5.7	21.5	21.5	21.					18.	64.	7.										
22	5	1986	N	C3	600	5.7	5.7	5.7	21.5	21.5	21.5					46.	122.	7.3										
22	5	1986	N	C5	605	5.4	5.4	5.3	21.5	21.5	21.5					41.	96.	7.2										
22	5	1986	N	C7	609	5.1	5.	4.9	22.	21.5	21.5					32.	109.	7.1										
22	5	1986	N	C8	612	6.2	6.2	6.2	21.5	21.5	21.	25.	24.	20.	20.	46.	102.	7.4										
22	5	1986	N	D1	615	5.6	5.4	5.4	21.5	21.5	21.5					46.	109.	7.4										
22	5	1986	N	D3	618	4.2	4.2	4.2	22.	22.	22.					48.	102.	7.2										
22	5	1986	N	D5	621	4.4	4.4	4.4	21.5	21.5	21.5					46.	109.	7.1										
22	5	1986	N	D6	624	4.7	4.7	4.7	22.	22.	22.	27.	24.	21.	20.	48.	135.	7.3										
22	5	1986	N	D9	627	5.4	5.2	4.7	21.5	21.5	21.5					36.	141.	7.3										
22	5	1986	N	D10	629	5.2	5.2	5.2	21.	21.	21.					33.	83.	7.3										
29	5	1986	Y	C2	600	7.7	7.7	7.7	20.	20.	20.	25.	24.	20.	20.		115.	7.6		0.02		0.09		0.1	0.01	44.	37.	21.
29	5	1986	Y	B1	605	7.8	7.8	7.8	20.	20.	20.						128.	8.1		0.02		0.17		0.15	0.04	27.	25.	28.
29	5	1986	Y	C3	608	7.7	7.7	7.6	20.	20.	20.						115.	8.8		0.04		0.1		0.17	0.01	39.	34.	24.
29	5	1986	Y	C5	612	6.9	6.8	6.5	20.	20.	20.						160.	7.7		0.		0.1		0.12	0.01	49.	42.	15.
29	5	1986	Y	C7	616	5.7	5.6	5.5	20.	20.	20.						186.	7.2		0.		0.04		0.1	0.01	51.	45.	5.
29	5	1986	Y	D1	625	7.6	7.5	7.5	20.	20.	20.						128.	7.5		0.		0.07		0.13	0.01	41.	40.	23.
29	5	1986	Y	D3	629	6.4	6.4	6.4	20.	20.	20.						90.	7.5		0.		0.06		0.11	0.01	48.	41.	0.
29	5	1986	Y	D5	632	4.8	4.8	4.8	20.	20.	20.	26.	24.	20.	18.		103.	7.2		0.		0.07		0.11	0.01	51.	49.	7.
29	5	1986	Y	D6	635	5.3	5.3	5.2	20.	20.	20.	26.	24.	20.	18.		109.	7.3		0.01		0.07		0.14	0.02	48.	48.	6.
29	5	1986	Y	D9	639	6.4	6.4	6.3	20.	20.	20.						141.	7.4		0.		0.08		0.14	0.01	49.	40.	8.
29	5	1986	Y	D10	642	5.8	5.7	5.7	20.	20.	20.					20.	96.	7.1		0.		0.08		0.08	0.01	47.	44.	20.
29	5	1986	Y	C8	650	8.	8.	8.	20.	20.	20.	25.	23.	20.	19.		128.	7.6		0.		0.05		0.18	0.03	42.	41.	14.
5	6	1986	N	B1	555	7.9	7.9	7.9	20.	20.	20.	26.	24.	19.	18.	20.	70.	7.6										
5	6	1986	N	C2	600	8.4	8.3	8.3	21.	21.	21.	26.	24.	19.	18.	22.	109.	7.3										
5	6	1986	N	C3	605	7.2	7.2	7.1	20.5	20.5	20.5					36.	102.	7.9										
5	6	1986	N	C5	610	8.2	8.1	8.	20.	20.	20.					26.	115.	7.6										
5	6	1986	N	C7	614	8.2	8.2	8.2	21.	21.	21.	26.	23.	19.	19.	27.	122.	7.2										
5	6	1986	N	C8	617	9.8	9.8	9.7	20.5	20.5	20.5	26.	23.	19.	19.	32.	115.	9.										
5	6	1986	N	D1	621	7.7	7.7	7.7	20.5	20.5	20.5					42.	135.	7.6										
5	6	1986	N	D3	625	6.6	6.6	6.6	20.5	20.5	20.5					32.	96.	7.3										
5	6	1986	N	D5	629	7.1	7.1	7.	20.5	20.5	20.5	26.	24.	19.	18.	43.	109.	7.2										
5	6	1986	N	D6	631	6.3	6.3	6.2	21.	21.	21.	26.	24.	19.	18.	43.	102.	7.3										
5	6	1986	N	D9	635	8.	8.	8.	20.5	20.5	20.5					33.	96.	7.6										

Table 3. Weekly and Twice Weekly Measurements. Rwanda, Cycle I, Dry Season

DAY	NO.	YEAR	EXTRA DATA?	POND#	DO TIME	DO @ TOP	DO @ MID	DO @ BOTTOM	WATER TEMP @ TOP	WATER TEMP @ MID	WATER TEMP @ BOTTOM	WATER TEMP @ TOP-MAX	WATER TEMP @ BOT-MAX	WATER TEMP @ TOP-MIN	WATER TEMP @ BOT-MIN	ALKA.	HARD.	pH	KJELDAHL N	NH3-N	NO2-N	NO3-N	TOTAL NO2 & NO3-N	TOTAL P	ORTHO PO4-P	SECHII DISK A	SECHII DISK B	CHLOR-OPHYLL A
5	6	1986	N	D10	638	8.3	8.3	8.3	21.	21.	21.					26.	109.	7.5										
12	6	1986	Y	B1	540	7.7	7.6	7.6	19.5	19.5	19.5	26.	25.	19.	20.	21.	83.	8.8		0.03		0.08		0.23	0.02	21.	20.	77.
12	6	1986	Y	C2	544	7.5	7.5	7.5	21.	21.	21.	26.	25.	19.	20.	28.	70.	7.5		0.02		0.09		0.15	0.	36.	36.	52.
12	6	1986	Y	C3	550	5.5	5.5	5.5	20.	20.	20.					31.	77.	7.4		0.07		0.17		0.15	0.01	32.	26.	15.
12	6	1986	Y	C5	555	7.1	7.1	7.1	20.5	20.5	20.5					21.	70.	7.9		0.03		0.09		0.16	0.01	22.	21.	44.
12	6	1986	Y	C7	603	5.9	5.9	5.8	20.5	20.5	20.	27.	23.	19.	20.	29.	64.	7.4		0.02		0.07		0.14	0.	35.	34.	7.
12	6	1986	Y	C8	612	6.8	6.8	6.7	20.5	20.	20.	27.	23.	19.	20.	30.	83.	8.5		0.02		0.09		0.16	0.01	32.	31.	15.
12	6	1986	Y	D1	615	7.8	7.6	7.6	20.	20.	20.					40.	141.	8.		0.02		0.13		0.23	0.01	22.	20.	37.
12	6	1986	Y	D3	619	6.3	6.3	6.3	20.	20.	20.					29.	173.	7.3		0.03		0.12		0.14	0.01	36.	32.	33.
12	6	1986	Y	D5	622	5.1	5.1	5.1	20.	20.	20.	28.	23.	20.	19.	42.	128.	7.2		0.01		0.09		0.14	0.	38.	34.	12.
12	6	1986	Y	D6	625	7.8	7.8	7.8	20.5	20.	20.	28.	23.	20.	19.	38.	103.	7.6		0.01		0.17		0.16	0.01	38.	32.	26.
12	6	1986	Y	D9	627	5.8	5.8	5.8	20.5	20.5	20.5					35.	141.	7.3		0.03		0.08		0.13	0.01	40.	37.	14.
12	6	1986	Y	D10	630	6.9	6.8	6.7	20.	20.	20.					25.	96.	7.3		0.03		0.09		0.16	0.01	34.	32.	37.
19	6	1986	N	B1	540	9.8	9.3	5.4	16.	16.	16.	26.	24.	20.	20.	21.	58.	7.2										
19	6	1986	N	C2	543	8.9	8.7	8.7	17.	17.	17.	26.	24.	20.	20.	26.	51.	7.9										
19	6	1986	N	C3	548	9.3	8.9	4.5	15.5	15.5	15.5					32.	58.	9.1										
19	6	1986	N	C5	552	7.	6.6	2.4	17.	17.	17.					24.	64.	8.										
19	6	1986	N	C7	556	6.1	6.	5.	16.5	16.5	16.5	29.	25.	20.	19.	30.	102.	7.3										
19	6	1986	N	C8	601	7.8	7.5	5.3	16.5	16.5	16.5	29.	25.	20.	19.	31.	186.	8.3										
19	6	1986	N	D1	606	7.4	7.	4.2	16.5	16.5	16.5					39.	70.	7.8										
19	6	1986	N	D3	610	6.1	6.	6.	17.	17.	17.					31.	77.	7.3										
19	6	1986	N	D5	614	5.9	5.7	3.4	17.	17.	17.	26.	23.	20.	19.	45.	83.	7.2										
19	6	1986	N	D6	620	8.4	8.1	6.	17.	17.	17.	26.	23.	20.	19.	42.	96.	7.4										
19	6	1986	N	D9	624	7.2	5.9	5.	17.	17.	17.					34.	90.	7.3										
19	6	1986	N	D10	629	7.8	7.5	4.2	17.	17.	17.					25.	77.	7.4										
26	6	1986	Y	B1	538	7.1	6.2	6.	20.	20.	20.	27.	24.	20.	20.	18.	70.	8.6		0.16		0.23		0.18	0.02	23.	23.	107.
26	6	1986	Y	C2	540	5.8	5.8	5.8	21.	21.	21.	27.	24.	20.	20.	26.	77.	7.5		0.13		0.09		0.16	0.01	43.	31.	35.
26	6	1986	Y	C3	545	6.2	6.2	6.2	21.	21.	21.					31.	77.	8.4		0.1		0.14		0.19	0.02	29.	24.	52.
26	6	1986	Y	C5	548	6.2	5.2	5.2	21.	21.	21.					21.	70.	7.5		0.09		0.32		0.15	0.01	31.	24.	33.
26	6	1986	Y	C7	553	5.3	5.3	5.2	21.	21.	21.	26.	23.	20.	20.	19.	77.	7.2		0.17		0.07		0.12	0.01	34.	33.	7.
26	6	1986	Y	C8	555	5.3	5.3	5.3	21.	21.	21.	26.	23.	20.	20.	29.	77.	7.3		0.28		0.25		0.15	0.02	33.	25.	12.
26	6	1986	Y	D1	600	4.	4.	4.	20.	20.	20.					34.	77.	7.2		0.21		0.13		0.23	0.05	22.	20.	13.
26	6	1986	Y	D3	607	4.5	4.5	4.4	21.	21.	21.					36.	83.	7.1		0.12		0.04		0.12	0.	42.	35.	12.
26	6	1986	Y	D5	610	4.8	4.8	4.8	21.	21.	21.	28.	24.	20.	19.	42.	83.	7.1		0.11		0.11		0.12	0.01	41.	31.	10.
26	6	1986	Y	D6	614	5.9	5.9	5.8	21.	21.	21.	28.	24.	20.	19.	41.	96.	7.2		0.09		0.09		0.14	0.01	41.	34.	28.
26	6	1986	Y	D9	617	5.7	5.7	5.7	21.	21.	21.					31.	83.	7.2		0.07		0.34		0.11	0.01	38.	36.	17.
26	6	1986	Y	D10	620	7.1	7.1	7.1	21.	21.	21.					25.	83.	7.4		0.14		0.07		0.21	0.01	36.	34.	61.
3	7	1986	N	B1	538	8.1	8.1	7.3	18.6	18.6	18.6	27.	24.	19.	19.	18.	115.	9.4										
3	7	1986	N	C2	545	7.9	7.7	7.5	19.8	19.8	19.7	27.	24.	19.	19.	26.	83.	8.2										
3	7	1986	N	C3	548	7.9	7.9	7.8	19.	19.	18.9					30.	83.	9.2										
3	7	1986	N	C5	553	7.7	7.7	7.6	19.	19.	19.					22.	70.	8.8										
3	7	1986	N	C7	555	5.5	5.5	5.5	19.3	19.3	19.3	25.	23.	18.	18.	28.	90.	7.4										
3	7	1986	N	C8	600	7.5	7.5	7.4	19.	19.	19.	25.	23.	18.	18.	29.	77.	8.6										
3	7	1986	N	D1	607	6.7	6.8	6.8	18.3	18.3	18.2					32.	77.	8.2										
3	7	1986	N	D3	610	5.2	5.2	5.2	19.2	19.2	19.2					39.	83.	7.4										

Table 3. Weekly and Twice Weekly Measurements. Rwanda, Cycle I, Dry Season

DAY	MO.	YEAR	EXTRA DATA?	POND#	DO TIME	DO @ TOP	DO @ MID	DO @ BOTTOM	WATER TEMP @ TOP	WATER TEMP @ MID	WATER TEMP @ BOTTOM	WATER TEMP @ TOP-MAX	WATER TEMP @ BOT-MAX	WATER TEMP @ TOP-MIN	WATER TEMP @ BOT-MIN	ALKA.	HARD.	pH	KJELDAHL N	NH3-N	NO2-N	NO3-N	TOTAL NO2 & NO3-N	TOTAL P	ORTHO PO4-P	SECHII DISK A	SECHII DISK B	CHLOR-OPHYLL A
3	7	1986	N	D5	614	7.3	5.2	5.2	19.2	19.2	19.1	26.	23.	19.	17.	44.	109.	7.3										
3	7	1986	N	D6	617	5.	5.1	5.1	19.	19.	19.	26.	23.	19.	17.	34.	102.	7.3										
3	7	1986	N	D9	620	6.1	6.2	6.2	19.	19.	19.					29.	96.	7.3										
3	7	1986	N	D10	625	7.3	7.3	7.4	19.	19.	19.					24.	115.	7.6										
10	7	1986	Y	B1	536	8.	7.7	4.5	19.	19.	18.5	25.	24.	20.	20.	16.	128.	8.6		0.08		0.2		0.19	0.02	31.	30.	104.
10	7	1986	Y	C2	538	8.7	8.6	8.4	20.	20.	20.	25.	24.	20.	20.	26.	77.	8.		0.		0.08		0.16	0.01	20.	20.	52.
10	7	1986	Y	C3	540	7.2	6.8	8.7	19.	19.	19.					26.	83.	9.2		0.02		0.16		0.23	0.03	25.	24.	62.
10	7	1986	Y	C5	544	7.2	6.5	3.7	19.	19.	19.					25.	70.	9.		0.03		0.1		0.21	0.01	20.	20.	119.
10	7	1986	Y	C7	550	5.9	5.9	5.8	20.	20.	20.	25.	23.	20.	19.	25.	96.	7.2		0.		0.05		0.09	0.01	42.	41.	7.
10	7	1986	Y	C8	553	6.9	6.8	6.8	19.	19.	19.	25.	23.	20.	19.	31.	96.	7.6		0.08		0.11		0.19	0.03	31.	30.	11.
10	7	1986	Y	D1	600	5.4	5.2	2.9	19.	19.	18.5					36.	96.	7.3		0.15		0.22		0.17	0.03	22.	21.	15.
10	7	1986	Y	D3	605	5.9	5.8	5.7	20.	20.	20.					20.	90.	7.2		0.07		0.09		0.1	0.01	41.	41.	4.
10	7	1986	Y	D5	609	6.1	6.1	6.1	20.	20.	19.5	26.	24.	20.	18.	47.	109.	7.2		0.		0.11		0.11	0.01	40.	36.	10.
10	7	1986	Y	D6	613	6.5	6.5	6.5	20.	20.	20.	26.	24.	20.	18.	36.	96.	7.3		0.		0.07		0.12	0.01	40.	35.	19.
10	7	1986	Y	D9	617	6.	6.	6.	20.	20.	20.					33.	103.	7.2		0.05		0.07		0.12	0.01	40.	39.	11.
10	7	1986	Y	D10	620	6.	5.7	3.2	19.5	19.5	19.5					29.	96.	7.4		0.12		0.08		0.19	0.01	30.	26.	41.
17	7	1986	N	B1	539	8.6	8.2	3.5	19.	19.	18.5	25.	24.	17.	18.	17.	45.	9.1										
17	7	1986	N	C2	543	9.1	8.6	3.9	19.	19.	19.	25.	24.	17.	18.	27.	77.	8.4										
17	7	1986	N	C3	547	8.5	8.4	7.	19.	19.	19.					32.	77.	9.1										
17	7	1986	N	C5	552	8.3	7.5	3.5	19.	19.	19.					22.	70.	8.5										
17	7	1986	N	C7	557	6.8	6.8	6.6	20.	20.	20.	23.	24.	16.	17.	27.	102.	7.1										
17	7	1986	N	C8	602	11.	11.	11.	19.	19.	19.	23.	24.	16.	17.	28.	58.	9.2										
17	7	1986	N	D1	609	8.7	8.7	8.6	19.	19.	19.					36.	77.	7.6										
17	7	1986	N	D3	613	5.7	5.7	5.7	20.	20.	20.					45.	96.	7.1										
17	7	1986	N	D5	617	6.6	6.6	6.6	19.5	19.5	19.5	26.	24.	19.	17.	45.	83.	7.9										
17	7	1986	N	D6	622	7.3	7.3	7.3	20.	20.	20.	26.	24.	19.	17.	40.	83.	7.2										
17	7	1986	N	D9	627	6.7	9.6	9.6	19.5	19.5	19.5					30.	70.	7.6										
17	7	1986	N	D10	630	5.8	5.7	5.7	19.	19.	19.					34.	83.	7.										
24	7	1986	Y	C2	530	5.2	5.2	5.2	18.	18.	18.	25.	23.	19.	18.	26.	38.	7.5		0.07		0.23		0.22	0.02	26.	24.	45.
24	7	1986	Y	B1	540	6.8	6.7	6.5	17.5	17.5	17.5	25.	23.	19.	18.	19.	51.	8.8		0.08		0.3		0.28	0.04	17.	17.	130.
24	7	1986	Y	C3	545	5.5	5.4	5.4	18.	18.	18.					34.	96.	8.3		0.06		0.04		0.27	0.04	21.	20.	55.
24	7	1986	Y	C5	555	3.	3.	3.	18.	18.	18.					25.	64.	7.6		0.12		0.07		0.27	0.02	21.	19.	67.
24	7	1986	Y	C7	605	5.7	5.7	5.7	18.	18.5	18.5	24.	22.	18.	17.	27.	70.	7.2		0.04		0.03		0.16	0.02	33.	31.	8.
24	7	1986	Y	C8	608	10.	9.9	9.7	18.	18.	18.	24.	22.	18.	17.	24.	51.	9.3		0.03		0.09		0.19	0.02	21.	20.	97.
24	7	1986	Y	D1	615	6.6	6.5	6.7	18.	18.	18.					37.	77.	7.4		0.03		0.07		0.15	0.02	29.	24.	25.
24	7	1986	Y	D3	622	5.	5.	5.	18.	18.5	18.5					48.	103.	7.4		0.02		0.08		0.1	0.01	45.	42.	7.
24	7	1986	Y	D5	630	5.	5.	5.	18.	18.	18.	24.	22.	17.	16.	47.	96.	7.		0.03		0.11		0.12	0.01	39.	36.	8.
24	7	1986	Y	D6	632	5.3	5.3	5.3	18.	18.	18.	24.	22.	17.	16.	45.	77.	7.2		0.03		0.04		0.14	0.02	36.	33.	21.
24	7	1986	Y	D9	642	5.6	5.6	5.5	18.	18.	18.					33.	70.	6.9		0.02		0.03		0.14	0.02	36.	35.	11.
24	7	1986	Y	D10	645	6.8	6.8	6.8	18.	18.	18.					33.	64.	7.2		0.02		0.02		0.12	0.01	37.	34.	30.

