

# LOS CUSINGOS

## COSTA RICA

### REFUGIO DE ALEXANDER SKUTCH

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#### PROJECT OBJECTIVES:

THE LOS CUSINGOS BIRD SANCTUARY OR REFUGIO DE AVES LOS CUSINGOS IS ONE OF THE LARGEST BIOLOGICAL SANCTUARIES FOR BIRDS IN COSTA RICA. STARTED

BY THE LATE DR. ALEXANDER SKUTCH, THIS PLOT OF LAND WAS PURCHASED IN 1941 TO BE USED AS A LABORATORY TO STUDY PLANT LIFE. SKUTCH SOON LEARNED THAT HE WAS EMBARKING ON A DIFFERENT PATH WHEN HE DECIDED TO PUT HIS EFFORTS INTO STUDYING THE ALMOST 900 DIFFERENT SPECIES OF BIRDS THAT LIVED IN THE NEOTROPICAL REGION OF COSTA RICA. AFTER HIS DEATH IN 2004, THE REFUGE IS PART OF COSTA RICA'S SYSTEM OF NATIONAL AND PROTECTED PARKS THAT MAKES UP ALMOST HALF OF THE COUNTRY.

HERE THE PUBLIC CAN COME AND SEE WHERE SKUTCH WORKED, HIS HOUSE AND OFFICE MAKE A SMALL MUSEUM IN THE MIDDLE OF THE FOREST. THEY CAN ALSO WALK OVER 5 KM OF TRAILS, SEEING SIGHTS LIKE THE PETROGLYPHS (ROCK CARVINGS MADE BY COSTA RICAN NATIVES), AND THE NEARBY RIVER NAMED PEÑAS BLANCAS. THIS RIVER, AND THE FOUR TRIBUTARIES LOCATED ON THE PROPERTY ARE WHERE WE SPENT THE FIRST 5 WEEKS OF OUR INTERNSHIP. OUR JOB WAS TO STUDY THE ATTRIBUTES OF THE MAIN RIVER (PEÑAS BLANCAS) ON A DAILY BASIS AS WELL AS THE NEARBY TRIBUTARIES ON A WEEKLY BASIS. WE USED A MANTA RAY 2 PROBE BY EURICA TO TEST FOR PRESSURE, DEPTH, TEMPERATURE, DISSOLVED OXYGEN, OXYGEN SATURATION, CONDUCTIVITY, TURBIDITY, AND PH LEVEL. UNFORTUNATELY, WE FACED SOME DIFFICULTIES DURING

THE MIDDLE OF OUR 5 WEEKS SO WE WEREN'T ABLE TO COLLECT AS MUCH DATA AS WE WOULD HAVE LIKED BUT THE DATA WE COLLECTED SHOULD SUFFICE TO INTERPRET VARIOUS FACTORS THAT CAN AFFECT THE QUALITY OF THE WATER. THE FACTOR THAT WE PRIMARILY FOCUSED ON WAS RAIN BUT OF COURSE OTHER FACTORS SUCH AS REFORESTATION, SEWAGE, AND RUNOFF CAN ALSO AFFECT WATER QUALITY.

ANALYZING THE DATA PROVIDES US WITH BENEFICIAL INFORMATION THAT CAN HELP THE LOCAL COMMUNITY AND LOS CUSINGOS TO BETTER UNDERSTAND THE RIVER THAT THEY MAY USE AS IRRIGATION SYSTEMS OR AS A GENERAL WATER SOURCE FOR THEIR LIVESTOCK.