Table 3. Weekly and Twice Weekly Measurements. Rwanda, Cycle I, Wet Season

DATE			EXTRA		D.O.	OXYGEN			WATER TEMPERATURE			WATER TEMPERATURE				ALKA	HARD.							SECHII	SECHII	CHLORO-
DAY	MONTH	YEAR	DATA?	POND	SAMPLE TIME	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID deg C	BOT deg C	TOP-MAX deg C	BOT-MAX deg C	TOP-MIN deg C	BOT-MIN deg C	mg/L CaCO3	mg/L CaCO3	pH	NH3-N mg/L	NO2-N mg/L	NO3-N mg/L	TOTAL P mg/L	ORTHO PO4-P mg/L	DISK A cm	DISK B cm	PHYLL A mg/m3
9	10	1986	Y	B1	605	6.8	6.7	6.7	21.	21.	21.					22.	83.	7.9								
9	10	1986	Y	C2	600	8.7	8.7	8.7	21.	21.	21.	28.	26.	21.	21.	20.	51.	9.								
9	10	1986	Y	C3	609	7.7	7.6	7.6	21.	21.	21.					31.	64.	8.8								
9	10	1986	Y	C5	613	5.1	5.1	5.1	21.	21.	21.					24.	70.	7.6								
9	10	1986	Y	C7	616	5.7	5.6	5.6	21.	21.	21.	27.	26.	20.	21.	18.	58.	6.7								
9	10	1986	Y	D1	622	7.1	7.	6.9	21.	21.	21.					28.	70.	8.2								
9	10	1986	Y	D3	626	5.4	5.4	5.4	21.	21.	21.					21.	70.	6.5								
9	10	1986	Y	D5	629	5.7	5.7	5.7	21.	21.	21.					17.	45.	6.3								
9	10	1986	Y	D6	632	5.4	5.4	5.3	21.	21.	21.	26.	24.	19.	19.	27.	58.	6.6								
9	10	1986	Y	D9	640	7.2	7.1	7.	21.	21.	21.					20.	51.	7.3								
17	10	1986	Y	B1	549	6.8	6.7	6.6	21.	21.	21.					22.	51.	8.						38.	37.	33.
17	10	1986	Y	C2	545	5.3	5.3	5.3	21.	21.	21.	28.	26.	20.	20.	22.	58.	6.7						35.	33.	14.
17	10	1986	Y	C3	554	6.7	6.7	6.7	21.	21.	21.					31.	64.	8.						48.	47.	23.
17	10	1986	Y	C5	557	6.5	6.4	5.9	21.	21.	21.					26.	58.	6.9						39.	36.	22.
17	10	1986	Y	C7	601	7.2	7.1	7.	21.5	21.5	21.5	26.	27.	20.	20.	18.	51.	6.7						54.	50.	7.
17	10	1986	Y	D1	609	7.4	7.2	4.9	21.	21.	21.					27.	58.	7.4						41.	38.	14.
17	10	1986	Y	D3	612	6.7	6.2	4.5	21.	21.	21.					23.	64.	6.7						38.	37.	39.
17	10	1986	Y	D5	616	6.7	6.6	5.8	21.	21.	21.					20.	77.	6.6						39.	37.	18.
17	10	1986	Y	D6	620	7.5	7.4	7.	21.	21.	21.	28.	23.	20.	21.	32.	58.	6.8						51.	49.	22.
17	10	1986	Y	D9	624	7.3	7.	3.7	21.	21.	21.					20.	64.	7.7						34.	33.	44.
23	10	1986	Y	B1	545	5.4	5.4	5.4	22.	22.	22.					23.	45.	7.3								
23	10	1986	Y	C2	541	5.8	5.8	5.8	22.5	22.5	22.5	27.	25.	21.	21.	24.	45.	6.7								
23	10	1986	Y	C3	549	5.3	5.3	5.2	22.	22.	22.					32.	51.	7.4								
23	10	1986	Y	C5	552	5.3	5.3	5.3	22.	22.	22.					30.	64.	6.7								
23	10	1986	Y	C7	556	5.8	5.7	5.7	22.5	22.5	22.5	28.	27.	21.	21.	20.	51.	6.6								
23	10	1986	Y	D1	603	5.5	5.3	4.6	22.	22.	22.					29.	58.	6.8								
23	10	1986	Y	D3	606	6.2	6.2	6.1	22.	22.	22.					27.	70.	6.5								
23	10	1986	Y	D5	610	7.3	7.2	7.2	22.	22.	22.					23.	45.	6.4								
23	10	1986	Y	D6	613	6.1	6.	5.4	22.5	22.5	22.5	29.	25.	22.	20.	33.	51.	6.8								
23	10	1986	Y	D9	618	5.3	5.3	5.3	22.	22.	22.					25.	45.	6.3								
30	10	1986	Y	B1	554	5.5	5.3	4.4	22.5	22.5	22.					22.	58.	6.9	0.18		0.56	0.51	0.03	34.	32.	3.
30	10	1986	Y	C2	550	6.5	6.1	3.9	23.	23.	22.5	27.	24.	21.	20.	23.	51.	7.	0.05		0.32	0.1	0.03	44.	43.	4.
30	10	1986	Y	C3	552	6.8	6.6	5.6	22.	22.	22.					33.	58.	7.4	0.05		0.32	0.13	0.02	46.	45.	12.
30	10	1986	Y	C5	602	6.	5.7	2.8	22.5	22.5	22.					29.	64.	6.8	0.06		0.12	0.18	0.03	36.	34.	19.
30	10	1986	Y	C7	606	5.9	5.9	5.6	23.	23.	22.5	27.	25.	20.	21.	18.	51.	6.6	0.04		0.12	0.09	0.02	44.	42.	3.
30	10	1986	Y	D1	613	6.5	6.1	2.	20.	20.	20.					30.	58.	6.9	0.08		0.32	0.11	0.04	32.	31.	11.
30	10	1986	Y	D3	617	6.4	6.1	3.7	23.	23.	22.					28.	64.	6.6	0.05		0.16	0.14	0.03	53.	51.	7.
30	10	1986	Y	D5	620	6.7	6.5	4.1	23.	23.	22.					24.	51.	6.6	0.03		0.09	0.12	0.02	44.	42.	7.
30	10	1986	Y	D6	624	5.5	5.1	0.5	23.	23.	22.	24.	27.	20.	20.	31.	58.	6.6	0.03		0.09	0.16	0.03	40.	38.	11.
30	10	1986	Y	D9	629	6.	5.6	2.7	22.5	22.5	22.					24.	45.	6.7	0.04		0.44	0.31	0.03	37.	35.	11.
6	11	1986	Y	B1	549	6.7	6.3	1.8	22.5	22.5	21.5					22.	45.	8.5								
6	11	1986	Y	C2	545	6.1	5.9	4.7	23.	23.	22.	27.	24.	21.	20.	25.	51.	6.9								
6	11	1986	Y	C3	554	5.7	5.5	3.1	22.5	22.5	22.					33.	64.	7.2								
6	11	1986	Y	C5	558	5.8	5.5	1.1	22.5	22.5	21.5					31.	70.	6.7								
6	11	1986	Y	C7	602	5.6	5.4	4.9	22.5	22.5	22.	26.	25.	21.	19.	19.	58.	6.5								
6	11	1986	Y	D1	611	6.1	6.	4.4	22.	22.	22.					29.	64.	7.1								
6	11	1986	Y	D3	614	6.6	6.4	4.1	23.	23.	22.					30.	70.	6.7								
6	11	1986	Y	D5	618	6.3	6.	1.8	23.	23.	22.					35.	51.	6.7								
6	11	1986	Y	D6	622	5.6	5.4	2.2	23.	23.	22.	25.	26.	22.	21.	31.	64.	6.7								
6	11	1986	Y	D9	631	6.9	6.6	3.4	22.	22.	21.5					23.	51.	7.								
13	11	1986	Y	B1	549	5.4	5.3	5.3	20.5	20.5	20.5					22.	58.	7.						28.	26.	23.
13	11	1986	Y	C2	545	5.9	5.9	5.9	21.	21.	21.	27.	24.	20.	19.	26.	45.	6.9						38.	35.	14.
13	11	1986	Y	C3	553	6.2	6.2	6.1	20.5	20.5	20.5					34.	64.	7.2						31.	29.	30.
13	11	1986	Y	C5	556	6.3	6.2	6.1	21.	21.	21.					34.	70.	7.						35.	33.	37.

Table 3. Weekly and Twice Weekly Measurements. Rwanda, Cycle I, Wet Season

DATE			EXTRA		D.O.	OXYGEN			WATER TEMPERATURE			WATER TEMPERATURE				ALKA	HARD.								
DAY	MONTH	YEAR	DATA?	POND	SAMPLE TIME	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID deg C	BOT deg C	TOP-MAX deg C	BOT-MAX deg C	TOP-MIN deg C	BOT-MIN deg C	mg/L CaCO3	mg/L CaCO3	pH	NH3-N mg/L	NO2-N mg/L	NO3-N mg/L	TOTAL P mg/L	ORTHO PO4-P mg/L	SECHII DISK A cm	SECHII DISK B cm	CHLORO-PHYLL A mg/m3
13	11	1986	Y	C7	559	5.4	5.3	5.2	21.	21.	21.	28.	24.	19.	19.	18.	45.	6.6						40.	38.	7.
13	11	1986	Y	D1	607	7.1	7.1	7.	21.	21.	21.					29.	64.	7.5						27.	25.	30.
13	11	1986	Y	D3	610	4.9	4.8	4.7	21.	21.	21.					32.	38.	6.5						40.	37.	6.
13	11	1986	Y	D5	614	4.4	4.4	4.4	21.	21.	21.					28.	58.	6.5						30.	28.	14.
13	11	1986	Y	D6	619	5.	5.	4.9	21.5	21.5	21.5	28.	24.	18.	19.	34.	64.	6.8						32.	29.	8.
13	11	1986	Y	D9	624	5.4	5.3	5.3	21.	21.	21.					23.	51.	6.8						37.	35.	11.
20	11	1986	Y	B1	544	5.8	5.7	5.7	20.	20.	20.					18.	64.	7.								
20	11	1986	Y	C2	540	5.5	5.4	5.4	21.	21.	21.	26.	24.	20.	19.	22.	51.	6.8								
20	11	1986	Y	C3	549	5.8	5.7	5.7	21.	21.	21.					27.	58.	7.								
20	11	1986	Y	C5	552	5.9	5.8	5.8	21.	21.	21.					28.	58.	6.8								
20	11	1986	Y	C7	556	5.6	5.5	5.4	21.	21.	21.	26.	24.	20.	20.	16.	45.	6.7								
20	11	1986	Y	D1	602	5.8	5.7	5.6	21.	21.	21.					28.	51.	6.9								
20	11	1986	Y	D3	606	4.2	4.2	4.2	21.	21.	21.					25.	51.	6.6								
20	11	1986	Y	D5	610	4.5	4.5	4.4	21.	21.	21.					25.	45.	6.6								
20	11	1986	Y	D6	613	4.4	4.4	4.3	21.	21.	21.	28.	24.	20.	20.	29.	45.	6.7								
20	11	1986	Y	D9	619	5.7	5.7	5.7	21.	21.	21.					22.	38.	6.6								
27	11	1986	Y	B1	544	6.1	6.1	6.1	21.	21.	21.					57.	51.	7.6	0.13		0.2	0.1	0.03	26.	24.	30.
27	11	1986	Y	C2	540	5.5	5.4	5.4	21.5	21.5	21.5	26.	24.	20.	20.	26.	58.	6.8	0.03		0.09	0.1	0.02	46.	44.	14.
27	11	1986	Y	C3	549	8.	8.	7.9	21.	21.	21.					32.	83.	8.5	0.05		0.11	0.12	0.01	31.	30.	72.
27	11	1986	Y	C5	552	5.6	5.5	5.5	21.	21.	21.					33.	70.	6.8	0.05		0.09	0.11	0.01	41.	40.	30.
27	11	1986	Y	C7	556	5.4	5.3	5.3	21.5	21.5	21.5	26.	25.	21.	21.	18.	77.	6.6	0.03		0.07	0.08	0.01	44.	41.	7.
27	11	1986	Y	D1	603	4.5	4.5	4.4	21.	21.	21.					31.	64.	6.8	0.05		0.12	0.15	0.02	23.	20.	14.
27	11	1986	Y	D3	606	4.3	4.2	4.2	21.5	21.5	21.5					35.	83.	6.6	0.03		0.08	0.1	0.01	43.	40.	6.
27	11	1986	Y	D5	610	4.7	4.6	4.6	21.	21.	21.					31.	70.	6.6	0.03		0.14	0.12	0.01	33.	31.	7.
27	11	1986	Y	D6	613	5.	5.	4.9	21.5	21.5	21.5	26.	24.	20.	20.	35.	77.	6.7	0.06		0.06	0.11	0.01	37.	35.	14.
27	11	1986	Y	D9	618	5.3	5.2	5.2	21.5	21.5	21.5					24.	70.	6.7	0.05		0.39	0.12	0.02	33.	31.	26.
4	12	1986	Y	B1	544	6.4	6.2	5.3	21.	21.	21.					20.	77.	7.2								
4	12	1986	Y	C2	540	7.6	7.5	6.2	21.	21.	21.	25.	23.	20.	19.	24.	83.	7.1								
4	12	1986	Y	C3	550	12.	11.8	8.	21.	21.	20.					31.	102.	8.9								
4	12	1986	Y	C5	553	7.2	7.	3.5	21.5	21.5	21.					34.	83.	6.9								
4	12	1986	Y	C7	556	6.2	6.2	5.9	21.5	21.5	21.5	25.	24.	20.	20.	9.	77.	6.6								
4	12	1986	Y	D1	604	8.5	8.1	3.3	21.	21.	20.					30.	83.	7.6								
4	12	1986	Y	D3	607	5.5	5.2	3.3	21.	21.	21.					31.	77.	6.7								
4	12	1986	Y	D5	611	6.4	6.2	2.2	21.	21.	20.5					28.	83.	6.6								
4	12	1986	Y	D6	615	6.	5.8	4.	21.5	21.5	21.	25.	23.	20.	18.	36.	77.	6.9								
4	12	1986	Y	D9	621	8.4	8.1	6.	21.	21.	20.5					22.	64.	7.2								
11	12	1986	Y	B1	549	5.6	5.5	5.5	20.	20.	20.					24.	70.	7.								22.
11	12	1986	Y	C2	545	6.7	6.6	6.6	20.5	20.5	20.5	26.	24.	19.	20.	25.	51.	6.8								26.
11	12	1986	Y	C3	553	5.5	5.5	5.5	20.	20.	20.					26.	64.	8.								107.
11	12	1986	Y	C5	557	5.7	5.5	5.5	20.5	20.5	20.5					30.	70.	6.9								44.
11	12	1986	Y	C7	600	5.2	5.1	5.	20.5	20.5	20.5	26.	23.	20.	20.	17.	51.	6.5								12.
11	12	1986	Y	D1	607	6.2	6.2	6.1	20.	20.	20.					27.	70.	6.8								30.
11	12	1986	Y	D3	610	4.1	4.1	4.1	20.5	20.5	20.5					31.	70.	6.6								11.
11	12	1986	Y	D5	613	5.1	5.1	5.1	20.	20.	20.					30.	51.	6.6								14.
11	12	1986	Y	D6	616	4.9	4.9	4.8	20.5	20.5	20.5	23.	24.	19.	18.	34.	58.	6.7								11.
11	12	1986	Y	D9	621	5.2	5.2	5.1	20.	20.	20.					20.	64.	6.6								29.
18	12	1986	Y	B1	554	8.8	8.5	6.4	20.	20.	20.					24.	77.	8.5								
18	12	1986	Y	C2	550	8.2	8.	7.9	20.	20.	20.	26.	24.	18.	18.	26.	77.	7.1								
18	12	1986	Y	C3	559	4.7	4.5	1.8	20.	20.	19.5					32.	77.	7.8								
18	12	1986	Y	C5	602	7.5	7.	4.3	20.	20.	20.					26.	70.	7.1								
18	12	1986	Y	C7	605	6.1	6.	6.	20.5	20.5	20.5	26.	24.	19.	19.	26.	70.	6.6								
18	12	1986	Y	D1	611	8.4	8.	5.2	19.5	19.5	19.					27.	77.	7.7								
18	12	1986	Y	D3	614	5.7	5.7	5.7	20.	20.	20.					29.	64.	6.9								
18	12	1986	Y	D5	617	5.6	5.5	5.4	20.	20.	20.					31.	58.	6.5								
18	12	1986	Y	D6	620	6.4	6.2	5.7	20.5	20.5	20.5	25.	24.	19.	19.	31.	64.	6.7								

Table 3. Weekly and Twice Weekly Measurements. Rwanda, Cycle I, Wet Season

DATE			EXTRA		D.O.	-----OXYGEN------			WATER TEMPERATURE			-------WATER TEMPERATURE-------				ALKA	HARD.					TOTAL	ORTHO	SECHII	SECHII	CHLORO-
DAY	MONTH	YEAR	DATA?	POND	SAMPLE TIME	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID deg C	BOT deg C	TOP-MAX deg C	BOT-MAX deg C	TOP-MIN deg C	BOT-MIN deg C	mg/L CaCO3	mg/L CaCO3	pH	NH3-N mg/L	NO2-N mg/L	NO3-N mg/L	P mg/L	PO4-P mg/L	DISK A cm	DISK B cm	PHYLL A mg/m3
18	12	1986	Y	D9	624	6.8	6.5	4.2	20.5	20.5	20.					19.	64.	6.8								
23	12	1986	Y	B1	555	7.3	7.	1.9	20.	20.	20.					23.	83.	8.	0.15		0.15	0.12	0.03	31.	30.	14.
23	12	1986	Y	C2	550	8.7	8.2	5.8	21.	21.	20.	24.	23.	19.	20.	22.	51.	7.2	0.09		0.14	0.13	0.02	33.	32.	32.
23	12	1986	Y	C3	600	6.4	6.	5.7	20.5	20.5	20.5					27.	70.	7.5	0.09		0.22	0.17	0.03	37.	34.	10.
23	12	1986	Y	C5	603	5.9	5.7	4.7	21.	21.	21.					25.	70.	7.	0.06		0.12	0.1	0.03	33.	32.	13.
23	12	1986	Y	C7	607	6.	5.9	5.7	21.	21.	21.	26.	24.	19.	20.	17.	51.	6.9	0.09		0.07	1.09	0.02	50.	48.	7.
23	12	1986	Y	D1	614	7.3	7.	2.7	20.	20.	19.					27.	70.	7.8	0.11		0.21	0.14	0.04	22.	21.	53.
23	12	1986	Y	D3	617	5.3	5.2	5.1	21.	21.	21.					30.	64.	6.7	0.03		0.16	0.09	0.02	36.	34.	13.
23	12	1986	Y	D5	620	6.1	5.9	1.9	20.5	20.5	20.					33.	70.	6.6	0.03		0.11	0.11	0.02	34.	32.	20.
23	12	1986	Y	D6	623	7.7	7.4	5.1	21.	21.	20.	29.	25.	20.	19.	29.	70.	6.8	0.03		0.07	0.09	0.02	42.	40.	14.
23	12	1986	Y	D9	627	7.9	7.6	4.4	20.5	20.5	20.					23.	64.	7.	0.09		0.12	0.13	0.02	29.	27.	29.
31	12	1986	Y	B1	600	6.5	6.2	5.	22.	22.	22.					23.	70.	8.4								14.
31	12	1986	Y	C2	555	6.3	6.1	2.4	22.	22.	21.5	25.	24.	18.	20.	22.	64.	7.7								32.
31	12	1986	Y	C3	605	6.3	6.3	6.2	22.	22.	22.					31.	83.	7.9								10.
31	12	1986	Y	C5	608	4.4	4.3	4.3	22.5	22.5	22.5					30.	77.	7.1								13.
31	12	1986	Y	C7	611	4.9	4.7	4.7	22.5	22.5	22.5	27.	26.	20.	19.	19.	58.	6.6								7.
31	12	1986	Y	D1	618	5.	4.3	0.3	21.	21.	20.5					28.	70.	8.1								53.
31	12	1986	Y	D3	621	4.1	4.1	4.	22.5	22.5	22.5					30.	77.	6.8								13.
31	12	1986	Y	D5	625	5.2	5.2	5.2	22.	22.	22.					35.	77.	6.6								20.
31	12	1986	Y	D6	628	6.1	5.9	0.7	22.	22.	22.	29.	24.	19.	21.	30.	83.	6.6								14.
31	12	1986	Y	D9	633	8.2	7.9	5.6	22.	22.	21.5					23.	70.	8.8								29.
8	1	1987	Y	B1	550	7.2	7.	5.3	20.	20.	20.					20.		7.7								34.
8	1	1987	Y	C2	547	7.6	7.5	7.5	20.	20.	20.	24.	23.	19.	19.	21.	58.	7.4								40.
8	1	1987	Y	C3	555	6.3	6.3	6.2	20.	20.	20.					33.	77.	7.3								15.
8	1	1987	Y	C5	558	5.6	5.5	5.4	20.	20.	20.					28.	64.	6.8								7.
8	1	1987	Y	C7	601	5.5	5.4	5.3	20.5	20.5	20.5	25.	23.	20.	20.	18.	64.	6.6								4.
8	1	1987	Y	D1	609	4.1	4.1	4.1	19.	19.	19.					28.	58.	7.2								22.
8	1	1987	Y	D3	612	4.5	4.5	4.4	20.	20.	20.					29.	83.	6.7								7.
8	1	1987	Y	D5	618	5.	4.9	4.9	20.5	20.5	20.5					31.	83.	6.7								18.
8	1	1987	Y	D6	621	6.4	6.4	6.4	20.	20.	20.	24.	24.	20.	18.	32.	70.	6.8								19.
8	1	1987	Y	D9	625	5.	5.	5.	20.	20.	20.					25.	45.	7.1								30.
15	1	1987	Y	B1	555	6.4	6.	0.9	21.	21.	21.					22.	58.	8.2								
15	1	1987	Y	C2	552	5.4	5.1	2.3	21.	21.	21.	24.	23.	19.	19.	23.	58.	7.								
15	1	1987	Y	C3	600	5.4	5.4	5.1	21.5	21.5	21.5					37.	77.	7.4								
15	1	1987	Y	C5	603	4.8	4.8	4.7	22.	22.	22.					31.	70.	6.8								
15	1	1987	Y	C7	606	5.1	5.1	5.1	22.	22.	22.	26.	24.	19.	20.	20.	51.	6.5								
15	1	1987	Y	D1	613	4.1	4.1	4.	21.	21.	21.					33.	64.	7.								
15	1	1987	Y	D3	616	4.9	4.9	4.9	22.	22.	22.					28.	83.	6.6								
15	1	1987	Y	D5	619	4.	4.	3.9	22.	22.	22.					23.	64.	6.5								
15	1	1987	Y	D6	622	3.7	3.7	3.7	22.	22.	22.	27.	23.	22.	19.	33.	83.	6.5								
15	1	1987	Y	D9	625	4.6	4.5	4.4	21.5	21.5	21.5					24.	51.	6.6								
22	1	1987	Y	B1	558	5.9	5.7	2.1	21.5	21.5	21.5					22.	38.	7.	0.16		0.25	0.17	0.03	25.	23.	22.
22	1	1987	Y	C2	555	4.4	4.3	4.3	21.5	21.5	21.5	23.	23.	19.	19.	25.	38.	6.9	0.28		0.22	0.15	0.03	45.	43.	33.
22	1	1987	Y	C3	604	6.2	5.9	4.6	21.5	21.5	21.5					35.	45.	7.5	0.16		0.15	0.16	0.03	32.	37.	14.
22	1	1987	Y	C5	607	5.8	5.8	5.8	21.5	21.5	21.5					32.	51.	6.6	0.17		0.12	0.11	0.02	40.	41.	7.
22	1	1987	Y	C7	610	6.1	6.	6.	22.	22.	22.	25.	25.	19.	19.	21.	32.	6.4	0.17		0.14	0.11	0.03	41.	40.	4.
22	1	1987	Y	D1	617	5.4	5.4	5.3	21.	21.	21.					31.	38.	6.9	0.16		0.25	0.17	0.05	31.	21.	17.
22	1	1987	Y	D3	620	5.	5.	5.	21.	21.	21.					33.	38.	6.6	0.16		0.11	0.11	0.02	40.	41.	18.
22	1	1987	Y	D5	623	4.8	4.8	4.7	21.	21.	21.					34.	38.	6.6	0.16		0.12	0.12	0.03	35.	41.	4.
22	1	1987	Y	D6	626	5.1	5.	4.9	21.5	21.5	21.5	26.	24.	20.	19.	32.	45.	6.5	0.16		0.14	0.11	0.03	36.	35.	7.
22	1	1987	Y	D9	629	5.9	5.9	5.9	21.	21.	21.					25.	45.	6.7	0.19		0.15	0.16	0.03	32.	30.	22.
29	1	1987	Y	B1	550	3.	3.	2.9	20.	20.	20.					20.	38.	7.2								
29	1	1987	Y	C2	553	4.4	4.4	4.4	20.5	20.5	20.5	25.	24.	19.	19.	24.	38.	7.4								
29	1	1987	Y	C3	557	5.1	5.	4.9	20.	20.	20.					36.	45.	7.5								
29	1	1987	Y	C5	600	4.8	4.8	4.8	21.	21.	21.					32.	51.	7.1								

Table 3. Weekly and Twice Weekly Measurements. Rwanda, Cycle I, Wet Season

DATE			EXTRA		D.O.	OXYGEN			WATER TEMPERATURE			WATER TEMPERATURE				ALKA	HARD.					TOTAL	ORTHO	SECHII	SECHII	CHLORO-
DAY	MONTH	YEAR	DATA?	POND	SAMPLE TIME	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID deg C	BOT deg C	TOP-MAX deg C	BOT-MAX deg C	TOP-MIN deg C	BOT-MIN deg C	mg/L CaCO3	mg/L CaCO3	pH	NH3-N mg/L	NO2-N mg/L	NO3-N mg/L	P mg/L	PO4-P mg/L	DISK A cm	DISK B cm	PHYLL A mg/m3
29	1	1987	Y	C7	603	5.8	5.8	5.7	21.	21.	21.	26.	26.	20.	20.	20.	32.	7.1								
29	1	1987	Y	D1	610	4.5	4.4	4.4	20.	20.	20.					29.	38.	7.4								
29	1	1987	Y	D3	613	4.5	4.4	4.4	21.	21.	21.					27.	38.	7.								
29	1	1987	Y	D5	617	4.1	4.	4.	21.	21.	21.					30.	38.	7.1								
29	1	1987	Y	D6	619	4.2	4.1	3.9	21.	21.	21.	28.	24.	21.	19.	23.	45.	7.1								
29	1	1987	Y	D9	622	5.1	5.1	5.1	20.5	20.5	20.5					25.	45.	7.2								
5	2	1987	Y	B1	550	5.3	5.	3.1	22.	22.	21.					25.	45.	6.6						24.	21.	18.
5	2	1987	Y	C2	553	4.6	4.5	4.5	22.	22.	22.	27.	25.	19.	19.	27.	45.	6.5						34.	33.	37.
5	2	1987	Y	C3	558	8.7	8.1	3.	21.	21.	21.					36.	58.	8.6						31.	30.	25.
5	2	1987	Y	C5	601	5.4	5.2	2.6	22.	22.	22.					36.	45.	6.6						33.	31.	11.
5	2	1987	Y	C7	604	6.	6.	5.8	22.	22.	22.	28.	29.	20.	21.	23.	32.	6.5						47.	46.	7.
5	2	1987	Y	D1	611	4.9	4.9	4.8	21.	21.	21.					31.	45.	7.1						21.	20.	22.
5	2	1987	Y	D3	614	4.8	4.7	4.7	22.	22.	22.					33.	45.	6.8						32.	21.	8.
5	2	1987	Y	D5	617	4.9	4.9	4.9	22.	22.	22.					33.	45.	6.6						31.	30.	8.
5	2	1987	Y	D6	620	4.8	4.5	3.	22.	22.	22.	30.	26.	20.	19.	33.	45.	6.7						33.	31.	8.
5	2	1987	Y	D9	625	5.5	5.	3.	21.5	21.5	21.5					25.	51.	6.7						31.	30.	22.
12	2	1987	Y	B1	555	4.5	4.3	2.5	23.	23.	22.5					25.	38.	6.8								
12	2	1987	Y	C2	558	3.8	3.7	3.7	22.5	22.5	22.5	27.	24.	21.	20.	27.	45.	6.8								
12	2	1987	Y	C3	601	6.3	5.7	4.9	22.5	22.5	21.5					29.	58.	7.								
12	2	1987	Y	C5	605	5.1	5.	4.7	23.	23.	23.					34.	58.	6.8								
12	2	1987	Y	C7	608	6.4	6.3	5.4	23.	23.	23.	28.	26.	22.	21.	22.	51.	6.6								
12	2	1987	Y	D1	614	6.4	4.9	1.8	22.5	22.5	21.					31.	58.	7.1								
12	2	1987	Y	D3	618	5.1	4.9	4.2	23.	23.	22.5					30.	70.	6.7								
12	2	1987	Y	D5	621	5.1	5.	2.4	23.	23.	22.5					32.	58.	6.8								
12	2	1987	Y	D6	624	5.1	4.7	2.1	23.	23.	22.5	30.	25.	23.	20.	32.	58.	6.8								
12	2	1987	Y	D9	628	5.6	5.2	2.9	22.5	22.5	22.					28.	77.	6.8								
19	2	1987	Y	B1	550	3.6	3.5	3.5	22.	22.	22.					20.	51.	6.7	0.06	0.23	0.2	0.03	24.	23.	40.
19	2	1987	Y	C2	553	5.	4.9	4.5	21.5	21.5	21.5	26.	25.	20.	19.	27.	77.	6.6	0.06	0.14	0.29	0.04	33.	32.	33.
19	2	1987	Y	C3	557	6.6	6.4	5.3	22.	22.	21.5					35.	64.	8.5	0.05	0.12	0.23	0.04	31.	29.	22.
19	2	1987	Y	C5	600	3.8	3.7	3.7	22.5	22.5	22.5					40.	58.	6.7	0.03	0.12	0.18	0.03	34.	33.	14.
19	2	1987	Y	C7	603	5.7	5.6	5.6	23.	23.	23.	28.	26.	21.	21.	23.	58.	6.7	0.03	0.09	0.15	0.03	44.	42.	19.
19	2	1987	Y	D1	609	5.9	5.7	2.4	21.5	21.5	21.					28.	33.	7.	0.08	0.25	0.25	0.04	21.	19.	62.
19	2	1987	Y	D3	612	4.	4.	4.	22.	22.	22.					34.	70.	6.8	0.05	0.11	0.16	0.02	33.	32.	15.
19	2	1987	Y	D5	615	4.	3.9	3.9	22.	22.	22.					34.	64.	6.6	0.05	0.12	0.18	0.03	33.	30.	14.
19	2	1987	Y	D6	618	4.	4.	4.	22.5	22.5	22.5	29.	25.	20.	19.	34.	51.	6.6	0.02	0.25	0.18	0.03	32.	30.	18.
19	2	1987	Y	D9	622	5.7	5.6	5.4	22.	22.	22.					27.	58.	6.7	0.17	0.09	0.2	0.02	30.	28.	59.
25	2	1987	Y	B1	552	4.4	4.4	4.3	22.	22.	22.					22.	58.	6.9	0.16	0.16	0.25	0.02	24.	21.	48.
25	2	1987	Y	C2	555	4.6	4.5	4.5	23.	23.	23.	25.	25.	20.	19.	23.	45.	6.9	0.1	0.11	0.19	0.01	34.	33.	25.
25	2	1987	Y	C3	559	6.3	6.	4.3	22.	22.	22.					30.	58.	8.2	0.08	0.12	0.26	0.1	31.	30.	26.
25	2	1987	Y	C5	603	3.7	3.5	3.4	22.5	22.5	22.5					39.	58.	6.7	0.09	0.13	0.18	0.01	33.	31.	14.
25	2	1987	Y	C7	606	5.8	5.7	5.6	23.	23.	23.	28.	29.	21.	23.	29.	64.	6.7	0.08	0.12	0.11	0.01	47.	46.	22.
25	2	1987	Y	D1	613	5.4	5.	1.7	21.5	21.5	21.						58.	7.8	0.13	0.21	0.28	0.03	21.	20.	107.
25	2	1987	Y	D3	616	3.8	3.8	3.8	22.5	22.5	22.5					37.	64.	6.7	0.06	0.09	0.15	0.01	32.	30.	14.
25	2	1987	Y	D5	619	3.9	3.9	3.8	22.	22.	22.					33.	64.	6.6	0.08	0.09	0.18	0.01	31.	30.	17.
25	2	1987	Y	D6	623	4.	3.9	3.9	22.	22.	22.	26.	27.	18.	19.	30.	58.	6.7	0.09	0.09	0.19	0.02	33.	31.	14.
25	2	1987	Y	D9	626	4.3	4.2	4.2	22.	22.	22.					24.	58.	7.	0.08	0.12	0.28	0.02	31.	30.	22.

Table 4. Diurnal Measurements. Rwanda, Cycle I, Dry Season

----DATE------ D.O.					------OXYGEN-----			WATER TEMPERATURE			
					TOP	MID	BOT	TOP	MID.	BOT.	
DAY	MONTH	YEAR	TIME	POND	mg/L	mg/L	mg/L	deg C	deg C	deg C	pH
21	3	1986	618	B1	6.5	6.4	6.4	20.1	20.1	20.	7.7
21	3	1986	621	C2	6.9	6.8	6.8	19.8	19.8	19.8	7.2
21	3	1986	623	C3	6.1	6.	6.	20.1	20.1	20.	7.9
21	3	1986	625	C5	6.2	6.	6.	20.2	20.2	20.1	7.5
21	3	1986	628	C7	4.9	4.5	4.5	20.2	20.2	20.1	7.3
21	3	1986	630	C8	5.6	5.5	5.5	20.	20.	20.	7.4
21	3	1986	632	D1	5.5	5.2	5.1	19.2	19.2	19.2	7.4
21	3	1986	635	D3	5.5	5.4	5.4	20.2	20.2	20.2	7.3
21	3	1986	637	D5	4.7	4.7	4.7	20.4	20.3	20.2	7.3
21	3	1986	640	D6	4.8	4.8	4.8	20.2	20.2	20.3	7.3
21	3	1986	645	D9	4.9	4.7	4.7	19.8	19.8	19.8	7.3
21	3	1986	650	D10	4.8	4.8	4.8	20.1	20.1	20.2	7.4
21	3	1986	943	B1	6.8	6.6	6.5	20.4	20.3	20.2	8.1
21	3	1986	946	C2	6.4	6.1	5.8	20.	19.9	19.8	7.7
21	3	1986	951	C3	6.1	6.1	6.	20.4	20.3	20.2	8.
21	3	1986	955	C5	6.4	6.	5.7	20.8	20.7	20.6	7.7
21	3	1986	959	C7	5.	5.	5.	20.8	20.7	20.5	7.6
21	3	1986	1006	C8	5.4	5.4	5.4	20.4	20.3	20.3	7.6
21	3	1986	1010	D1	4.8	4.6	4.5	20.2	20.	19.9	7.6
21	3	1986	1014	D3	5.4	5.2	5.	20.8	20.7	20.6	7.5
21	3	1986	1017	D5	4.7	4.5	4.4	21.	20.9	20.8	7.4
21	3	1986	1019	D6	5.	4.9	4.8	20.9	20.7	20.6	7.5
21	3	1986	1025	D9	4.8	4.6	4.5	20.9	20.8	20.7	7.6
21	3	1986	1028	D10	4.6	4.5	4.5	21.1	20.9	20.8	7.5
21	3	1986	1311	B1	8.6	7.9	7.5	22.	21.1	20.8	8.6
21	3	1986	1317	C2	7.5	7.	6.4	21.2	20.8	20.4	7.7
21	3	1986	1327	C3	6.4	6.4	6.4	21.7	21.4	21.	8.3
21	3	1986	1333	C5	8.4	7.9	7.4	23.1	21.5	21.	7.6
21	3	1986	1340	C7	5.9	5.5	5.4	22.4	21.5	21.	7.4
21	3	1986	1347	C8	6.3	5.8	5.2	22.3	21.6	21.	7.9
21	3	1986	1353	D1	5.1	4.9	4.4	21.5	21.4	21.	7.8
21	3	1986	1359	D3	6.6	6.5	5.8	21.8	21.3	21.	7.6
21	3	1986	1404	D5	5.4	4.8	4.7	22.8	21.8	21.2	7.4
21	3	1986	1407	D6	5.7	5.4	5.3	22.6	21.7	21.3	7.7
21	3	1986	1412	D9	5.	4.8	4.7	21.8	21.4	20.9	7.8
21	3	1986	1417	D10	5.1	5.	5.	22.	21.5	21.3	7.4
21	3	1986	1722	B1	8.1	7.2	6.2	22.5	21.1	20.2	8.8
21	3	1986	1725	C2	8.1	6.7	6.2	23.5	21.5	20.8	7.9
21	3	1986	1735	C3	6.9	6.7	6.6	22.8	21.9	21.1	8.6
21	3	1986	1740	C5	8.8	7.4	5.7	23.6	22.	21.1	7.8
21	3	1986	1742	C7	6.5	5.8	5.	24.	22.	21.2	7.4
21	3	1986	1745	C8	6.8	6.2	5.7	20.5	21.3	20.7	8.3
21	3	1986	1748	D1	5.6	4.5	4.3	20.	20.5	20.	7.7
21	3	1986	1750	D3	6.9	5.2	5.1	22.2	21.2	20.9	7.6
21	3	1986	1755	D5	5.7	5.2	4.8	21.1	21.9	22.4	7.3
21	3	1986	1757	D6	6.2	5.7	5.6	21.1	21.8	22.3	7.5
21	3	1986	1800	D9	5.4	4.7	4.5	20.2	21.8	22.	7.7
21	3	1986	1802	D10	5.5	5.2	4.9	22.2	21.9	22.8	7.4
21	3	1986	2200	B1	7.7	6.8	5.1	22.1	21.1	20.2	8.5
21	3	1986	2205	C2	7.	5.9	4.9	22.2	21.2	20.5	7.7
21	3	1986	2210	C3	6.7	6.3	6.3	22.5	22.	21.	8.4
21	3	1986	2214	C5	7.9	5.5	5.3	22.5	21.6	21.1	7.9
21	3	1986	2219	C7	5.9	5.6	5.3	22.9	22.	21.	7.5

Table 4. Diurnal Measurements. Rwanda, Cycle I, Dry Season

----DATE------			D.O.		------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
21	3	1986	2225	C8	5.8	5.8	5.6	21.3	22.	20.9	8.3
21	3	1986	2230	D1	4.1	3.6	3.8	21.1	20.2	20.	7.8
21	3	1986	2233	D3	6.1	5.1	4.5	22.5	21.1	20.8	7.6
21	3	1986	2235	D5	5.6	4.6	4.2	22.5	21.9	21.	7.4
21	3	1986	2238	D6	6.	5.5	5.1	22.4	21.8	21.	7.6
21	3	1986	2242	D9	5.3	4.7	4.3	22.	20.8	20.2	7.7
21	3	1986	2245	D10	5.5	4.7	4.6	22.	22.	21.5	7.5
22	3	1986	130	B1	6.2	6.2	5.	21.5	21.2	20.8	8.4
22	3	1986	135	C2	6.7	5.4	3.4	22.	20.8	20.8	7.6
22	3	1986	140	C3	6.3	5.9	5.3	21.8	21.5	21.	8.3
22	3	1986	145	C5	7.5	7.1	4.5	22.1	21.6	21.	7.8
22	3	1986	150	C7	5.8	5.5	5.1	22.	21.8	21.1	7.4
22	3	1986	158	C8	6.8	6.5	5.5	21.5	21.5	21.	8.1
22	3	1986	200	D1	5.6	5.4	3.8	21.8	20.5	20.	7.6
22	3	1986	203	D3	6.4	4.6	4.2	21.5	21.2	21.	7.5
22	3	1986	205	D5	5.	4.4	4.2	21.8	21.8	21.	7.3
22	3	1986	210	D6	5.7	5.5	4.9	21.6	21.5	21.	7.5
22	3	1986	215	D9	4.9	4.4	4.2	21.1	20.5	20.1	7.5
22	3	1986	217	D10	5.3	5.2	5.2	21.6	21.6	21.6	7.3
22	3	1986	535	B1	7.	7.	6.8	20.7	20.7	20.7	8.3
22	3	1986	530	C2	7.2	6.9	4.9	20.9	20.9	20.9	7.9
22	3	1986	540	C3	6.8	6.1	6.1	21.	21.	21.	8.2
22	3	1986	545	C5	6.4	6.1	3.9	21.	21.	21.	7.6
22	3	1986	550	C7	5.7	5.5	4.7	21.	21.	21.	7.4
22	3	1986	555	C8	6.4	6.4	6.4	20.8	20.8	20.8	7.9
22	3	1986	600	D1	4.2	2.5	2.4	20.	20.	20.	7.8
22	3	1986	602	D3	6.6	6.1	4.1	20.9	20.9	20.8	7.5
22	3	1986	605	D5	5.1	5.	5.	21.	21.	21.	7.2
22	3	1986	607	D6	5.4	5.3	5.1	20.9	21.	21.	7.5
22	3	1986	610	D9	6.	5.5	3.9	20.5	20.5	20.5	7.6
22	3	1986	615	D10	4.8	4.8	4.8	21.	21.	21.	7.2
17	4	1986	600	B1	6.1	6.	6.	21.	20.9	20.9	7.1
17	4	1986	603	C2	6.	5.9	5.9	21.2	21.2	21.1	7.3
17	4	1986	606	C3	6.3	6.2	6.1	21.	21.1	21.1	7.7
17	4	1986	610	C5	5.9	5.9	5.9	21.5	21.3	21.2	7.4
17	4	1986	614	C7	6.3	6.3	6.2	21.3	21.3	21.2	7.2
17	4	1986	617	C8	6.2	6.2	6.2	21.	21.	21.	7.7
17	4	1986	620	D1	6.2	6.2	6.2	21.	21.	21.	7.5
17	4	1986	622	D3	4.9	4.9	4.9	21.5	21.5	21.5	7.2
17	4	1986	625	D5	5.8	5.8	5.8	21.3	21.2	21.2	7.1
17	4	1986	628	D6	5.3	5.3	5.3	21.1	21.1	21.1	7.3
17	4	1986	632	D9	5.7	5.7	5.7	21.3	21.2	21.2	7.5
17	4	1986	635	D10	6.	5.9	5.9	21.8	21.8	21.8	7.4
17	4	1986	930	B1	6.1	5.5	5.5	22.1	21.2	21.	7.2
17	4	1986	935	C2	5.9	5.4	5.3	22.5	22.	21.4	7.2
17	4	1986	945	C3	6.5	6.4	6.3	22.	21.2	21.8	7.5
17	4	1986	950	C5	5.9	5.4	4.8	22.8	22.	21.9	7.2
17	4	1986	954	C7	6.4	6.1	6.	22.6	21.9	21.8	7.
17	4	1986	956	C8	6.2	5.9	5.6	22.	21.3	21.2	7.4
17	4	1986	1000	D1	5.9	5.2	4.6	21.8	21.2	21.	7.4
17	4	1986	1003	D3	5.2	4.7	4.5	22.2	22.1	21.9	7.1
17	4	1986	1006	D5	6.1	5.7	5.3	22.2	22.	21.8	7.
17	4	1986	1009	D6	5.1	5.	4.9	22.2	21.9	21.6	7.2