#### DATA:

TIME	pH mV	ORP mV	SpCond uSHDO	%Sat	Depth m	Turb NTU	CablePow	HDO mg/l	Temp deg	pH units
10:32:41	1.13	119	36	98.1	1.78	0	12.6	8.46	22.62	7.05
13:19:59	3.48	466	68.2	98.7	-0.34	4.6	12.62	8.41	23.17	6.97
13:20:09	3.47	465	68.1	98.7	-0.34	4.3	12.6	8.41	23.17	6.97
13:20:23	4.67	464	68.1	98.8	-0.35	4.5	12.65	8.41	23.18	6.94
13:20:42	4.97	463	68.1	98.8	-0.34	7.4	12.58	8.41	23.18	6.94
13:20:52	5.78	463	68.2	98.8	-0.34	5.5	12.65	8.41	23.18	6.92
14:07:38	-3.37	346	0.3	0	0.53	2.9	12.62	0	25.65	7.08
17:30:08	55.72	361	30.4	98.3	2.13	0.8	12.75	7.74	27.41	6.04
17:44:43	29.53	457	38	101.2	0.16	12.7	12.7	8.25	25.5	6.5
11:26:30	-10.41	359	90.7	99.8	-0.34	19.6	12.55	8.95	20.46	7.21
14:48:36	-12.82	341	89.9	99.6	-0.36	28	12.57	8.79	21.29	7.25
10:13:57	6.41	454	160.9	98.9	0.96	2.6	12.68	8.61	21.98	6.91
14:36:03	-0.22	352	89.4	104.8	-0.32	20.1	12.53	9.21	21.51	6.99
17:05:13	-9.73	327	94.6	103.5	-0.29	20.7	12.51	9.13	21.3	7.15
11:12:03	-15.6	329	101.4	105.4	-0.28	17.3	12.67	9.64	19.52	7.25
13:18:33	6.75	321	67.9	104.1	-0.31	23.2	12.7	8.85	23.22	6.86
13:44:07	122	361	0.4	97.4	-0.36	5933	12.62	8.13	24.26	4.82
13:46:16	112.2	357	52.9	93.4	0.85	8.7	12.68	7.76	24.41	4.99
17:51:02	-0.24	382	103.6	104.8	-0.3	149.3	12.67	9.34	20.75	6.99
12:28:43	-18.82	307	102.8	104.9	-0.31	35.4	12.55	9.33	20.88	7.36
14:28:51	-21.75	314	106.3	105.1	-0.3	27.1	12.6	9.33	21.04	7.41
17:58:13	-21.16	330	108.9	104.6	-0.33	22.6	12.58	9.21	21.4	7.4
11:11:24	117.8	397	49.6	103	3.65	13.9	12.68	8.61	24.17	4.95
11:35:28	15.87	356	72	103.7	-0.29	9.1	12.67	8.89	22.82	6.75
15:58:38	-24.98	291	117.2	105.8	-0.31	14.9	12.6	9.36	21.18	7.5
17:03:25	-28.78	287	116.9	105.7	-0.32	389.4	12.58	9.32	21.35	7.56
12:41:06	-27.89	296	116.8	105.9	-0.3	13.7	12.68	9.43	20.86	7.55
13:18:50	52.78	340	31.8	83	-0.32	2.2	12.57	7.14	22.63	6.11
13:49:27	43.71	202	41.4	101.8	-0.31	10.3	12.67	8.68	23.08	6.27
16:25:40	121	350	49.8	73.8	-0.37	49.8	12.6	6.15	24.31	4.9
10:47:36	-19.37	308	102.7	106.1	-0.33	10.4	12.57	9.45	20.81	7.4
10:48:15	-18.79	308	102.8	106	-0.32	10.1	12.55	9.45	20.81	7.39
11:53:44	52.64	339	31.5	90.2	-0.29	5	12.58	7.79	22.41	6.11
12:37:43	-19.06	313	103.7	105.8	-0.32	1767	12.55	9.35	21.23	7.39
12:53:11	4.81	302	68.2	104.9	-0.31	8.9	12.57	8.9	23.34	6.96

#### DATA INTERPRETATION:

THE DATA THAT WAS COLLECTED OVER THE PAST 5 WEEKS AT LOS CUSINGOS PROVIDED US EVIDENCE THAT THE LOCAL WATER FROM THE NEARBY RIVER, PEÑAS BLANCAS, IS SOME OF THE CLEANEST WATER IN THE WORLD. OUR GROUP OF INTERNS WAS ABLE TO HIKE UP THE CHIRRIPO NATIONAL PARK TO SEE WHERE THE CONSTRUCTED "TOMA DE AGUA" WAS. THIS ROUGHLY TRANSLATES TO "TAKE OF WATER". THIS IS WHERE LOCALS HAVE BUILT A 6 KM LONG TUBE THAT CONECTS THE NATURAL FORMING SPRING WATER FROM THE MOUNTAIN CHIRRIPO TO THEIR TOWN, QUIZARRA. SINCE THE TOWN NOW HAS FRESH CLEAN WATER FROM A KNOWN GOOD SITE, THIS CUTS DOWN ON WATER BOTTLE USE AND RELATES DIRECTLY TO SUSTAINABLE DEVELOPMENT AS THE TOWN WASTES LESS.



#### IMPACTS:

NOT ONLY THE TOWN OF QUIZARRA BENEFITS FROM THE "TOMA DE AGUA" BUT ALSO THE NEABY CITY OF SAN ISIDRO DE GENERAL RECIEVES SOME OF THIS FRESH WATER. LOS CUSINGOS PROVIDES THE COMMUNITY WITH A PLACE TO COME AND SEE SOME OF THE MOST BEAUTIFUL EXOTIC WILFLIFE THAT THE WORLD HAS TO OFFER. THE ECO TOURISM THAT NATIONAL PARKS BRING TO COSTA RICA HELPS THEIR LOCAL ECONOMY BY BEING ABLE TO CHARGE THE TOURISTS "EXTRANJERO" PRICES. FOR EXAMPLE, A LOCAL FEE TO GET INTO LOS CUSINGOS IS \$2. THE CHARGE FOR A EXTRANJERO IS \$17. LOS CUSINGOS AND OTHER NATION PARKS ALIKE CAN GET TENS OF THOUSANDS OF TOURISTS PER WEEK IN THE BUSY SEASON. SINCE COSTA RICA'S PRIORITY IS CLEANER ENERGY AND RENEWABLE RESOURCES IT IS APPARENT TO SEE THAT MAKING SURE WILD LIFE IS PROPERLY DEFENDED AND OBSERVED.

#### FUTURE WORK:

THE FUTURE WORK FOR LOS CUSINGOS IS PROPERLY MAINTAINING WHERE ALEXANDER SKUTCH DID HIS STUDIES, EXTENSIVELY RESEARCHING DIFFERENT PLANT AND ANIMAL LIFE, AND CREATING NEW PATHS FOR EXPLORERS TO OBSERVE NATURE. WHILE THERE AT LOS CUSINGOS OUR GROUP OF INTERNS HELPED WITH THE BUILDING OF NEW TRAILS.