Table 4. Diurnal Measurements. Rwanda, Cycle I, Dry Season

----DATE------ D.O.					------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
17	4	1986	1012	D9	5.8	5.5	5.2	22.4	22.	21.8	7.3
17	4	1986	1015	D10	6.2	6.1	6.	22.8	22.1	22.	7.2
17	4	1986	1343	B1	7.3	6.9	5.7	24.5	23.2	21.7	7.3
17	4	1986	1339	C2	6.7	6.6	5.5	24.	22.4	22.	7.4
17	4	1986	1346	C3	6.9	6.8	6.5	24.9	23.2	22.3	7.8
17	4	1986	1350	C5	8.7	6.5	5.2	25.1	23.3	22.3	7.5
17	4	1986	1355	C7	7.4	7.2	6.6	24.5	23.4	22.4	7.3
17	4	1986	1359	C8	7.2	6.4	5.9	24.5	22.9	22.	7.6
17	4	1986	1404	D1	6.4	5.8	4.7	24.1	22.6	21.4	7.6
17	4	1986	1409	D3	6.4	5.4	5.2	24.5	23.5	22.8	7.3
17	4	1986	1413	D5	6.8	6.5	5.6	25.1	23.	22.2	7.1
17	4	1986	1416	D6	5.7	5.5	5.5	24.9	23.	22.5	7.2
17	4	1986	1422	D9	6.9	6.5	5.8	25.	23.5	22.4	7.5
17	4	1986	1425	D10	7.1	6.9	6.7	25.6	23.8	23.	7.4
17	4	1986	1807	B1	6.9	6.7	5.1	23.8	23.7	22.2	7.4
17	4	1986	1800	C2	6.3	6.3	5.2	23.2	22.	22.	7.5
17	4	1986	1810	C3	7.	6.1	5.5	23.8	23.2	21.6	8.
17	4	1986	1820	C5	7.1	6.5	5.5	24.	23.	22.2	7.7
17	4	1986	1825	C7	7.	6.8	6.2	24.	23.3	22.3	7.4
17	4	1986	1827	C8	6.8	6.2	5.9	24.	23.	21.9	7.8
17	4	1986	1828	D1	6.2	5.5	4.9	24.	22.1	21.1	7.6
17	4	1986	1830	D3	6.	5.5	5.1	24.	23.	22.5	7.4
17	4	1986	1832	D5	6.2	6.1	5.5	23.9	23.	22.1	7.2
17	4	1986	1835	D6	5.5	5.3	5.	24.	23.	22.2	7.5
17	4	1986	1837	D9	6.6	6.3	4.9	24.	23.	22.	7.7
17	4	1986	1840	D10	6.8	6.7	6.3	24.	23.2	22.9	7.6
17	4	1986	2140	B1	7.	6.6	5.8	23.	23.	23.5	7.3
17	4	1986	2135	C2	6.9	6.6	5.	23.1	21.9	22.9	7.4
17	4	1986	2142	C3	6.8	6.7	6.4	23.	23.	22.1	7.8
17	4	1986	2145	C5	6.8	6.5	5.3	23.	22.6	21.8	7.4
17	4	1986	2150	C7	6.8	6.5	5.8	23.	23.	22.2	7.2
17	4	1986	2155	C8	6.6	6.	5.4	23.	22.8	22.	7.6
17	4	1986	2157	D1	6.	5.5	4.4	22.9	22.	21.1	7.5
17	4	1986	2200	D3	5.9	5.7	4.5	23.	23.	22.2	7.2
17	4	1986	2207	D5	6.	5.7	5.2	23.	23.	22.	7.1
17	4	1986	2210	D6	5.2	5.	4.7	23.	23.	22.1	7.3
17	4	1986	2213	D9	6.2	6.	4.2	23.	23.	22.	7.5
17	4	1986	2220	D10	6.4	6.3	5.5	23.	23.	21.	7.4
18	4	1986	135	B1	6.6	6.4	5.2	22.	22.	21.5	7.2
18	4	1986	130	C2	6.3	6.2	4.2	22.	22.	22.	7.3
18	4	1986	140	C3	6.5	6.4	6.4	22.	22.	22.	7.6
18	4	1986	145	C5	6.2	6.2	6.2	22.	22.	22.	7.5
18	4	1986	150	C7	6.4	6.3	5.6	22.	22.	22.	7.3
18	4	1986	154	C8	6.2	6.	4.3	22.	22.	21.9	7.6
18	4	1986	200	D1	5.8	5.6	4.	21.5	21.5	21.	7.5
18	4	1986	205	D3	5.4	5.4	5.4	22.	22.	22.	7.2
18	4	1986	215	D5	5.2	5.3	5.3	22.	22.	2.	7.1
18	4	1986	219	D6	5.	5.	5.	22.	22.	22.	7.3
18	4	1986	222	D9	6.4	6.2	6.	22.	22.	22.	7.5
18	4	1986	225	D10	6.	6.	6.	22.1	22.1	22.1	7.4
18	4	1986	535	B1	5.6	5.6	5.6	21.	21.	21.	7.2
18	4	1986	530	C2	5.4	5.4	5.4	21.	21.	21.1	7.3
18	4	1986	540	C3	7.8	7.8	5.9	21.2	21.1	21.1	7.7

Table 4. Diurnal Measurements. Rwanda, Cycle I, Dry Season

----DATE------ D.O.					------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
18	4	1986	545	C5	5.3	5.3	5.3	21.3	21.2	21.1	7.4
18	4	1986	547	C7	5.7	5.7	5.7	21.5	21.5	21.1	7.2
18	4	1986	550	C8	5.7	5.7	5.7	21.	21.	21.	7.6
18	4	1986	553	D1	5.	5.	4.9	20.9	20.9	20.9	7.5
18	4	1986	557	D3	4.5	4.5	4.5	21.6	21.6	21.5	7.2
18	4	1986	600	D5	4.9	4.9	4.9	21.3	21.2	21.2	7.1
18	4	1986	605	D6	4.4	4.4	4.4	21.5	21.4	21.4	7.3
18	4	1986	607	D9	5.6	5.6	5.6	21.	21.1	21.1	7.5
18	4	1986	610	D10	5.4	5.4	5.4	21.6	21.5	21.2	7.4
15	5	1986	545	B1	5.6	5.6	5.6	21.5	21.5	21.5	7.1
15	5	1986	550	C2	6.4	6.3	6.3	21.	21.	21.	7.1
15	5	1986	554	C3	6.5	6.5	6.5	17.	17.	17.	7.5
15	5	1986	600	C5	5.5	5.5	5.5	17.	17.	17.	7.3
15	5	1986	604	C7	6.1	6.	5.9	17.5	17.	16.5	7.
15	5	1986	608	C8	6.9	6.8	6.8	17.	17.	17.	7.6
15	5	1986	612	D1	6.1	6.1	6.	16.	16.	16.	7.5
15	5	1986	615	D3	4.8	4.8	4.6	16.	16.	16.	7.1
15	5	1986	617	D5	5.2	5.2	5.2	21.5	21.5	21.5	7.2
15	5	1986	623	D6	5.5	5.5	5.5	22.5	22.	22.	7.3
15	5	1986	628	D9	5.9	5.9	5.8	21.	21.	21.	7.4
15	5	1986	633	D10	5.9	5.9	5.9	21.5	21.5	21.5	7.3
15	5	1986	940	B1	5.1	4.9	4.6	22.	21.5	21.5	7.3
15	5	1986	945	C2	6.3	5.4	4.9	22.	21.	21.	7.1
15	5	1986	950	C3	6.3	6.3	5.8	22.5	22.	22.	7.5
15	5	1986	956	C5	5.4	4.7	4.	22.5	22.	22.	7.4
15	5	1986	1000	C7	5.7	5.5	5.2	22.5	22.	22.	7.2
15	5	1986	1005	C8	6.6	6.3	5.7	23.	22.	22.	7.6
15	5	1986	1010	D1	5.8	5.5	4.9	19.	18.5	18.	7.6
15	5	1986	1014	D3	4.8	4.3	4.1	22.5	22.	22.	7.4
15	5	1986	1017	D5	5.1	4.7	4.3	22.	22.	22.	7.3
15	5	1986	1021	D6	5.2	5.	4.9	22.5	22.	22.	7.4
15	5	1986	1027	D9	5.6	5.3	4.7	22.	22.	21.5	7.4
15	5	1986	1031	D10	5.8	5.3	5.	22.5	22.	22.	7.4
15	5	1986	1331	B1	6.3	5.7	4.2	24.	22.	22.	7.4
15	5	1986	1335	C2	7.	6.4	5.2	23.5	22.	21.5	7.3
15	5	1986	1340	C3	7.3	7.	6.6	24.5	22.5	22.5	7.8
15	5	1986	1345	C5	6.6	6.	4.7	25.	23.	22.5	7.5
15	5	1986	1350	C7	6.5	6.4	5.8	25.	23.5	22.5	7.3
15	5	1986	1354	C8	7.6	7.1	6.5	25.	22.5	22.	7.8
15	5	1986	1358	D1	6.6	5.7	5.	25.	22.5	22.	7.5
15	5	1986	1403	D3	5.9	4.8	4.7	25.	23.	22.5	7.2
15	5	1986	1407	D5	6.1	5.4	5.1	25.	23.	22.5	7.3
15	5	1986	1411	D6	5.7	5.6	5.3	25.	23.	22.5	7.4
15	5	1986	1417	D9	6.5	5.8	5.1	25.5	22.5	22.	7.6
15	5	1986	1421	D10	6.9	5.7	5.5	25.	23.	22.5	7.5
15	5	1986	1745	B1	7.5	7.6	7.3	24.5	23.	22.	7.3
15	5	1986	1748	C2	7.6	4.5	4.5	22.5	22.5	22.	7.2
15	5	1986	1800	C3	7.4	6.8	4.5	22.5	22.5	22.	7.8
15	5	1986	1803	C5	6.8	6.5	4.9	24.5	23.	22.	7.5
15	5	1986	1805	C7	7.5	6.9	6.	24.	23.	22.	7.2
15	5	1986	1807	C8	7.5	6.5	6.8	24.	22.5	22.	7.9
15	5	1986	1810	D1	5.1	6.4	5.7	24.	22.	22.	7.5
15	5	1986	1815	D3	6.2	5.2	4.6	24.	23.	22.5	7.3

Table 4. Diurnal Measurements. Rwanda, Cycle I, Dry Season

----DATE------ D.O.					------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
15	5	1986	1820	D5	6.6	6.	5.7	24.	23.	22.	7.2
15	5	1986	1825	D6	6.2	6.2	5.9	24.	23.5	22.5	7.3
15	5	1986	1830	D9	6.8	6.5	6.	24.	23.	22.	7.5
15	5	1986	1834	D10	7.1	6.	5.2	24.	23.	22.	7.5
15	5	1986	2140	B1	7.	6.1	2.8	23.	23.	22.5	7.2
15	5	1986	2135	C2	6.5	5.8	4.4	23.	23.	22.	7.2
15	5	1986	2145	C3	7.6	5.5	6.7	23.	23.	22.	7.7
15	5	1986	2150	C5	6.6	6.4	4.8	23.	23.	22.	7.4
15	5	1986	2155	C7	6.7	6.1	5.3	23.	23.	22.	7.2
15	5	1986	2200	C8	7.4	7.	6.4	23.	23.	22.	7.8
15	5	1986	2202	D1	6.7	5.9	5.2	22.5	22.	22.	7.7
15	5	1986	2206	D3	5.7	5.7	5.6	23.	22.5	22.	7.4
15	5	1986	2208	D5	6.2	5.6	5.5	22.5	22.	22.	7.2
15	5	1986	2212	D6	5.9	5.7	5.4	23.	23.	22.5	7.3
15	5	1986	2217	D9	6.5	6.	4.9	22.5	22.5	21.5	7.5
15	5	1986	2221	D10	6.9	6.5	5.	22.5	22.5	22.	7.4
16	5	1986	135	B1	5.5	5.2	4.5	18.5	18.5	18.5	7.2
16	5	1986	140	C2	5.9	5.7	4.4	18.	18.	18.	7.2
16	5	1986	145	C3	6.4	6.1	5.4	19.	19.	19.	7.6
16	5	1986	150	C5	5.5	5.4	2.7	19.	19.	18.5	7.4
16	5	1986	155	C7	6.	5.8	1.5	18.5	18.5	18.5	7.2
16	5	1986	200	C8	6.4	6.3	6.1	18.	18.	18.	7.7
16	5	1986	206	D1	5.8	5.7	4.9	19.	19.	19.	7.6
16	5	1986	210	D3	4.6	4.6	4.6	21.	21.	21.	7.2
16	5	1986	212	D5	5.4	5.4	5.3	20.5	20.5	20.5	7.2
16	5	1986	218	D6	5.	5.	5.	18.	18.	18.	7.3
16	5	1986	225	D9	5.5	5.5	5.5	18.	18.	18.	7.5
16	5	1986	230	D10	5.6	5.6	5.6	18.5	18.5	18.5	7.3
16	5	1986	530	B1	4.9	4.9	4.9	21.	21.	21.	7.2
16	5	1986	535	C2	4.5	4.5	4.2	20.5	20.5	20.5	7.2
16	5	1986	540	C3	6.2	6.2	6.2	21.	21.	21.	7.6
16	5	1986	545	C5	5.	5.	4.9	21.	21.	21.	7.3
16	5	1986	550	C7	5.5	5.5	5.5	21.	21.	21.	7.1
16	5	1986	555	C8	6.1	6.1	6.	21.	21.	21.	7.5
16	5	1986	600	D1	5.5	5.5	5.5	21.	21.	21.	7.5
16	5	1986	610	D3	4.3	4.3	4.3	21.	21.	21.5	7.2
16	5	1986	615	D5	4.6	4.6	4.6	21.	21.	21.	7.1
16	5	1986	617	D6	4.9	4.8	4.7	21.	21.	21.	7.3
16	5	1986	620	D9	5.3	5.3	5.3	21.	21.	21.	7.4
16	5	1986	625	D10	5.3	5.3	5.3	20.5	20.5	20.5	7.3
12	6	1986	540	B1	7.7	7.6	7.6	19.5	19.5	19.5	8.8
12	6	1986	544	C2	7.5	7.5	7.5	21.	21.	21.	7.5
12	6	1986	550	C3	5.5	5.5	5.5	20.	20.	20.	7.4
12	6	1986	555	C5	7.1	7.1	7.1	20.5	20.5	20.5	7.9
12	6	1986	603	C7	5.9	5.9	5.8	20.5	20.5	20.	7.4
12	6	1986	612	C8	6.8	6.8	6.7	20.5	20.	20.	8.5
12	6	1986	615	D1	7.8	7.6	7.6	20.	20.	20.	8.
12	6	1986	619	D3	6.3	6.3	6.3	20.	20.	20.	7.3
12	6	1986	622	D5	5.1	5.1	5.1	20.	20.	20.	7.2
12	6	1986	625	D6	7.8	7.8	7.8	20.	20.	20.5	7.6
12	6	1986	627	D9	5.8	5.8	5.8	20.5	20.5	20.5	7.3
12	6	1986	630	D10	6.9	6.8	6.7	20.	20.	20.	7.3
12	6	1986	945	B1	8.7	7.9	7.4	20.	20.	19.5	8.9

Table 4. Diurnal Measurements. Rwanda, Cycle I, Dry Season

----DATE------ D.O.					------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
12	6	1986	940	C2	8.	7.9	6.7	21.	21.	20.5	7.7
12	6	1986	948	C3	6.	5.8	5.3	21.	20.5	20.5	7.5
12	6	1986	957	C5	7.8	6.7	5.4	21.	20.5	20.5	8.1
12	6	1986	958	C7	6.3	6.2	5.6	21.5	21.	21.	7.4
12	6	1986	1000	C8	7.3	7.	6.2	22.5	21.	20.5	8.5
12	6	1986	1005	D1	8.7	8.4	6.8	22.5	20.5	20.	8.
12	6	1986	1010	D3	7.2	6.6	5.4	22.	21.	20.5	7.5
12	6	1986	1013	D5	5.8	5.4	4.4	22.5	20.5	20.	7.2
12	6	1986	1016	D6	8.7	8.6	7.4	22.	21.	20.5	8.
12	6	1986	1020	D9	6.6	6.2	5.7	22.5	21.	20.5	7.4
12	6	1986	1025	D10	8.7	7.2	6.2	22.5	20.5	20.5	7.5
12	6	1986	1330	B1	11.4	8.4	6.7	24.5	20.	20.	9.8
12	6	1986	1334	C2	9.7	9.4	6.5	25.5	21.5	21.	8.3
12	6	1986	1340	C3	7.8	6.4	5.4	25.	21.	21.	8.2
12	6	1986	1344	C5	11.4	8.8	4.9	26.	21.	21.	8.8
12	6	1986	1347	C7	6.9	6.9	6.3	26.	2.	21.5	7.9
12	6	1986	1351	C8	7.8	7.8	6.8	26.	21.5	21.	9.3
12	6	1986	1356	D1	10.4	9.4	7.5	26.	21.	20.5	8.8
12	6	1986	1400	D3	10.	7.7	5.7	25.5	21.5	21.	7.9
12	6	1986	1404	D5	7.3	6.2	4.	25.	21.5	21.	7:3
12	6	1986	1407	D6	9.4	9.4	8.8	25.5	21.5	21.	8.3
12	6	1986	1413	D9	8.4	7.2	5.7	26.	21.5	21.	7.9
12	6	1986	1416	D10	10.	9.4	7.2	26.	21.5	21.	8.4
12	6	1986	1745	B1	11.4	9.	6.5	26.	20.	19.5	9.5
12	6	1986	1751	C2	12.	11.	6.7	26.	22.5	21.	8.6
12	6	1986	1756	C3	8.5	7.3	5.4	25.	21.	20.	8.2
12	6	1986	1800	C5	11.4	8.2	8.6	21.	21.	20.5	8.9
12	6	1986	1804	C7	7.7	7.5	6.2	25.	22.	20.5	7.4
12	6	1986	1808	C8	8.2	8.1	6.2	25.	21.	20.	8.7
12	6	1986	1813	D1	11.	9.	6.2	25.	20.5	20.	8.9
12	6	1986	1816	D3	10.	8.1	5.5	25.	21.5	20.5	8.
12	6	1986	1820	D5	7.4	6.6	3.9	25.	21.	20.	7.4
12	6	1986	1823	D6	9.8	9.8	9.5	25.	22.	20.5	8.2
12	6	1986	1827	D9	8.7	7.8	5.9	25.	22.	21.	7.6
12	6	1986	1830	D10	10.8	10.8	5.2	25.	21.5	20.5	8.6
12	6	1986	2135	B1	9.8	7.8	4.7	23.	20.5	19.5	9.4
12	6	1986	2130	C2	9.7	9.1	4.7	23.5	22.5	21.	8.2
12	6	1986	2140	C3	7.4	7.	4.3	22.	21.	20.5	8.1
12	6	1986	2145	C5	7.5	4.5	2.5	17.5	16.	15.	8.7
12	6	1986	2155	C7	6.9	6.9	5.4	17.	16.5	15.5	7.4
12	6	1986	2200	C8	7.4	7.	5.3	17.5	16.5	15.5	8.5
12	6	1986	2202	D1	8.3	8.1	5.7	17.	15.5	15.	8.7
12	6	1986	2205	D3	8.7	7.9	5.2	17.	16.	15.	7.8
12	6	1986	2209	D5	6.8	5.9	3.1	17.	16.	11.	7.2
12	6	1986	2214	D6	9.8	9.2	8.5	17.	16.	12.	7.8
12	6	1986	2217	D9	7.9	7.4	8.7	17.5	17.	16.	7.6
12	6	1986	2220	D10	9.	9.	7.7	18.	17.	16.	8.3
12	6	1986	550	C7	6.4	6.	6.	21.	21.	21.	7.1
12	6	1986	552	C8	6.3	6.3	6.3	21.	21.	21.	7.9
12	6	1986	558	D1	7.4	7.4	7.4	20.	20.	20.	7.8
12	6	1986	600	D3	6.7	6.7	6.7	20.5	20.5	20.5	7.2
12	6	1986	605	D5	5.5	5.5	5.5	20.5	20.5	20.5	7.2
12	6	1986	607	D6	7.8	7.7	7.7	20.5	20.5	20.5	7.5

Table 4. Diurnal Measurements. Rwanda, Cycle I, Dry Season

----DATE------			D.O.	-----OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
12	6	1986	610 D9	6.4	6.4	6.4	20.5	20.5	20.5	7.3
12	6	1986	616 D10	7.4	7.3	7.3	20.5	20.5	20.5	7.4
12	6	1986	535 B1	8.	7.9	7.5	20.	20.	20.	8.9
12	6	1986	530 C2	7.7	7.7	7.7	21.	21.	21.	7.7
12	6	1986	540 C3	6.1	6.	5.9	20.5	20.5	20.5	7.6
12	6	1986	545 C5	6.7	6.5	4.3	20.5	20.5	20.5	7.6
13	6	1986	207 D5	6.5	6.3	2.3	21.5	21.5	20.5	7.3
13	6	1986	210 D6	8.6	8.6	6.6	21.5	21.5	20.5	7.8
13	6	1986	216 D9	5.3	7.1	4.1	21.5	21.5	21.	7.5
13	6	1986	220 D10	8.6	8.2	4.8	21.	21.	20.5	7.7
13	6	1986	132 B1	9.	7.4	4.6	21.	21.	20.	9.3
13	6	1986	130 C2	8.2	8.2	4.7	22.	22.	21.	8.4
13	6	1986	135 C3	6.9	6.4	4.1	21.5	21.5	20.5	8.1
13	6	1986	140 C5	8.6	8.5	7.8	21.5	21.5	20.5	8.7
13	6	1986	142 C7	6.7	6.1	4.8	22.	22.	21.	7.4
13	6	1986	146 C8	6.7	6.6	2.8	21.5	21.	20.5	8.4
13	6	1986	200 D1	8.3	8.1	3.5	21.5	21.5	20.5	8.1
13	6	1986	205 D3	8.	7.8	4.3	21.5	21.5	20.5	7.6
10	7	1986	543 B1	7.	6.8	6.8	19.	19.	19.	8.6
10	7	1986	548 C2	8.4	8.4	8.4	19.5	19.5	19.	8.
10	7	1986	554 C3	7.1	7.1	7.1	19.	19.	19.	9.2
10	7	1986	558 C5	7.2	7.2	7.2	19.	19.	19.	9,
10	7	1986	603 C7	5.4	5.4	5.4	20.	20.	20.	7.2
10	7	1986	605 C8	6.	6.	5.4	19.	19.	19.	7.6
10	7	1986	608 D1	5.1	5.1	5.1	18.	18.	18.	7.3
10	7	1986	611 D3	5.3	5.3	5.3	19.	19.	19.5	7.2
10	7	1986	615 D5	5.2	5.2	5.2	19.	19.	19.	7.2
10	7	1986	618 D6	5.7	5.7	5.7	19.5	19.5	19.5	7.3
10	7	1986	620 D9	5.6	5.6	5.6	19.	19.	19.	7.2
10	7	1986	625 D10	5.4	5.4	5.3	19.	19.	19.	7.4
10	7	1986	945 B1	8.9	7.4	7.2	20.	18.5	18.5	9.1
10	7	1986	950 C2	9.8	8.6	8.2	20.5	20.5	19.	8.5
10	7	1986	958 C3	8.9	7.7	7.4	19.5	19.	19.	9.2
10	7	1986	1000 C5	10.2	7.4	6.8	19.5	19.	19.	9.1
10	7	1986	1004 C7	6.4	6.	5.8	20.5	20.	19.5	7.7
10	7	1986	1006 C8	7.4	7.2	6.5	20.	19.	19.	8.2
10	7	1986	1010 D1	5.7	5.7	5.2	19.5	18.5	18.5	7.4
10	7	1986	1014 D3	6.5	6.	5.5	21.	20.	19.5	7.3
10	7	1986	1018 D5	6.1	5.8	5.8	20.	19.	19.	7.3
10	7	1986	1024 D6	7.3	6.7	6.3	20.	20.	19.5	7.4
10	7	1986	1029 D9	6.8	6.4	5.7	21.	19.5	19.	7.4
10	7	1986	1032 D10	7.4	6.1	5.8	20.	19.	19.	7.5
10	7	1986	1350 B1	9.8	7.6	6.5	25.	19.	18.5	9.6
10	7	1986	1345 C2	10.8	9.7	7.6	26.	21.	20.	9.2
10	7	1986	1359 C3	10.8	7.6	6.7	24.	19.5	19.	9.6
10	7	1986	1403 C5	12.2	8.	5.8	24.	19.	19.	9.7
10	7	1986	1408 C7	6.7	6.4	5.9	24.	21.5	20.5	7.7
10	7	1986	1413 C8	8.4	8.	7.1	21.	20.	19.	8.8
10	7	1986	1417 D1	7.1	5.4	4.	23.5	19.5	18.5	7.8
10	7	1986	1420 D3	7.3	6.5	5.6	24.5	20.5	20.	7.6
10	7	1986	1429 D5	6.9	6.3	5.5	24.5	20.5	20.	7.5
10	7	1986	1432 D6	7.6	7.5	6.6	24.	21.	20.	7.8
10	7	1986	1439 D9	7.2	6.9	6.6	25.	21.	20.	7.7

Table 4. Diurnal Measurements. Rwanda, Cycle I, Dry Season

----DATE------				D.O.	------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
10	7	1986	1442	D10	8.2	7.	5.6	25.	20.	19.	8.1
10	7	1986	1750	B1	11.2	7.4	6.4	24.5	19.	18.5	9.4
10	7	1986	1753	C2	12.2	11.2	7.1	25.	20.5	20.	9.1
10	7	1986	1758	C3	11.	7.5	6.1	25.	20.	19.	9.6
10	7	1986	1802	C5	12.4	9.4	5.4	19.	19.	19.	9.8
10	7	1986	1807	C7	6.7	6.3	5.8	25.	22.	20.	7.3
10	7	1986	1813	C8	8.	7.7	3.5	24.5	20.	19.	8.5
10	7	1986	1817	D1	7.	5.1	3.9	24.	19.	19.	7.8
10	7	1986	1821	D3	7.3	6.8	5.5	24.	21.	20.	7.3
10	7	1986	1824	D5	7.	6.8	5.2	24.	21.	20.	7.4
10	7	1986	1827	D6	7.8	7.7	6.5	24.	21.	20.	7.6
10	7	1986	1830	D9	7.2	7.	5.7	24.	21.	20.	7.6
10	7	1986	1835	D10	7.6	7.	5.1	24.5	20.	19.	7.7
10	7	1986	2130	B1	9.8	7.4	6.	22.5	19.5	19.	9.2
10	7	1986	2135	C2	12.4	11.2	7.1	23.	21.	20.	9.
10	7	1986	2140	C3	9.5	7.1	3.4	23.	20.	19.	9.4
10	7	1986	2145	C5	11.	7.6	5.	23.	19.	19.	9.3
10	7	1986	2151	C7	6.6	6.2	5.5	22.5	21.	20.	7.3
10	7	1986	2156	C8	7.9	7.8	7.7	23.	20.	19.	8.
10	7	1986	2201	D1	7.	4.8	3.6	22.	19.	18.5	7.4
10	7	1986	2207	D3	6.8	6.4	4.9	22.	21.5	20.	7.3
10	7	1986	2212	D5	7.	6.9	5.6	23.	20.5	20.	7.4
10	7	1986	2218	D6	7.1	7.	6.7	22.	20.	20.	7.2
10	7	1986	2224	D9	7.	6.9	4.3	22.5	22.	22.	7.3
10	7	1986	2231	D10	6.7	5.	4.7	22.5	20.	19.	7.3
11	7	1986	138	B1	6.8	6.7	6.5	20.	20.	20.	9.2
11	7	1986	145	C2	9.8	9.3	5.8	21.	21.	20.	8.8
11	7	1986	150	C3	8.7	6.5	5.6	20.	20.	18.5	9.4
11	7	1986	154	C5	6.7	6.4	6.3	20.	20.	19.	9.2
11	7	1986	200	C7	8.6	7.6	4.2	20.5	20.	19.	7.3
11	7	1986	206	C8	6.2	6.	4.8	21.	21.	20.	8.1
11	7	1986	209	D1	7.2	6.7	2.9	20.5	20.5	19.5	7.4
11	7	1986	214	D3	6.	5.5	2.9	20.	20.	18.5	7.2
11	7	1986	220	D5	6.5	6.3	4.7	20.	21.	20.	7.2
11	7	1986	223	D6	6.5	6.1	2.5	21.	21.	20.	7.4
11	7	1986	226	D9	7.	6.8	5.3	21.	21.	20.	7.2
11	7	1986	230	D10	6.5	6.2	4.5	21.	21.	19.	7.4
11	7	1986	536	B1	8.	7.7	4.5	19.	19.	18.5	9.2
11	7	1986	538	C2	8.7	8.6	8.4	20.	20.	20.	8.5
11	7	1986	540	C3	8.7	7.2	6.8	19.	19.	19.	9.2
11	7	1986	544	C5	7.2	6.5	3.7	19.	19.	19.	9.
11	7	1986	550	C7	5.9	5.9	5.8	20.	20.	20.	7.2
11	7	1986	553	C8	6.9	6.8	6.8	19.	19.	19.	7.8
11	7	1986	600	D1	5.4	5.2	2.9	19.	19.	18.5	7.2
11	7	1986	605	D3	5.9	5.8	5.7	20.	20.	20.	7.1
11	7	1986	609	D5	6.1	6.1	6.1	20.	20.	19.5	7.2
11	7	1986	613	D6	6.5	6.5	6.5	20.	20.	20.	7.3
11	7	1986	617	D9	6.	6.	6.	20.	20.	20.	7.3
11	7	1986	620	D10	6.	5.7	3.2	19.5	19.5	19.5	7.2

Table 4. Diurnal Measurements. Rwanda, Cycle I, Wet Season

----DATE------			D.O.		------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
30	10	1986	554	B1	5.5	5.3	4.4	22.5	22.5	22.	6.9
30	10	1986	550	C2	6.5	6.1	3.9	23.	23.	22.5	7.
30	10	1986	552	C3	6.8	6.6	5.6	22.	22.	22.	7.4
30	10	1986	602	C5	6.	5.7	2.8	22.5	22.5	22.	6.8
30	10	1986	606	C7	5.9	5.9	5.6	23.	23.	22.5	6.6
30	10	1986	613	D1	6.5	6.1	2.	20.	20.	20.	6.9
30	10	1986	617	D3	6.4	6.1	3.7	23.	23.	22.	6.6
30	10	1986	620	D5	6.7	6.5	4.1	23.	23.	22.	6.6
30	10	1986	624	D6	5.5	5.1	0.5	23.	23.	22.	6.6
30	10	1986	629	D9	6.	5.6	2.7	22.5	22.5	22.	6.7
30	10	1986	936	B1	5.5	4.6	3.4	25.	24.	22.	6.8
30	10	1986	933	C2	7.	6.1	4.2	24.	23.	22.5	7.
30	10	1986	941	C3	7.4	7.	5.	24.	23.	22.5	7.6
30	10	1986	945	C5	5.3	4.2	2.9	24.5	23.	22.5	6.9
30	10	1986	949	C7	6.	5.8	5.3	24.5	23.5	23.	6.8
30	10	1986	957	D1	7.2	6.3	2.	25.	24.	21.5	7.3
30	10	1986	1001	D3	7.	6.5	3.	25.	24.	22.5	6.7
30	10	1986	1004	D5	7.6	6.9	2.5	25.	23.5	22.5	6.9
30	10	1986	1007	D6	6.2	4.5	1.	25.	23.5	22.5	6.8
30	10	1986	1013	D9	7.6	5.2	2.8	24.5	23.	22.	7.1
30	10	1986	1333	B1	7.	5.4	2.8	26.	23.	22.	7.1
30	10	1986	1330	C2	8.4	7.1	4.1	26.	24.	23.	7.4
30	10	1986	1339	C3	8.7	8.3	6.2	25.5	23.	22.5	8.1
30	10	1986	1342	C5	8.	5.8	2.7	26.	23.5	22.5	7.2
30	10	1986	1345	C7	6.4	6.1	4.6	25.5	24.	22.	6.8
30	10	1986	1353	D1	8.4	5.9	2.1	25.5	22.5	21.5	7.5
30	10	1986	1357	D3	7.9	6.8	3.	25.	24.	23.	7.
30	10	1986	1401	D5	8.2	7.6	3.9	25.	24.	22.2	7.1
30	10	1986	1405	D6	7.	5.5	0.4	25.	24.	22.	7.
30	10	1986	1409	D9	8.4	5.6	2.4	25.	23.	22.	7.4
30	10	1986	1756	B1	6.6	5.	2.7	24.	23.	23.	7.1
30	10	1986	1752	C2	7.3	6.9	2.9	24.	24.	23.	7.1
30	10	1986	1800	C3	8.6	8.1	5.2	24.	23.	22.	8.2
30	10	1986	1805	C5	7.5	5.9	2.1	24.	23.5	22.5	7.1
30	10	1986	1810	C7	6.	5.4	4.6	24.	23.5	22.	6.7
30	10	1986	1820	D1	7.6	6.1	1.8	23.5	23.	21.5	7.6
30	10	1986	1825	D3	7.5	7.	2.6	24.	24.	23.	6.8
30	10	1986	1830	D5	7.8	7.6	2.4	24.	24.	22.5	6.8
30	10	1986	1836	D6	6.2	5.7	0.5	24.	24.	22.	6.9
30	10	1986	1844	D9	7.4	7.	1.5	23.	23.	22.	7.4
30	10	1986	2134	B1	6.2	5.7	2.1	23.	23.	22.5	7.
30	10	1986	2130	C2	6.8	6.6	3.7	23.	23.	22.5	7.1
30	10	1986	2139	C3	8.	7.6	2.9	23.	23.	22.	8.
30	10	1986	2143	C5	6.6	6.2	1.	23.	23.	22.	6.9
30	10	1986	2147	C7	5.9	5.6	4.	23.	23.	23.	6.7
30	10	1986	2156	D1	6.9	5.4	1.7	22.5	22.5	21.5	7.2
30	10	1986	2200	D3	6.8	6.5	2.9	23.	23.	22.5	6.8
30	10	1986	2204	D5	7.1	6.6	1.9	23.	23.	22.	6.7
30	10	1986	2209	D6	5.7	5.4	0.2	23.	23.	22.	6.8
30	10	1986	2215	D9	6.6	6.2	0.7	22.5	22.5	22.	7.1
31	10	1986	133	B1	5.5	5.4	4.5	22.	22.	22.	6.9
31	10	1986	130	C2	6.3	6.2	6.	22.5	22.5	22.5	6.9
31	10	1986	138	C3	7.2	6.7	4.	22.	22.	22.	7.7

Table 4. Diurnal Measurements. Rwanda, Cycle I, Wet Season

----DATE------ D.O.					------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
31	10	1986	142	C5	5.7	5.6	5.	22.	22.	22.	6.8
31	10	1986	146	C7	5.4	5.2	4.5	22.	22.	22.	6.7
31	10	1986	154	D1	6.1	5.9	1.8	22.	22.	21.5	7.
31	10	1986	157	D3	6.	5.9	5.9	22.5	22.5	22.5	6.6
31	10	1986	201	D5	6.4	6.2	5.	22.	22.	22.	6.6
31	10	1986	205	D6	4.6	4.5	2.2	22.5	22.5	22.	6.6
31	10	1986	209	D9	5.8	5.7	5.5	22.	22.	22.	6.8
31	10	1986	534	B1	5.	5.	5.	22.	22.	22.	6.9
31	10	1986	530	C2	5.3	5.3	5.3	22.	22.	22.	6.8
31	10	1986	540	C3	6.6	6.5	6.4	22.	22.	22.	7.5
31	10	1986	543	C5	4.9	4.8	4.8	22.	22.	22.	6.8
31	10	1986	547	C7	5.1	4.9	4.8	22.	22.	22.	6.6
31	10	1986	556	D1	5.2	5.2	5.1	21.	21.	21.	7.
31	10	1986	600	D3	5.1	5.1	5.	22.	22.	22.	6.6
31	10	1986	606	D5	5.5	5.5	5.5	22.	22.	22.	6.5
31	10	1986	610	D6	3.8	3.7	3.7	22.	22.	22.	6.5
31	10	1986	617	D9	5.1	5.	5.	21.5	21.5	21.5	6.7
27	11	1986	544	B1	6.1	6.1	6.1	21.	21.	21.	7.6
27	11	1986	540	C2	5.5	5.4	5.4	21.5	21.5	21.5	6.8
27	11	1986	549	C3	8.	8.	7.9	21.	21.	21.	8.5
27	11	1986	552	C5	5.6	5.5	5.5	21.	21.	21.	6.8
27	11	1986	556	C7	5.4	5.3	5.3	21.5	21.5	21.5	6.6
27	11	1986	603	D1	4.5	4.5	4.4	21.	21.	21.	6.8
27	11	1986	606	D3	4.3	4.2	4.2	21.5	21.5	21.5	6.6
27	11	1986	610	D5	4.7	4.6	4.6	21.	21.	21.	6.6
27	11	1986	613	D6	5.	5.	4.9	21.5	21.5	21.5	6.7
27	11	1986	618	D9	5.3	5.2	5.2	21.5	21.5	21.5	6.7
27	11	1986	934	B1	7.	6.1	5.7	22.5	21.	20.5	7.1
27	11	1986	930	C2	6.5	6.	5.3	22.5	22.	21.5	7.2
27	11	1986	939	C3	10.	8.9	8.4	22.	21.	21.	8.7
27	11	1986	943	C5	7.9	6.6	5.7	23.	22.	21.5	7.3
27	11	1986	946	C7	6.1	5.9	5.5	23.	22.	21.5	6.8
27	11	1986	954	D1	5.4	4.9	4.1	23.	21.5	21.	6.8
27	11	1986	957	D3	5.2	4.3	4.	23.5	22.	21.5	6.6
27	11	1986	1000	D5	5.7	4.7	3.7	23.	22.	21.5	6.7
27	11	1986	1004	D6	6.	5.5	5.	23.	22.	21.5	6.8
27	11	1986	1009	D9	6.4	6.1	5.2	23.	22.	21.5	6.8
27	11	1986	1338	B1	7.9	7.6	6.9	26.	23.	22.	7.9
27	11	1986	1332	C2	8.4	7.3	6.1	27.	21.5	21.	7.4
27	11	1986	1343	C3	13.6	12.8	9.8	23.	21.5	21.	9.
27	11	1986	1346	C5	9.6	9.3	6.6	26.	23.	22.	7.2
27	11	1986	1349	C7	7.3	7.2	6.4	25.5	23.	22.	6.9
27	11	1986	1357	D1	6.6	5.9	4.4	26.	22.	21.5	6.9
27	11	1986	1400	D3	6.6	5.1	4.5	26.	22.5	20.	6.7
27	11	1986	1404	D5	8.2	5.6	4.4	26.	22.	21.5	6.8
27	11	1986	1407	D6	7.2	6.9	5.6	26.	23.	22.	6.7
27	11	1986	1413	D9	7.9	7.3	6.	26.	22.5	22.	6.8
27	11	1986	1734	B1	8.2	7.	5.6	25.	22.	21.	8.2
27	11	1986	1730	C2	7.9	7.7	6.7	25.	23.	22.	7.1
27	11	1986	1740	C3	13.4	12.8	8.8	25.	22.	21.	9.2
27	11	1986	1747	C5	9.3	9.2	5.2	24.5	23.	22.	7.1
27	11	1986	1752	C7	7.4	7.4	6.4	24.5	23.	22.5	6.8
27	11	1986	1800	D1	6.8	5.7	3.9	25.	22.	21.	7.

Table 4. Diurnal Measurements. Rwanda, Cycle I, Wet Season

----DATE------ D.O.					------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
27	11	1986	1805	D3	7.	5.5	3.9	24.5	23.	22.	6.9
27	11	1986	1811	D5	7.4	5.3	4.	24.5	22.5	21.5	6.8
27	11	1986	1815	D6	7.3	6.9	5.2	24.5	23.	22.	6.9
27	11	1986	1820	D9	7.8	6.9	5.1	24.5	22.5	22.	7.
27	11	1986	2134	B1	6.9	5.8	3.2	23.	22.	21.	8.1
27	11	1986	2130	C2	7.1	7.	5.9	23.5	23.5	22.	6.9
27	11	1986	2139	C3	12.2	12.	6.2	23.	22.	21.	9.2
27	11	1986	2143	C5	7.9	7.6	4.	23.	23.	22.	7.
27	11	1986	2146	C7	6.4	6.3	5.2	23.	23.	22.	6.8
27	11	1986	2155	D1	5.8	4.7	2.9	23.	22.	21.	7.1
27	11	1986	2159	D3	6.	5.1	3.8	23.	23.	22.	6.8
27	11	1986	2205	D5	6.6	5.1	3.7	23.	22.	21.5	6.7
27	11	1986	2208	D6	6.5	6.4	3.6	23.	23.	22.	6.9
27	11	1986	2213	D9	6.8	6.5	4.8	23.	22.5	22.	6.7
28	11	1986	133	B1	6.	5.7	3.2	22.	22.	21.	7.7
28	11	1986	130	C2	6.3	6.	4.8	22.5	22.5	22.	6.8
28	11	1986	138	C3	9.6	9.2	5.2	22.	22.	21.	8.8
28	11	1986	144	C5	6.9	6.5	3.7	22.	22.	22.	6.8
28	11	1986	146	C7	6.2	6.2	6.1	22.5	22.5	22.5	6.7
28	11	1986	154	D1	5.4	5.1	1.4	22.	22.	21.	6.9
28	11	1986	157	D3	5.3	5.2	4.8	22.	22.	22.	6.8
28	11	1986	201	D5	6.	5.7	2.9	22.	22.	21.5	6.8
28	11	1986	205	D6	6.1	6.	4.2	22.	22.	22.	6.9
28	11	1986	209	D9	6.4	6.1	4.	22.	22.	22.	6.8
28	11	1986	542	B1	5.6	5.6	5.6	21.5	21.5	21.5	7.3
28	11	1986	533	C2	5.5	5.4	5.4	21.5	21.5	21.5	6.7
28	11	1986	547	C3	8.4	8.3	8.3	21.5	21.5	21.5	8.6
28	11	1986	552	C5	5.9	5.9	5.8	21.5	21.5	21.5	6.8
28	11	1986	555	C7	5.7	5.6	5.6	21.5	21.5	21.5	6.6
28	11	1986	605	D1	4.9	4.8	4.8	21.	21.	21.	6.7
28	11	1986	608	D3	4.5	4.4	4.4	21.5	21.5	21.5	6.6
28	11	1986	612	D5	5.2	5.2	5.2	21.	21.	21.	6.6
28	11	1986	615	D6	5.3	5.2	5.2	21.5	21.5	21.5	6.8
28	11	1986	620	D9	5.5	5.5	5.4	21.5	21.5	21.5	6.8
23	12	1986	555	B1	7.3	7.	1.9	20.	20.	20.	8.
23	12	1986	550	C2	8.7	8.2	5.8	21.	21.	20.	7.2
23	12	1986	600	C3	6.4	6.	5.7	20.5	20.5	20.5	7.5
23	12	1986	603	C5	5.9	5.7	4.7	21.	21.	21.	7.
23	12	1986	607	C7	6.	5.9	5.7	21.	21.	21.	6.9
23	12	1986	614	D1	7.3	7.	2.7	20.	20.	19.	7.8
23	12	1986	617	D3	5.3	5.2	5.1	21.	21.	21.	6.7
23	12	1986	620	D5	6.1	5.9	1.9	20.5	20.5	20.	6.6
23	12	1986	623	D6	7.7	7.4	5.1	21.	21.	20.	6.8
23	12	1986	627	D9	7.9	7.6	4.4	20.5	20.5	20.	7.
23	12	1986	939	B1	9.	6.8	2.6	22.	20.5	20.	8.4
23	12	1986	934	C2	11.	10.	8.1	22.	21.	20.5	8.3
23	12	1986	944	C3	8.5	8.	5.	22.	21.	20.5	8.
23	12	1986	948	C5	7.	5.6	4.4	22.	21.	21.	7.7
23	12	1986	953	C7	6.6	6.3	5.8	22.5	21.5	21.	6.8
23	12	1986	1000	D1	9.9	8.	3.5	21.5	20.5	19.5	8.1
23	12	1986	1004	D3	6.4	5.8	5.	22.5	21.	21.	6.7
23	12	1986	1009	D5	7.5	6.1	1.7	22.5	21.	20.	6.7
23	12	1986	1013	D6	9.3	9.1	7.8	23.	21.5	21.	7.1

Table 4. Diurnal Measurements. Rwanda, Cycle I, Wet Season

----DATE------			D.O.	------OXYGEN-----			WATER TEMPERATURE			
				TOP	MID	BOT	TOP	MID.	BOT.	
DAY	MONTH	YEAR	TIME POND	mg/L	mg/L	mg/L	deg C	deg C	deg C	pH
23	12	1986	1016 D9	9.5	8.2	5.2	23.	21.	20.5	7.4
23	12	1986	1334 B1	9.8	9.4	4.7	27.	22.	20.5	8.8
23	12	1986	1330 C2	12.8	8.8	6.4	27.	22.	20.5	8.7
23	12	1986	1338 C3	11.4	11.	6.7	26.5	22.	21.	8.4
23	12	1986	1340 C5	8.3	8.3	6.4	26.	22.	21.5	7.3
23	12	1986	1345 C7	7.2	7.	6.	26.	23.	22.	6.9
23	12	1986	1353 D1	11.6	7.9	4.	27.	20.5	19.5	8.6
23	12	1986	1357 D3	7.4	6.6	4.2	26.5	22.	21.	6.9
23	12	1986	1400 D5	7.9	7.2	2.7	27.	22.	20.	7.
23	12	1986	1404 D6	11.2	10.2	8.6	27.	22.	21.	7.2
23	12	1986	1408 D9	10.4	9.7	6.	27.	22.	21.	8.2
23	12	1986	1743 B1	15.	13.8	10.	26.5	22.5	20.5	8.9
23	12	1986	1740 C2	10.6	8.4	2.9	26.	22.	20.	9.
23	12	1986	1748 C3	12.	11.4	9.2	26.	23.5	21.	8.1
23	12	1986	1751 C5	8.5	8.1	4.6	26.	24.5	21.	7.3
23	12	1986	1755 C7	8.	7.7	6.4	26.	24.	22.	6.9
23	12	1986	1801 D1	11.	8.5	4.2	26.	21.	19.	8.8
23	12	1986	1804 D3	7.9	7.5	4.1	26.	22.	21.	7.
23	12	1986	1807 D5	8.6	8.1	3.4	26.	21.5	20.	7.2
23	12	1986	1812 D6	11.8	10.8	8.1	26.5	22.5	21.	7.6
23	12	1986	1817 D9	10.2	10.2	7.4	26.5	22.	21.	8.4
23	12	1986	2134 B1	9.4	7.4	2.6	24.	22.	20.	8.7
23	12	1986	2130 C2	12.	11.8	7.2	24.5	22.5	20.5	8.8
23	12	1986	2140 C3	10.6	10.2	6.	24.	21.	21.	7.6
23	12	1986	2144 C5	7.6	7.4	4.	24.	23.5	21.	7.1
23	12	1986	2148 C7	6.9	6.9	5.8	24.	23.5	22.	6.7
23	12	1986	2155 D1	9.	8.	4.1	24.	20.5	19.5	8.7
23	12	1986	2157 D3	6.9	6.5	4.5	24.	23.	21.	7.
23	12	1986	2201 D5	7.1	6.9	1.9	24.	22.	20.	6.8
23	12	1986	2206 D6	9.8	9.8	4.4	24.5	22.5	21.	7.1
23	12	1986	2211 D9	9.8	9.8	6.6	24.5	22.5	21.	7.8
24	12	1986	135 B1	8.	6.	1.6	23.	22.	20.	8.6
24	12	1986	130 C2	10.4	10.4	5.5	23.	22.5	20.5	8.6
24	12	1986	140 C3	8.1	8.1	6.3	23.	22.5	21.	7.4
24	12	1986	143 C5	6.4	6.	3.2	23.	23.	21.	6.9
24	12	1986	147 C7	6.2	5.8	4.6	23.	23.	22.	6.6
24	12	1986	154 D1	8.4	8.	4.1	22.5	20.5	19.5	8.4
24	12	1986	157 D3	6.4	5.2	3.3	23.	22.5	22.	6.8
24	12	1986	200 D5	6.8	6.	1.7	23.	22.	20.5	6.8
24	12	1986	205 D6	8.7	8.7	4.3	23.	22.5	21.	6.9
24	12	1986	210 D9	9.1	9.	2.	23.	22.5	20.5	7.5
24	12	1986	533 B1	7.2	6.7	3.8	21.5	21.5	21.	8.3
24	12	1986	530 C2	8.9	8.5	5.7	22.	22.	20.5	8.3
24	12	1986	538 C3	6.2	6.1	4.4	21.5	21.5	21.	7.2
24	12	1986	542 C5	5.3	5.2	4.7	22.	22.	21.	6.9
24	12	1986	545 C7	6.	5.9	5.2	22.	22.	22.	6.6
24	12	1986	555 D1	7.8	7.4	2.3	21.	21.	19.	8.1
24	12	1986	600 D3	5.5	5.3	5.	22.	22.	21.5	6.7
24	12	1986	610 D5	6.6	5.5	1.8	21.5	21.5	20.5	6.8
24	12	1986	615 D6	7.1	6.9	4.5	22.	22.	21.	6.8
24	12	1986	620 D9	7.7	7.5	2.3	22.	22.	21.	7.2
22	1	1987	558 B1	5.9	5.7	2.1	21.5	21.5	21.5	7.
22	1	1987	555 C2	4.4	4.3	4.3	21.5	21.5	21.5	6.9

Table 4. Diurnal Measurements. Rwanda, Cycle I, Wet Season

----DATE------ D.O.					------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
22	1	1987	604	C3	6.2	5.9	4.6	21.5	21.5	21.5	7.5
22	1	1987	607	C5	5.8	5.8	5.8	21.5	21.5	21.5	6.6
22	1	1987	610	C7	6.1	6.	6.	22.	22.	22.	6.4
22	1	1987	617	D1	5.4	5.4	5.3	21.	21.	21.	6.9
22	1	1987	620	D3	5.	5.	5.	21.	21.	21.	6.6
22	1	1987	623	D5	4.8	4.8	4.7	21.	21.	21.	6.6
22	1	1987	625	D6	5.1	5.	4.9	21.5	21.5	21.5	6.5
22	1	1987	629	D9	5.9	5.9	5.9	21.	21.	21.	6.7
22	1	1987	1000	B1	8.4	5.3	3.6	22.	21.	20.5	7.9
22	1	1987	1003	C2	4.7	4.2	3.4	23.	22.	21.5	6.8
22	1	1987	1008	C3	6.8	5.7	3.5	22.5	21.5	21.	8.3
22	1	1987	1013	C5	7.8	5.4	3.7	23.	22.	21.5	6.9
22	1	1987	1017	C7	6.3	6.1	5.4	23.	22.	21.5	6.6
22	1	1987	1026	D1	7.8	4.6	4.4	22.	21.	21.	7.4
22	1	1987	1030	D3	6.2	3.8	3.3	22.5	22.	21.5	6.7
22	1	1987	1035	D5	5.7	3.9	2.8	23.	22.	21.5	6.6
22	1	1987	1038	D6	6.1	5.1	4.2	24.	22.	21.5	6.8
22	1	1987	1043	D9	9.1	4.2	3.6	22.5	21.5	21.	7.
22	1	1987	1330	B1	11.4	5.4	1.6	25.	21.	20.5	8.6
22	1	1987	1334	C2	8.2	3.6	2.3	25.	22.	21.	7.2
22	1	1987	1339	C3	8.	6.7	5.1	25.	22.	21.5	8.4
22	1	1987	1343	C5	8.2	6.7	3.1	25.5	22.	21.5	7.2
22	1	1987	1347	C7	7.	6.6	4.9	25.	22.5	22.	6.6
22	1	1987	1354	D1	8.8	5.2	4.1	25.	21.	21.	8.4
22	1	1987	1358	D3	8.4	4.2	2.9	25.	22.	21.5	6.8
22	1	1987	1402	D5	7.	4.7	3.2	25.	22.	21.5	6.9
22	1	1987	1406	D6	8.9	5.9	4.7	25.	22.	21.5	7.1
22	1	1987	1410	D9	10.	5.9	3.3	25.	21.5	21.	7.3
22	1	1987	1740	B1	9.6	6.4	2.	23.5	21.5	20.5	8.6
22	1	1987	1744	C2	8.1	5.3	1.3	24.	22.	21.	7.
22	1	1987	1749	C3	7.6	6.5	3.5	24.	23.	21.5	8.4
22	1	1987	1752	C5	8.2	7.4	2.7	24.	23.	22.	7.
22	1	1987	1756	C7	7.	6.6	5.4	24.	23.	22.	6.8
22	1	1987	1804	D1	8.3	5.3	3.	23.5	21.5	21.	8.
22	1	1987	1808	D3	7.5	4.9	2.6	23.5	22.	21.5	6.8
22	1	1987	1812	D5	6.5	4.	2.	23.5	22.	21.5	6.8
22	1	1987	1815	D6	7.5	5.3	3.1	23.5	22.	21.5	6.8
22	1	1987	1820	D9	8.5	5.1	3.1	23.5	22.	21.5	7.1
22	1	1987	2134	B1	7.9	5.5	1.2	23.5	22.	21.	8.5
22	1	1987	2130	C2	6.7	4.5	1.1	23.	22.	21.	6.9
22	1	1987	2139	C3	7.3	6.7	2.8	22.5	22.	21.5	8.1
22	1	1987	2143	C5	7.	6.4	1.8	23.	22.5	22.	6.9
22	1	1987	2148	C7	6.5	5.9	4.4	22.5	22.5	22.	6.8
22	1	1987	2155	D1	7.3	4.8	2.6	22.5	21.5	21.	7.6
22	1	1987	2159	D3	6.5	3.9	2.4	22.5	22.	21.5	6.6
22	1	1987	2203	D5	5.7	3.9	1.5	22.5	22.	21.5	6.6
22	1	1987	2206	D6	6.5	5.6	4.1	22.5	22.5	22.	6.7
22	1	1987	2211	D9	6.9	4.8	2.3	22.5	22.	21.5	7.
23	1	1987	134	B1	6.2	5.7	0.7	21.5	21.5	20.5	7.6
23	1	1987	130	C2	5.7	5.6	2.1	22.	22.	21.	6.7
23	1	1987	140	C3	6.2	6.	0.8	22.	22.	22.	7.4
23	1	1987	144	C5	6.3	6.2	6.2	22.	22.	22.	6.8
23	1	1987	148	C7	6.3	6.2	6.	22.	22.	22.	6.7

Table 4. Diurnal Measurements. Rwanda, Cycle I, Wet Season

----DATE------			D.O.		------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
23	1	1987	156	D1	6.2	5.8	2.8	21.5	21.5	21.	7.1
23	1	1987	200	D3	5.	4.9	4.3	22.	22.	22.	6.7
23	1	1987	205	D5	5.	4.7	0.7	22.	22.	22.	6.5
23	1	1987	208	D6	5.6	5.5	5.5	22.	22.	22.	6.7
23	1	1987	213	D9	6.1	6.1	6.	22.	22.	22.	6.8
23	1	1987	533	B1	4.7	4.4	1.2	21.	21.	21.	7.1
23	1	1987	530	C2	4.5	4.5	4.5	21.	21.	21.	6.6
23	1	1987	538	C3	5.5	5.4	5.4	21.	21.	21.	7.2
23	1	1987	543	C5	5.5	5.4	5.3	21.5	21.5	21.5	6.8
23	1	1987	546	C7	5.7	5.7	5.6	21.5	21.5	21.5	6.6
23	1	1987	554	D1	5.2	5.1	4.8	21.	21.	21.	7.
23	1	1987	557	D3	4.8	4.8	4.8	21.	21.	21.	6.5
23	1	1987	600	D5	4.2	4.2	4.1	21.	21.	21.	6.6
23	1	1987	603	D6	5.	4.9	4.9	21.	21.	21.	6.6
23	1	1987	608	D9	5.4	5.4	5.4	21.	21.	21.	6.6
19	2	1987	550	B1	3.6	3.5	3.5	22.	22.	22.	6.7
19	2	1987	553	C2	5.	4.9	4.5	21.5	21.5	21.5	6.6
19	2	1987	557	C3	6.6	6.4	5.3	22.	22.	21.5	8.5
19	2	1987	600	C5	3.8	3.7	3.7	22.5	22.5	22.5	6.7
19	2	1987	603	C7	5.7	5.6	5.6	23.	23.	23.	6.7
19	2	1987	609	D1	5.9	5.7	2.4	21.5	21.5	21.	7.
19	2	1987	612	D3	4.	4.	4.	22.	22.	22.	6.8
19	2	1987	615	D5	4.	3.9	3.9	22.	22.	22.	6.6
19	2	1987	618	D6	4.	4.	4.	22.5	22.5	22.5	6.6
19	2	1987	622	D9	5.7	5.6	5.4	22.	22.	22.	6.7
19	2	1987	934	B1	6.4	4.4	3.3	23.	22.5	22.	6.8
19	2	1987	930	C2	6.7	5.7	5.	23.	22.5	22.5	6.8
19	2	1987	939	C3	7.6	7.1	4.3	23.	22.	21.5	8.7
19	2	1987	944	C5	5.3	4.	2.9	24.	23.	22.5	6.8
19	2	1987	947	C7	6.7	6.3	5.9	24.	23.	23.	6.8
19	2	1987	954	D1	7.5	4.5	4.	23.	22.	21.5	7.6
19	2	1987	958	D3	4.8	3.4	2.9	23.5	23.	22.5	6.6
19	2	1987	1001	D5	4.7	3.9	2.9	23.5	22.5	22.	6.7
19	2	1987	1004	D6	5.5	4.3	3.5	23.5	23.	22.5	7.
19	2	1987	1009	D9	7.9	5.2	3.9	24.	22.	22.	7.2
19	2	1987	1344	B1	7.6	3.7	2.6	29.	22.5	22.	7.7
19	2	1987	1340	C2	9.4	8.9	4.5	29.	23.5	22.5	8.
19	2	1987	1350	C3	8.4	8.1	4.8	29.	22.5	22.	8.7
19	2	1987	1355	C5	7.2	6.	2.9	29.	23.5	23.	7.6
19	2	1987	1358	C7	8.2	8.	7.2	28.	24.5	23.5	7.
19	2	1987	1410	D1	9.8	6.5	4.4	28.5	22.	21.5	8.3
19	2	1987	1415	D3	7.6	5.2	2.9	28.	23.5	22.5	7.6
19	2	1987	1420	D5	6.4	5.5	3.2	28.	23.5	22.5	7.3
19	2	1987	1425	D6	7.	6.4	3.5	28.5	24.	23.	7.7
19	2	1987	1430	D9	10.4	8.4	2.9	28.5	23.	22.	8.6
19	2	1987	1803	B1	8.1	4.7	1.5	27.	23.	22.	8.3
19	2	1987	1800	C2	8.8	7.8	4.	27.	24.	22.5	8.2
19	2	1987	1810	C3	8.5	8.4	3.9	26.5	23.	21.5	8.8
19	2	1987	1813	C5	7.2	6.5	1.7	26.5	24.	22.5	7.2
19	2	1987	1816	C7	8.3	8.2	6.7	26.5	25.	23.	7.2
19	2	1987	1824	D1	9.	6.5	2.7	26.5	22.	21.	8.6
19	2	1987	1827	D3	6.5	5.	2.1	26.	24.	22.5	7.2
19	2	1987	1830	D5	6.4	5.7	2.2	26.	23.5	22.5	7.2

Table 4. Diurnal Measurements. Rwanda, Cycle I, Wet Season

----DATE------			D.O.		------OXYGEN-----			WATER TEMPERATURE			
DAY	MONTH	YEAR	TIME	POND	TOP mg/L	MID mg/L	BOT mg/L	TOP deg C	MID. deg C	BOT. deg C	pH
19	2	1987	1833	D6	6.9	5.7	2.5	26.5	24.	23.	7.2
19	2	1987	1840	D9	8.	8.	2.7	26.	23.	22.	8.3
19	2	1987	2134	B1	7.	3.9	1.5	25.	23.5	22.	7.4
19	2	1987	2130	C2	8.	7.3	2.6	25.	25.	22.5	7.3
19	2	1987	2140	C3	7.8	7.6	3.9	24.5	23.	22.	8.7
19	2	1987	2144	C5	6.1	4.	3.	25.	24.	23.	7.
19	2	1987	2148	C7	7.5	7.2	5.8	25.	24.5	23.	6.9
19	2	1987	2155	D1	8.4	5.8	1.3	24.5	23.	21.	8.5
19	2	1987	2158	D3	6.1	4.2	2.	25.	24.	22.5	6.8
19	2	1987	2202	D5	6.1	5.1	2.3	24.5	23.	22.	6.9
19	2	1987	2205	D6	6.1	5.8	2.5	25.	24.	22.5	6.8
19	2	1987	2210	D9	8.5	6.9	1.9	24.5	23.	22.	8.1
20	2	1987	135	B1	5.4	5.	1.4	23.	23.	22.	7.
20	2	1987	130	C2	6.7	6.4	2.8	23.5	23.5	23.	7.
20	2	1987	140	C3	7.4	7.1	1.6	23.	23.	21.5	8.4
20	2	1987	143	C5	4.7	4.6	3.9	23.5	23.5	23.5	6.8
20	2	1987	148	C7	6.7	6.6	5.8	23.5	23.5	23.5	6.8
20	2	1987	157	D1	7.5	6.3	0.8	23.	22.5	21.	7.7
20	2	1987	200	D3	5.5	5.2	1.7	23.	23.	22.5	6.8
20	2	1987	204	D5	5.4	5.	1.	23.	23.	22.5	6.8
20	2	1987	207	D6	5.3	5.1	1.	23.5	23.5	23.	6.7
20	2	1987	212	D9	7.5	7.	1.1	23.	23.	22.	7.5
20	2	1987	533	B1	3.7	3.7	3.6	22.	22.	22.	6.8
20	2	1987	530	C2	5.8	5.7	5.6	22.5	22.5	22.5	6.8
20	2	1987	539	C3	6.6	6.3	2.5	22.	22.	21.5	8.6
20	2	1987	542	C5	4.	4.	3.9	22.5	22.5	22.5	6.8
20	2	1987	545	C7	6.2	6.1	5.5	23.	23.	23.	6.8
20	2	1987	552	D1	6.2	5.7	0.4	21.5	21.5	21.	7.1
20	2	1987	555	D3	4.2	4.2	4.1	22.5	22.5	22.5	6.6
20	2	1987	558	D5	4.5	4.3	4.3	22.5	22.5	22.5	6.6
20	2	1987	601	D6	4.	4.	3.8	22.5	22.5	22.5	6.7
20	2	1987	606	D9	5.7	5.6	4.4	22.	22.	22.	7.

Table 5. Fish/Shrimp Stocking, Sampling and Harvest. Rwanda, Cycle I, Dry Season

----DATE------						TOTAL POPULATION W/O REPRODUCTION		------SAMPLE WEIGHT------			------SAMPLE LENGTH------			---REPRODUCTION--	
						WEIGHT	N	MEAN	N		MEAN	N		WEIGHT	N
DAY	MONTH	YEAR	POND	ACTIVITY	SPECIES	kg	number	g	number	std.dev.	cm	number	std.dev.	kg	number
26	2	1986	B1	STK	nil	17.5	600	30.	60	8.2	11.8	60	1.14	0.	0.
26	2	1986	C2	STK	nil	17.5	600	28.	60	7.	11.5	60	0.91	0.	0.
26	2	1986	C3	STK	nil	18.5	600	31.	60	6.8	11.9	60	0.9	0.	0.
26	2	1986	C5	STK	nil	17.8	600	28.	60	7.9	11.8	60	1.08	0.	0.
26	2	1986	C7	STK	nil	18.3	600	31.	60	9.	12.	60	1.11	0.	0.
26	2	1986	C8	STK	nil	18.9	600	28.	60	7.1	11.4	60	0.96	0.	0.
26	2	1986	D1	STK	nil	19.	600	28.	60	8.6	11.6	60	1.09	0.	0.
26	2	1986	D3	STK	nil	18.3	600	30.	60	9.4	11.7	60	1.29	0.	0.
26	2	1986	D5	STK	nil	17.	600	32.	60	10.2	11.9	60	1.21	0.	0.
26	2	1986	D6	STK	nil	18.4	600	31.	60	6.9	11.9	60	0.95	0.	0.
26	2	1986	D9	STK	nil	18.1	600	31.	60	6.6	11.9	60	0.87	0.	0.
26	2	1986	D10	STK	nil	19.2	600	31.	60	8.7	11.9	60	1.2	0.	0.
28	3	1986	C7	SAM	nil			40.	25	8.8	12.1	25	1.	0.	0.
28	3	1986	C8	SAM	nil			35.	25	10.1	11.4	25	1.19	0.	0.
28	3	1986	D1	SAM	nil			38.	25	11.1	11.6	25	1.19	0.	0.
28	3	1986	D3	SAM	nil			37.	25	6.6	11.5	25	0.96	0.	0.
28	3	1986	D5	SAM	nil			35.	25	10.6	11.2	25	1.09	0.	0.
28	3	1986	D6	SAM	nil			33.	25	7.3	11.2	25	0.97	0.	0.
28	3	1986	D9	SAM	nil			36.	25	9.9	11.3	25	1.28	0.	0.
28	3	1986	D10	SAM	nil			38.	25	7.5	11.8	25	0.97	0.	0.
28	3	1986	B1	SAM	nil			36.	25	9.7	12.4	25	1.38	0.	0.
28	3	1986	C2	SAM	nil			36.	25	8.5	11.6	25	0.96	0.	0.
28	3	1986	C3	SAM	nil			36.	25	9.	12.1	25	1.47	0.	0.
28	3	1986	C5	SAM	nil			37.	25	8.9	11.7	25	1.17	0.	0.
25	4	1986	B1	SAM	nil			46.	25	11.2	13.4	25	1.19	0.	0.
25	4	1986	C2	SAM	nil			41.	25	8.1	12.8	25	1.05	0.	0.
25	4	1986	C3	SAM	nil			35.	25	9.6	12.4	25	1.22	0.	0.
25	4	1986	C5	SAM	nil			38.	25	11.1	12.7	25	1.41	0.	0.
25	4	1986	D5	SAM	nil			42.	25	11.1	12.6	25	1.29	0.	0.
25	4	1986	D6	SAM	nil			40.	25	9.	12.5	25	0.96	0.	0.
25	4	1986	D9	SAM	nil			41.	25	9.7	12.6	25	1.29	0.	0.
25	4	1986	D10	SAM	nil			39.	25	6.5	12.3	25	0.8	0.	0.
25	4	1986	C7	SAM	nil			38.	25	9.	12.6	25	1.04	0.	0.
25	4	1986	C8	SAM	nil			39.	25	6.5	12.6	25	0.87	0.	0.
25	4	1986	D1	SAM	nil			37.	26	7.3	12.	26	2.14	0.	0.
25	4	1986	D3	SAM	nil			43.	25	12.3	12.8	25	1.36	0.	0.
23	5	1986	C7	SAM	nil			39.	28	6.4	12.4	28	0.96	0.	0.
23	5	1986	C8	SAM	nil			45.	27	7.6	13.3	27	1.	0.	0.
23	5	1986	D1	SAM	nil			38.	27	9.3	12.3	27	1.23	0.	0.
23	5	1986	D3	SAM	nil			44.	27	9.2	12.6	27	1.05	0.	0.
23	5	1986	B1	SAM	nil			58.	27	7.2	14.3	27	0.9	0.	0.
23	5	1986	C2	SAM	nil			46.	27	8.9	12.8	27	1.	0.	0.
23	5	1986	C3	SAM	nil			53.	27	7.7	12.7	27	0.98	0.	0.
23	5	1986	C5	SAM	nil			45.	27	9.6	12.9	27	1.29	0.	0.
23	5	1986	D5	SAM	nil			42.	27	9.8	12.6	27	1.34	0.	0.
23	5	1986	D6	SAM	nil			48.	28	9.9	13.1	28	1.15	0.	0.
23	5	1986	D9	SAM	nil			44.	27	7.1	12.8	27	0.93	0.	0.
23	5	1986	D10	SAM	nil			46.	26	8.8	12.9	26	1.05	0.	0.
20	6	1986	B1	SAM	nil			57.	27	10.5	14.2	27	1.08	0.	0.
20	6	1986	C2	SAM	nil			56.	25	9.6	14.	25	0.88	0.	0.
20	6	1986	C3	SAM	nil			52.	27	9.8	13.5	27	0.98	0.	0.
20	6	1986	C5	SAM	nil			57.	27	13.4	14.2	27	1.05	0.	0.
20	6	1986	D5	SAM	nil			42.	27	10.9	12.4	27	1.33	0.	0.

Table 5. Fish/Shrimp Stocking, Sampling and Harvest. Rwanda, Cycle I, Dry Season

----DATE------						TOTAL POPULATION W/O REPRODUCTION		------SAMPLE WEIGHT------			------SAMPLE LENGTH------			---REPRODUCTION--	
DAY	MONTH	YEAR	POND	ACTIVITY	SPECIES	WEIGHT kg	N number	MEAN g	N number	std.dev.	MEAN cm	N number	std.dev.	WEIGHT kg	N number
20	6	1986	D6	SAM	nil			42.	27	7.7	12.6	27	0.93	0.	0.
20	6	1986	D9	SAM	nil			45.	27	7.7	13.	27	1.09	0.	0.
20	6	1986	D10	SAM	nil			52.	27	10.4	13.4	27	1.22	0.	0.
20	6	1986	C7	SAM	nil			40.	27	9.9	12.1	27	1.25	0.	0.
20	6	1986	C8	SAM	nil			55.	26	7.7	13.7	26	0.76	0.	0.
20	6	1986	D1	SAM	nil			49.	26	10.1	13.2	26	1.14	0.	0.
20	6	1986	D3	SAM	nil			49.	27	8.	13.	27	0.96	0.	0.
22	7	1986	B1	HAR	nil	41.	537	77.	27	7.8	16.7	27	0.76	0.3	144.
22	7	1986	C2	HAR	nil	34.4	617	64.	27	11.7	15.4	27	1.09	0.7	292.
22	7	1986	C3	HAR	nil	38.7	585	71.	27	10.5	15.8	27	1.1	0.	14.
22	7	1986	C5	HAR	nil	37.9	569	72.	27	10.3	15.4	27	0.93	0.4	170.
22	7	1986	C7	HAR	nil	22.	560	40.	27	6.6	12.5	27	0.7	0.	2.
22	7	1986	C8	HAR	nil	27.2	483	59.	27	8.7	14.6	27	0.89	0.3	119.
22	7	1986	D1	HAR	nil	26.6	557	49.	27	6.7	13.6	27	0.84	0.5	241.
22	7	1986	D3	HAR	nil	28.7	564	51.	25	10.4	13.8	25	1.03	0.	0.
22	7	1986	D5	HAR	nil	22.	546	41.	26	7.8	12.8	26	0.9	0.1	45.
22	7	1986	D6	HAR	nil	27.2	579	50.	27	9.3	13.7	27	1.	0.	1.
22	7	1986	D9	HAR	nil	26.4	559	51.	27	8.9	14.	27	0.92	0.2	85.
22	7	1986	D10	HAR	nil	30.9	575	57.	27	12.1	14.5	27	1.12	0.1	55.

Table 5. Fish/Shrimp Stocking, Sampling and Harvest. Rwanda, Cycle I, Wet Season

----DATE------					TOTAL POPULATION W/O REPRODUCTION		------SAMPLE WEIGHT------			------SAMPLE LENGTH------			---REPRODUCTION--	
					WEIGHT	N	MEAN	N		MEAN	N		WEIGHT	N
DAY	MONTH	YEAR	POND	ACTIVITY SPECIES	kg	number	g	number	std.dev.	cm	number	std.dev.	kg	number
1	10	1986	B1	STK nil	21.7	600	44.	60	15.7	12.8	60	1.59	0.	0.
1	10	1986	C2	STK nil	20.2	600	43.	60	14.8	13.	60	1.8	0.	0.
1	10	1986	C3	STK nil	21.	600	40.	60	15.2	13.1	60	1.65	0.	0.
1	10	1986	C5	STK nil	23.2	600	43.	60	15.7	13.3	60	1.55	0.	0.
1	10	1986	C7	STK nil	22.1	600	39.	60	16.5	13.1	60	1.92	0.	0.
1	10	1986	D1	STK nil	23.2	600	39.	60	13.	13.4	60	1.52	0.	0.
1	10	1986	D3	STK nil	21.8	600	39.	60	16.2	13.4	60	1.66	0.	0.
1	10	1986	D5	STK nil	21.8	600	43.	60	16.6	13.2	60	1.6	0.	0.
1	10	1986	D6	STK nil	23.4	600	43.	60	16.1	13.1	60	1.63	0.	0.
1	10	1986	D9	STK nil	20.9	600	43.	60	19.3	13.1	60	1.45	0.	0.
3	11	1986	B1	SAM nil			45.	25	13.1	13.08	25	1.19	0.	0.
3	11	1986	C2	SAM nil			39.	25	19.9	12.36	25	1.93	0.	0.
3	11	1986	C3	SAM nil			40.	25	11.	12.4	25	1.26	0.	0.
3	11	1986	C5	SAM nil			49.	25	11.9	13.48	25	1.19	0.	0.
3	11	1986	C7	SAM nil			43.	24	15.	12.71	24	1.78	0.	0.
3	11	1986	D1	SAM nil			49.	24	18.2	13.25	24	1.67	0.	0.
3	11	1986	D3	SAM nil			50.	25	15.7	13.44	25	1.82	0.	0.
3	11	1986	D5	SAM nil			48.	25	17.9	13.24	25	1.92	0.	0.
3	11	1986	D6	SAM nil			54.	25	16.3	13.88	25	1.51	0.	0.
3	11	1986	D9	SAM nil			44.	27	17.3	12.67	27	1.78	0.	0.
1	12	1986	B1	SAM nil			67.	25	16.4	15.2	25	1.41	0.	0.
1	12	1986	C2	SAM nil			53.	25	21.	14.04	25	1.86	0.	0.
1	12	1986	C3	SAM nil			53.	25	13.3	13.76	25	1.36	0.	0.
1	12	1986	C5	SAM nil			60.	25	16.	14.32	25	1.53	0.	0.
1	12	1986	C7	SAM nil			50.	25	17.3	13.44	25	1.62	0.	0.
1	12	1986	D1	SAM nil			56.	25	10.8	14.24	25	1.2	0.	0.
1	12	1986	D3	SAM nil			43.	25	15.1	12.8	25	1.73	0.	0.
1	12	1986	D5	SAM nil			50.	25	17.2	13.4	25	1.71	0.	0.
1	12	1986	D6	SAM nil			44.	25	12.7	12.72	25	1.34	0.	0.
1	12	1986	D9	SAM nil			48.	25	9.7	13.12	25	1.05	0.	0.
31	12	1986	B1	SAM nil			76.	25	16.8	15.76	25	1.48	0.	0.
31	12	1986	C2	SAM nil			54.	24	15.3	13.88	24	1.62	0.	7.
31	12	1986	C3	SAM nil			61.	25	15.6	14.32	25	1.49	0.	0.
31	12	1986	C5	SAM nil			63.	25	14.3	14.48	25	1.33	0.	12.
31	12	1986	C7	SAM nil			55.	25	15.8	13.4	25	1.47	0.	33.
31	12	1986	D1	SAM nil			57.	25	13.9	14.08	25	1.5	0.1	59.
31	12	1986	D3	SAM nil			46.	25	16.5	13.	25	1.58	0.	1.
31	12	1986	D5	SAM nil			47.	25	14.9	13.32	25	1.6	0.	14.
31	12	1986	D6	SAM nil			49.	25	12.3	13.52	25	1.23	0.	0.
31	12	1986	D9	SAM nil			53.	25	14.7	13.68	25	1.35	0.	1.
29	1	1987	B1	SAM nil			85.	25	15.1	16.52	25	1.12	0.6	103.
29	1	1987	C2	SAM nil			63.	25	17.8	14.72	25	1.37	0.	0.
29	1	1987	C3	SAM nil			65.	25	12.2	15.	25	1.	0.	0.
29	1	1987	C5	SAM nil			75.	25	14.8	15.64	25	1.29	0.5	129.
29	1	1987	C7	SAM nil			54.	25	15.1	13.76	25	1.4	0.1	45.
29	1	1987	D1	SAM nil			65.	25	16.9	14.92	25	1.41	0.6	152.
29	1	1987	D3	SAM nil			55.	25	20.5	13.92	25	1.8	0.	7.
29	1	1987	D5	SAM nil			56.	25	16.2	14.	25	1.5	0.7	159.
29	1	1987	D6	SAM nil			54.	25	12.4	13.8	25	1.12	0.	0.
29	1	1987	D9	SAM nil			67.	25	17.7	15.12	25	1.56	0.4	100.
25	2	1987	B1	SAM nil			90.	25	16.1	16.84	25	1.28	0.	0.
25	2	1987	C2	SAM nil			72.	25	9.9	15.4	25	0.87	0.2	15.
25	2	1987	C3	SAM nil			60.	25	14.6	14.64	25	1.15	0.	0.

Table 5. Fish/Shrimp Stocking, Sampling and Harvest. Rwanda, Cycle I, Wet Season

----DATE------					TOTAL POPULATION W/O REPRODUCTION		------SAMPLE WEIGHT------			------SAMPLE LENGTH------			---REPRODUCTION--	
DAY	MONTH	YEAR	POND	ACTIVITY	SPECIES	WEIGHT kg	N number	MEAN g	N number	std.dev.	MEAN cm	N number	std.dev.	WEIGHT kg	N number
25	2	1987	C5	SAM	nil			80.	25	21.6	15.96	25	1.37	1.	228.
25	2	1987	C7	SAM	nil			56.	25	14.4	14.	25	1.29	0.5	107.
25	2	1987	D1	SAM	nil			76.	25	14.3	15.08	26	3.32	0.8	195.
25	2	1987	D3	SAM	nil			55.	25	20.3	14.04	25	1.81	0.1	21.
25	2	1987	D5	SAM	nil			60.	25	17.6	14.36	25	1.58	0.2	33.
25	2	1987	D6	SAM	nil			58.	25	13.7	14.24	25	1.27	0.2	66.
25	2	1987	D9	SAM	nil			75.	25	11.6	15.6	25	1.	0.	19.
26	2	1987	B1	HAR	nil	52.5	577							0.	7.
26	2	1987	C2	HAR	nil	42.1	570							0.6	116.
26	2	1987	C3	HAR	nil	32.7	554							0.	47.
26	2	1987	C5	HAR	nil	42.	548							1.6	341.
26	2	1987	C7	HAR	nil	33.3	552							0.2	87.
26	2	1987	D1	HAR	nil	42.6	556							2.3	601.
26	2	1987	D3	HAR	nil	32.2	579							0.3	43.
26	2	1987	D5	HAR	nil	32.9	568							0.8	145.
26	2	1987	D6	HAR	nil	34.2	572							0.3	88.
26	2	1987	D9	HAR	nil	38.1	541							0.5	218.

Table 6. Plankton and Benthos. Rwanda, Cycle I, Dry Season

---DATE---				NET PRIMARY PRODUCTION
DAY	MONTH	YEAR	POND	mg C/m3/d
24	3	1986	B1	395.
24	3	1986	C2	0.
24	3	1986	C3	463.
24	3	1986	C5	620.
24	3	1986	C7	386.
24	3	1986	C8	308.
24	3	1986	D1	231.
24	3	1986	D3	698.
24	3	1986	D5	236.
24	3	1986	D6	397.
24	3	1986	D9	629.
24	3	1986	D10	476.
24	4	1986	B1	461.
24	4	1986	C2	497.
24	4	1986	C3	398.
24	4	1986	C5	594.
24	4	1986	C7	447.
24	4	1986	C8	415.
24	4	1986	D1	530.
24	4	1986	D3	535.
24	4	1986	D5	543.
24	4	1986	D6	431.
24	4	1986	D9	493.
24	4	1986	D10	657.
22	5	1986	B1	437.
22	5	1986	C2	574.
22	5	1986	C3	405.
22	5	1986	C5	679.
22	5	1986	C7	446.
22	5	1986	C8	592.
22	5	1986	D1	460.
22	5	1986	D3	529.
22	5	1986	D5	452.
22	5	1986	D6	409.
22	5	1986	D9	348.
22	5	1986	D10	204.
19	6	1986	B1	1418.
19	6	1986	C2	1467.
19	6	1986	C3	1366.
19	6	1986	C5	1675.
19	6	1986	C7	640.
19	6	1986	C8	579.
19	6	1986	D1	775.
19	6	1986	D3	1232.
19	6	1986	D5	1044.
19	6	1986	D6	0.
19	6	1986	D9	681.
19	6	1986	D10	1388.
17	7	1986	B1	886.
17	7	1986	C2	1568.
17	7	1986	C3	823.
17	7	1986	C5	599.
17	7	1986	C7	609.
17	7	1986	C8	940.
17	7	1986	D1	770.
17	7	1986	D3	1026.
17	7	1986	D5	685.
17	7	1986	D6	998.
17	7	1986	D9	1086.
17	7	1986	D10	1313.

Table 6. Plankton and Benthos. Rwanda, Cycle I, Wet Season

----DATE------				NET PROD'N mg C/	RELATIVE PHYTOPLANKTON ABUNDANCE				RELATIVE ZOOPLANKTON ABUNDANCE			
DAY	MONTH	YEAR	POND	m3/d	BLUE-GREEN	GREEN	DIATOM	OTHER PHYTO.	ROTI-FERA	CLADO-CERA	COPE-PODA	OTHER ZOOPL.
12	12	1986	B1		3	2	2	2	2	2	2	2
12	12	1986	C2		3	3	3	2	2	2	1	2
12	12	1986	C3		2	3	1	1	2	2	2	1
12	12	1986	C5		3	2	2	1	2	2	2	2
12	12	1986	C7		3	3	3	2	2	1	1	2
12	12	1986	D1		3	2	3	1	1	1	1	2
12	12	1986	D3		3	2	2	1	2	1	2	2
12	12	1986	D5		3	3	3	2	2	1	1	2
12	12	1986	D6		2	3	3	3	1	2	1	2
12	12	1986	D9		3	2	2	1	2	1	2	2
24	12	1986	B1	932.								
24	12	1986	C2	1483.								
24	12	1986	C3	965.								
24	12	1986	C5	986.								
24	12	1986	C7	645.								
24	12	1986	D1	437.								
24	12	1986	D3	774.								
24	12	1986	D5	924.								
24	12	1986	D6	1020.								
24	12	1986	D9	1101.								
30	12	1986	B1		3	1	2	1	2	2	1	2
30	12	1986	C2		3	3	3	2	2	1	2	1
30	12	1986	C3		3	3	2	1	2	1	1	1
30	12	1986	C5		3	1	3	1	2	1	2	2
30	12	1986	C7		3	2	3	1	2	2	1	2
30	12	1986	D1		3	2	3	1	1	1	1	2
30	12	1986	D3		3	2	3	1	2	1	2	2
30	12	1986	D5		3	2	3	1	2	2	2	2
30	12	1986	D6		3	2	3	3	1	2	2	2
30	12	1986	D9		3	3	3	2	2	2	2	2
8	1	1987	B1		3	2	2	2	2	2	2	2
8	1	1987	C2		3	2	3	2	2	2	1	1
8	1	1987	C3		3	3	2	1	2	2	2	1
8	1	1987	C5		3	2	2	1	2	1	2	2
8	1	1987	C7		3	2	2	1	2	2	1	2
8	1	1987	D1		3	2	2	1	2	1	1	2
8	1	1987	D3		3	2	3	1	3	2	2	2
8	1	1987	D5		3	2	3	1	2	2	2	2
8	1	1987	D6		3	1	3	2	2	2	2	2
8	1	1987	D9		3	2	2	1	2	2	2	2
23	1	1987	B1	94.								
23	1	1987	C2	351.								
23	1	1987	C3	213.								
23	1	1987	C5	767.								
23	1	1987	C7	447.								
23	1	1987	D1	178.								
23	1	1987	D3	372.								
23	1	1987	D5	262.								
23	1	1987	D6	336.								
23	1	1987	D9	345.								
28	1	1987	B1		3	2	2	1	2	2	1	2
28	1	1987	C2		3	2	3	1	2	1	1	2
28	1	1987	C3		3	3	1	1	2	2	1	1

Table 6. Plankton and Benthos. Rwanda, Cycle I, Wet Season

----DATE------				NET PROD'N mg C/	----------RELATIVE-------- PHYTOPLANKTON ABUNDANCE				----------RELATIVE--------- ZOOPLANKTON ABUNDANCE			
DAY	MONTH	YEAR	POND	m3/d	BLUE-GREEN	GREEN	DIATOM	OTHER PHYTO.	ROTI-FERA	CLADO-CERA	COPE-PODA	OTHER ZOOPL.
28	1	1987	C5		3	2	1	1	2	2	2	2
28	1	1987	C7		3	2	3	1	2	2	1	2
28	1	1987	D1		3	2	2	1	2	1	1	2
28	1	1987	D3		3	1	2	1	2	1	2	2
28	1	1987	D5		3	1	2	1	2	2	2	2
28	1	1987	D6		3	1	2	1	2	2	1	2
28	1	1987	D9		3	2	2	1	2	1	2	2
6	2	1987	B1		3	2	2	1	1	2	1	2
6	2	1987	C2		3	3	3	1	2	1	1	2
6	2	1987	C3		3	2	2	1	2	2	1	1
6	2	1987	C5		3	2	2	1	2	2	2	2
6	2	1987	C7		3	2	2	1	1	2	1	2
6	2	1987	D1		3	3	3	1	2	1	1	2
6	2	1987	D3		3	2	2	1	2	1	1	2
6	2	1987	D5		3	2	2	2	2	1	1	2
6	2	1987	D6		3	2	2	1	1	1	1	2
6	2	1987	D9		3	2	2	2	2	1	1	2
20	2	1987	B1	908.								
20	2	1987	C2	842.								
20	2	1987	C3	628.								
20	2	1987	C5	736.								
20	2	1987	C7	648.								
20	2	1987	D1	654.								
20	2	1987	D3	572.								
20	2	1987	D5	841.								
20	2	1987	D6	526.								
20	2	1987	D9	556.								
24	2	1987	B1		3	2	2	2	1	1	2	1
24	2	1987	C2		3	2	3	1	2	2	1	1
24	2	1987	C3		3	3	2	1	2	2	2	1
24	2	1987	C5		3	2	2	1	1	2	2	2
24	2	1987	C7		3	3	3	1	2	2	2	2
24	2	1987	D1		3	2	3	1	2	1	1	2
24	2	1987	D3		3	2	2	1	2	1	2	2
24	2	1987	D5		3	3	2	2	2	2	1	2
24	2	1987	D6		3	3	3	1	2	1	1	2
24	2	1987	D9		3	2	3	1	2	1	2	2

Table 7. Water Quality Measurements at Start and End of Each Experiment. Rwanda, Cycle I, Dry Season

DATE				ALKA-LINITY	HARDNESS					ORTHO
DAY	MONTH	YEAR	POND	mg/L CaCO3	mg/L CaCO3	pH	NH3-N mg/L	NO3-N mg/L	TOTAL-P mg/L	PO4-P mg/L
21	2	1986	B1	61.	71.	7.5	0.07	0.07	0.04	0.
21	2	1986	C2	79.	89.	7.7	0.35	0.07	0.06	0.
21	2	1986	C3	56.	80.	8.7	0.22	0.13	0.05	0.01
21	2	1986	C5	80.	108.	8.2	0.24	0.05	0.04	0.01
21	2	1986	C7	75.	92.	7.8	0.06	0.04	0.02	0.02
21	2	1986	C8	66.	77.	8.3	0.69	0.04	0.05	0.01
21	2	1986	D1	56.	66.	7.4	0.29	0.12	0.06	0.01
21	2	1986	D3	79.	89.	7.3	0.36	0.04	0.03	0.01
21	2	1986	D5	75.	84.	7.2	0.24	0.06	0.02	0.01
21	2	1986	D6	79.	95.	7.3	0.23	0.07	0.03	0.01
21	2	1986	D9	71.	90.	7.5	0.25	0.04	0.03	0.01
21	2	1986	D10	75.	81.	7.4	0.63	0.07	0.03	0.01
24	7	1986	B1	19.	51.	9.8	0.12	0.3	0.28	0.04
24	7	1986	C2	26.	38.	7.5	0.09	0.23	0.22	0.02
24	7	1986	C3	34.	96.	8.3	0.08	0.04	0.27	0.04
24	7	1986	C5	25.	64.	7.6	0.17	0.07	0.27	0.02
24	7	1986	C7	27.	70.	7.2	0.05	0.03	0.16	0.02
24	7	1986	C8	24.	51.	9.3	0.04	0.09	0.19	0.02
24	7	1986	D1	37.	77.	7.4	0.04	0.07	0.15	0.02
24	7	1986	D3	48.	102.	7.4	0.03	0.08	0.1	0.01
24	7	1986	D5	47.	96.	7.	0.04	0.11	0.12	0.01
24	7	1986	D6	45.	77.	7.2	0.04	0.04	0.14	0.02
24	7	1986	D9	33.	70.	6.9	0.03	0.03	0.14	0.02
24	7	1986	D10	33.	64.	7.2	0.03	0.02	0.12	0.01

Table 7. Water Quality Measurements at Start and End of Each Experiment. Rwanda, Cycle I, Wet Season

DATE				ALKA-LINITY	HARDNESS					ORTHO
DAY	MONTH	YEAR	POND	mg/L CaCO3	mg/L CaCO3	pH	NH3-N mg/L	NO3-N mg/L	TOTAL-P mg/L	PO4-P mg/L
3	10	1986	B1	20.	51.	6.7	0.12	0.89	0.11	0.03
3	10	1986	C2	16.	51.	6.7	0.12	0.73	0.07	0.02
3	10	1986	C3	23.	70.	6.9	0.09	0.65	0.08	0.03
3	10	1986	C5	22.	70.	6.8	0.06	0.2	0.07	0.02
3	10	1986	C7	17.	70.	6.7	0.03	0.12	0.07	0.02
3	10	1986	D1	27.	64.	6.8	0.11	0.57	0.06	0.03
3	10	1986	D3	21.	38.	6.7	0.09	0.09	0.05	0.02
3	10	1986	D5	16.	45.	6.3	0.27	0.21	0.06	0.02
3	10	1986	D6	27.	70.	6.5	0.18	0.15	0.08	0.02
3	10	1986	D9	18.	58.	6.6	0.09	0.46	0.14	0.02
25	2	1987	B1	22.	58.	6.9	0.16	0.16	0.25	0.02
25	2	1987	C2	23.	45.	6.9	0.1	0.11	0.19	0.01
25	2	1987	C3	30.	58.	8.2	0.08	0.12	0.26	0.1
25	2	1987	C5	39.	58.	6.7	0.09	0.13	0.18	0.01
25	2	1987	C7	29.	64.	6.7	0.08	0.12	0.11	0.01
25	2	1987	D1		58.	7.8	0.13	0.21	0.28	0.03
25	2	1987	D3	37.	64.	6.7	0.06	0.09	0.15	0.01
25	2	1987	D5	33.	64.	6.6	0.08	0.09	0.18	0.01
25	2	1987	D6	30.	58.	6.7	0.09	0.09	0.19	0.02
25	2	1987	D9	24.	58.	7.	0.08	0.12	0.28	0.02

Table 8. Pond Soil Characteristics. Rwanda, Cycle I, Dry Season

-----DATE----- DAY	MONTH	YEAR	POND	CLAY %	SILT %	SAND %	ORG. MATTER %	pH wet	P ppm	Ca meq/ 100 g	Mg meq/ 100 g	K ppm	Na meq/ 100 g	TOTAL N %	C.E.C. meq/ 100 g	Al ppm	Fe ppm	EXCH-H meq/ 100 g
24	12	1985	B1	46.8	16.1	37.1	2.9	4.4	3.	3.3	0.8	39.	0.1	0.05	30.	108.	8000.	1.
24	12	1985	C2	37.8	16.9	45.3	7.6	4.2	1.	1.5	0.4	27.	0.1	0.03	24.	238.	5000.	1.1
24	12	1985	C3	29.2	9.5	61.3	0.5	4.3	0.	1.	0.4	23.	0.	0.03	14.	114.	1900.	0.2
24	12	1985	C5	43.2	23.3	33.5	5.9	4.	0.	2.9	0.8	51.	0.1	0.03	39.	193.	3500.	1.5
24	12	1985	C7	49.2	10.3	40.5	2.4	4.1	2.	2.	0.6	23.	0.07	0.05	29.	263.	400.	1.4
24	12	1985	C8	55.8	16.	28.2	1.4	4.1	2.	1.3	0.6	31.	0.1	0.05	21.	182.	300.	1.
24	12	1985	D1	38.2	10.6	51.2	1.	4.3	2.	1.3	0.5	31.	0.	0.03	18.	137.	300.	0.9
24	12	1985	D10	35.7	17.1	47.2	1.6	4.1	2.	1.1	0.4	23.	0.1	0.05	25.	252.	1000.	0.7
24	12	1985	D3	39.2	17.5	43.3	3.6	3.9	2.	1.8	0.5	23.	0.1	0.05	27.	249.	400.	1.3
24	12	1985	D5	43.8	16.2	40.	3.1	4.1	1.	2.4	0.7	27.	0.1	0.03	23.	177.	9000.	1.1
24	12	1985	D6	30.9	16.5	52.6	1.	4.3	0.	1.2	0.5	23.	0.	0.03	15.	150.	800.	0.7
24	12	1985	D9	39.2	14.6	46.2	1.9	4.2	0.	1.1	0.5	20.	0.	0.01	22.	270.	300.	1.5
29	4	1987	B1	46.7	18.	35.3	1.	4.5	2.	4.8	2.5	0.15	0.1	0.41	28.	0.92	1.	1.2
29	4	1987	C2	46.3	11.1	42.6	1.2	4.2	16.	2.4	0.9	0.08	0.1	0.35	19.	1.4	0.6	0.5
29	4	1987	C3	34.2	7.7	58.1	0.6	4.7	2.	1.8	1.	0.07	0.1	0.15	9.	0.82	1.	1.9
29	4	1987	C5	57.1	16.4	26.5	1.7	4.1	4.	5.1	2.5	0.12	0.1	0.53	11.	0.92	0.44	0.6
29	4	1987	C7	52.6	8.	39.4	1.5	4.	5.	2.4	1.1	0.06	0.1	0.31	23.	1.9	0.5	0.9
29	4	1987	D1	40.4	9.9	52.7	1.1	4.2	16.	3.5	1.4	0.15	0.1	0.27	20.	2.2	0.41	0.
29	4	1987	D3	50.2	10.5	39.3	2.7	4.	14.	3.5	1.4	0.07	0.1	0.43	27.	1.07	0.55	0.1
29	4	1987	D5	37.1	13.9	49.	1.5	4.	10.	3.1	1.6	0.07	0.1	0.29	19.	0.6	0.75	2.
29	4	1987	D6	33.7	13.8	52.5	0.8	4.3	14.	1.4	1.1	0.04	0.1	0.25	11.	1.87	1.	0.9
29	4	1987	D9	43.3	11.2	45.5	1.1	4.	2.	2.1	1.6	0.07	0.1	0.27	25.	1.05	0.41	2.1

Table 8. Pond Soil Characteristics. Rwanda, Cycle I, Wet Season

-----DATE----- DAY	MONTH	YEAR	POND	CLAY %	SILT %	SAND %	ORG. MATTER %	pH wet	P ppm	Ca meq/ 100 g	Mg meq/ 100 g	K ppm	Na meq/ 100 g	TOTAL N %	C.E.C. meq/ 100 g	Al ppm	Fe ppm	EXCH-H meq/ 100 g
27	8	1986	B1	46.5	19.6	33.9	2.1	4.5	5.	3.8	1.9	43.	0.	0.35	22.	60.	9000.	1.2
27	8	1986	C2	39.6	13.5	46.9	1.9	4.1	6.	2.	0.9	27.	0.	0.37	20.	180.	5000.	1.3
27	8	1986	C3	29.2	6.5	64.3	0.9	4.2	7.	1.3	1.1	27.	0.	0.13	10.	81.	6900.	0.1
27	8	1986	C5	57.2	15.6	27.2	2.8	4.	2.	3.8	2.3	59.	0.1	0.51	4.	146.	6500.	1.6
27	8	1986	C7	43.9	11.4	44.7	1.4	4.	5.	2.3	1.3	20.	0.	0.17	22.	15.	2000.	0.4
27	8	1986	C8	38.9	8.5	52.6	1.4	4.1	18.	4.	2.4	51.	0.1	0.57	30.	122.	3100.	0.4
27	8	1986	D1	34.3	9.5	56.2	3.3	4.3	18.	1.6	1.3	35.	0.1	0.09	19.	121.	2000.	0.9
27	8	1986	D10	39.2	17.4	43.4	2.6	4.2	10.	1.4	1.2	23.	0.1	0.29	18.	146.	6500.	1.2
27	8	1986	D3	50.4	10.6	39.	2.4	3.8	10.	2.1	1.4	27.	0.1	0.31	23.	182.	2000.	1.2
27	8	1986	D5	37.9	17.5	44.6	1.6	4.2	4.	2.3	1.3	35.	0.1	0.33	21.	121.	6500.	0.9
27	8	1986	D6	32.6	14.	53.4	1.	4.4	13.	1.2	1.	23.	0.	0.17	12.	117.	4000.	1.
27	8	1986	D9	42.7	12.9	44.4	1.2	4.2	5.	1.7	1.	23.	0.	0.23	15.	182.	2000.	1.9

Table 9. Pond Morphometrics. Rwanda, Cycle I

----DATE------				DEPTH=10 cm		DEPTH=20 cm		DEPTH=30 cm		DEPTH=40 cm		DEPTH=50 cm		DEPTH=60 cm		DEPTH=70 cm		DEPTH=80 cm		DEPTH=90 cm		DEPTH=100 cm		DEPTH=110 cm		DEPTH=120 cm		DEPTH=130 cm	
DAY	MONTH	YEAR	POND	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3	AREA m2	VOLUME m3
27	12	1985	C1	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
27	12	1985	C4	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
27	12	1985	C6	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
27	12	1985	C9	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
27	12	1985	D2	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
27	12	1985	D4	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
27	12	1985	D7	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
27	12	1985	D8	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
27	12	1985	D11	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	B1	22.	1.	83.	6.	86.	14.	197.	28.	462.	61.	512.	110.	534.	162.	556.	217.	578.	274.	600.	333.	623.	394.	646.	457.	671.	523.
26	2	1986	C2	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	C3	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	C5	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	C7	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	C8	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	D1	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	D3	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	D5	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	D6	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	D9	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.
26	2	1986	D10	24.	1.	87.	7.	90.	16.	177.	29.	332.	54.	486.	95.	557.	147.	579.	204.	601.	263.	623.	324.	645.	387.	667.	453.	698.	521.

Table 10. Analysis of Nutrients and Lime. Rwanda, Cycle I, Dry Season

-----DATE-------			NUTRIENT	DRY	----COMPOSITION AS % DRY MATTER----			
DAY	MONTH	YEAR	TYPE	MATTER %	N	P	K	ORGANIC CARBON
26	2	1986	TSP	97.5	0.	46.	0.	0.

Table 10. Analysis of Nutrients and Lime. Rwanda, Cycle I, Wet Season

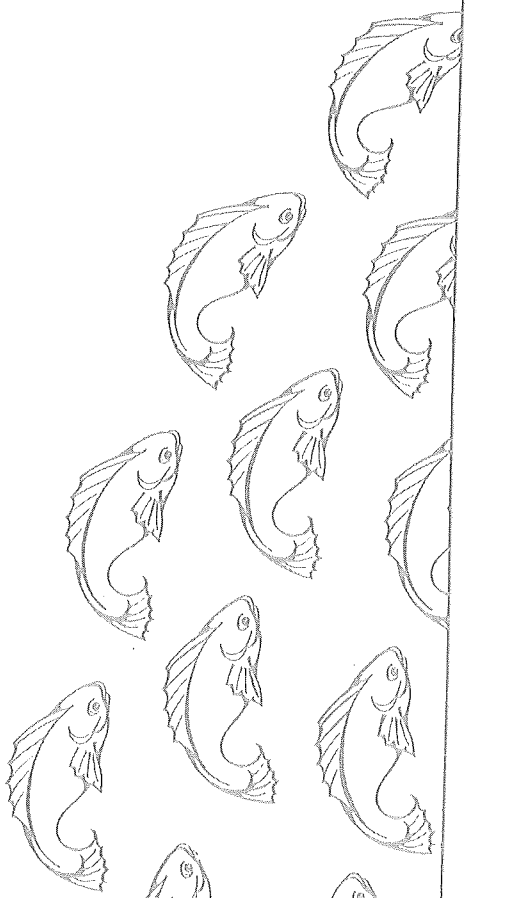
-----DATE-------			NUTRIENT	DRY	----COMPOSITION AS % DRY MATTER----			
DAY	MONTH	YEAR	TYPE	MATTER %	N	P	K	ORGANIC CARBON
3	10	1986	TSP	97.5	0.	46.	0.	0.

Table 11. Nutrient and Lime Inputs. Rwanda, Cycle I, Dry Season

DATE				INORGANIC INPUTS	
DAY	MONTH	YEAR	POND	TYPE	QUANTITY
7	3	1986	B1	TSP	4.
7	3	1986	C2	TSP	4.
7	3	1986	C3	TSP	4.
7	3	1986	C5	TSP	4.
7	3	1986	C7	TSP	4.
7	3	1986	D1	TSP	4.
7	3	1986	D3	TSP	4.
7	3	1986	D5	TSP	4.
7	3	1986	D6	TSP	4.
7	3	1986	D9	TSP	4.
21	3	1986	B1	TSP	4.
21	3	1986	C2	TSP	4.
21	3	1986	C3	TSP	4.
21	3	1986	C5	TSP	4.
21	3	1986	C7	TSP	4.
21	3	1986	D1	TSP	4.
21	3	1986	D3	TSP	4.
21	3	1986	D5	TSP	4.
21	3	1986	D6	TSP	4.
21	3	1986	D9	TSP	4.
4	4	1986	B1	TSP	4.
4	4	1986	C2	TSP	4.
4	4	1986	C3	TSP	4.
4	4	1986	C5	TSP	4.
4	4	1986	C7	TSP	4.
4	4	1986	D1	TSP	4.
4	4	1986	D3	TSP	4.
4	4	1986	D5	TSP	4.
4	4	1986	D6	TSP	4.
4	4	1986	D9	TSP	4.
18	4	1986	B1	TSP	4.
18	4	1986	C2	TSP	4.
18	4	1986	C3	TSP	4.
18	4	1986	C5	TSP	4.
18	4	1986	C7	TSP	4.
18	4	1986	D1	TSP	4.
18	4	1986	D3	TSP	4.
18	4	1986	D5	TSP	4.
18	4	1986	D6	TSP	4.
18	4	1986	D9	TSP	4.
2	5	1986	B1	TSP	4.
2	5	1986	C2	TSP	4.
2	5	1986	C3	TSP	4.
2	5	1986	C5	TSP	4.
2	5	1986	C7	TSP	4.
2	5	1986	D1	TSP	4.
2	5	1986	D3	TSP	4.
2	5	1986	D5	TSP	4.
2	5	1986	D6	TSP	4.
2	5	1986	D9	TSP	4.
16	5	1986	B1	TSP	4.
16	5	1986	C2	TSP	4.
16	5	1986	C3	TSP	4.
16	5	1986	C5	TSP	4.
16	5	1986	C7	TSP	4.
16	5	1986	D1	TSP	4.
16	5	1986	D3	TSP	4.
16	5	1986	D5	TSP	4.
16	5	1986	D6	TSP	4.
16	5	1986	D9	TSP	4.
30	5	1986	B1	TSP	4.
30	5	1986	C2	TSP	4.
30	5	1986	C3	TSP	4.
30	5	1986	C5	TSP	4.
30	5	1986	C7	TSP	4.
30	5	1986	D1	TSP	4.
30	5	1986	D3	TSP	4.
30	5	1986	D5	TSP	4.
30	5	1986	D6	TSP	4.
30	5	1986	D9	TSP	4.
13	6	1986	B1	TSP	4.
13	6	1986	C2	TSP	4.
13	6	1986	C3	TSP	4.
13	6	1986	C5	TSP	4.
13	6	1986	C7	TSP	4.
13	6	1986	D1	TSP	4.
13	6	1986	D3	TSP	4.
13	6	1986	D5	TSP	4.
13	6	1986	D6	TSP	4.
13	6	1986	D9	TSP	4.
27	6	1986	B1	TSP	4.
27	6	1986	C2	TSP	4.
27	6	1986	C3	TSP	4.
27	6	1986	C5	TSP	4.
27	6	1986	C7	TSP	4.
27	6	1986	D1	TSP	4.
27	6	1986	D3	TSP	4.
27	6	1986	D5	TSP	4.
27	6	1986	D6	TSP	4.
27	6	1986	D9	TSP	4.
11	7	1986	B1	TSP	4.
11	7	1986	C2	TSP	4.
11	7	1986	C3	TSP	4.
11	7	1986	C5	TSP	4.
11	7	1986	C7	TSP	4.
11	7	1986	D1	TSP	4.
11	7	1986	D3	TSP	4.
11	7	1986	D5	TSP	4.
11	7	1986	D6	TSP	4.
11	7	1986	D9	TSP	4.

Table 10. Analysis of Nutrients and Lime. Rwanda, Cycle I, Wet Season

DATE				INORGANIC INPUTS	
DAY	MONTH	YEAR	POND	TYPE	QUANTITY
17	10	1986	B1	TSP	4.
17	10	1986	C2	TSP	4.
17	10	1986	C3	TSP	4.
17	10	1986	C5	TSP	4.
17	10	1986	C7	TSP	4.
17	10	1986	C8	TSP	4.
17	10	1986	D1	TSP	4.
17	10	1986	D3	TSP	4.
17	10	1986	D5	TSP	4.
17	10	1986	D6	TSP	4.
17	10	1986	D9	TSP	4.
17	10	1986	D10	TSP	4.
31	10	1986	B1	TSP	4.
31	10	1986	C2	TSP	4.
31	10	1986	C3	TSP	4.
31	10	1986	C5	TSP	4.
31	10	1986	C7	TSP	4.
31	10	1986	C8	TSP	4.
31	10	1986	D1	TSP	4.
31	10	1986	D3	TSP	4.
31	10	1986	D5	TSP	4.
31	10	1986	D6	TSP	4.
31	10	1986	D9	TSP	4.
31	10	1986	D10	TSP	4.
14	11	1986	B1	TSP	4.
14	11	1986	C2	TSP	4.
14	11	1986	C3	TSP	4.
14	11	1986	C5	TSP	4.
14	11	1986	C7	TSP	4.
14	11	1986	C8	TSP	4.
14	11	1986	D1	TSP	4.
14	11	1986	D3	TSP	4.
14	11	1986	D5	TSP	4.
14	11	1986	D6	TSP	4.
14	11	1986	D9	TSP	4.
14	11	1986	D10	TSP	4.
28	11	1986	B1	TSP	4.
28	11	1986	C2	TSP	4.
28	11	1986	C3	TSP	4.
28	11	1986	C5	TSP	4.
28	11	1986	C7	TSP	4.
28	11	1986	C8	TSP	4.
28	11	1986	D1	TSP	4.
28	11	1986	D3	TSP	4.
28	11	1986	D5	TSP	4.
28	11	1986	D6	TSP	4.
28	11	1986	D9	TSP	4.
28	11	1986	D10	TSP	4.
12	12	1986	B1	TSP	4.
12	12	1986	C2	TSP	4.
12	12	1986	C3	TSP	4.
12	12	1986	C5	TSP	4.
12	12	1986	C7	TSP	4.
12	12	1986	C8	TSP	4.
12	12	1986	D1	TSP	4.
12	12	1986	D3	TSP	4.
12	12	1986	D5	TSP	4.
12	12	1986	D6	TSP	4.
12	12	1986	D9	TSP	4.
12	12	1986	D10	TSP	4.
26	12	1986	B1	TSP	4.
26	12	1986	C2	TSP	4.
26	12	1986	C3	TSP	4.
26	12	1986	C5	TSP	4.
26	12	1986	C7	TSP	4.
26	12	1986	C8	TSP	4.
26	12	1986	D1	TSP	4.
26	12	1986	D3	TSP	4.
26	12	1986	D5	TSP	4.
26	12	1986	D6	TSP	4.
26	12	1986	D9	TSP	4.
26	12	1986	D10	TSP	4.
9	1	1987	B1	TSP	4.
9	1	1987	C2	TSP	4.
9	1	1987	C3	TSP	4.
9	1	1987	C5	TSP	4.
9	1	1987	C7	TSP	4.
9	1	1987	C8	TSP	4.
9	1	1987	D1	TSP	4.
9	1	1987	D3	TSP	4.
9	1	1987	D5	TSP	4.
9	1	1987	D6	TSP	4.
9	1	1987	D9	TSP	4.
9	1	1987	D10	TSP	4.
23	1	1987	B1	TSP	4.
23	1	1987	C2	TSP	4.
23	1	1987	C3	TSP	4.
23	1	1987	C5	TSP	4.
23	1	1987	C7	TSP	4.
23	1	1987	C8	TSP	4.
23	1	1987	D1	TSP	4.
23	1	1987	D3	TSP	4.
23	1	1987	D5	TSP	4.
23	1	1987	D6	TSP	4.
23	1	1987	D9	TSP	4.
23	1	1987	D10	TSP	4.
6	2	1987	B1	TSP	4.
6	2	1987	C2	TSP	4.
6	2	1987	C3	TSP	4.
6	2	1987	C5	TSP	4.
6	2	1987	C7	TSP	4.
6	2	1987	C8	TSP	4.
6	2	1987	D1	TSP	4.
6	2	1987	D3	TSP	4.
6	2	1987	D5	TSP	4.
6	2	1987	D6	TSP	4.
6	2	1987	D9	TSP	4.
6	2	1987	D10	TSP	4.

Table 10. Analysis of Nutrients and Lime. Rwanda, Cycle I, Wet Season

DATE				INORGANIC INPUTS	
DAY	MONTH	YEAR	POND	TYPE	QUANTITY
20	2	1987	B1	TSP	4.
20	2	1987	C2	TSP	4.
20	2	1987	C3	TSP	4.
20	2	1987	C5	TSP	4.
20	2	1987	C7	TSP	4.
20	2	1987	C8	TSP	4.
20	2	1987	D1	TSP	4.
20	2	1987	D3	TSP	4.
20	2	1987	D5	TSP	4.
20	2	1987	D6	TSP	4.
20	2	1987	D9	TSP	4.
20	2	1987	D10	TSP	4.