

PRELIMINARY DATA SUMMARY
 FOR FEBRUARY 10-16, 2021 TURTLE COUNTS
 AT FOUR LOCATIONS IN KIHOLO BAY.

R. S. Henderson, Feb. 21, 2021

Table 1. Observed total numbers and average estimated carapace size of basking and in-water turtles at four areas in Kiholo Bay.

	<u>No.of Ind.</u>	<u>Ave.Size (in)</u>	<u>Min.Size (in)</u>	<u>Max.Size (in)</u>
Lagoon, Basking	17	28.2	18	38
Lagoon, In-Water	9	22.4	20	25
West Pond, In-Water	53	22.2	18	30
East Pond, In-Water	45	23.6	18	34
Shoreline, In-Water	20	21.1	16	27

Over a *total* Kiholo Bay nearshore observation area of about 11 acres (40,600 sq meters, 4.5 hectares), *average total* number of turtles observed was 42.6 for in-water individuals and 4.6 for basking individuals.

Only 12% (17) of the total number of turtles (144) observed in the counts were 28 inches or greater carapace size. The largest size turtle was a female of 38 inch size that was seen repeatedly basking on eastern shore of the lagoon peninsula. The smallest average size class of turtles (21.1 inches) were those commonly seen browsing on algal stubble on hard substrate very close to shore in intertidal shallows, usually at higher tide levels.

Clusters of turtles commonly gathered on rising to high tide conditions in the West Pond inside the 'auwai mouth to graze on green algal mat on pahoehoe shallows. Mixed sizes of turtles seen in East Pond were usually browsing or searching on hard substrate areas, with highest feeding activity focused on green algal mats on hard substrate.

Of particular interest in the lagoon turtle counts (Tables 1 & 2) is that the average numbers of in-water and basking turtles observed (3.2 and 4.6, respectively) are very low. In past experience of the author and primary observer of this report, those averages are only about a third to a quarter of the numbers of in-water and basking turtles usually seen in the lagoon area over the last 15 years. There appears to have been a drastic decline in lagoon turtles in recent times. At present, there is no obvious reason or cause for this decline.

TABLE 2. LAGOON TURTLE COUNTS (Approx area surveyed =~ 7.35 acre, 2.97 hectare, 29,726 sq m)

<u>Date/Time Interval</u>	<u>Tidal State</u>	<u>Method</u>	<u>Visibility Cond.</u>	<u># In-Water</u>	<u># Basking</u>
2/10 1235-1312	Rising 0.2 to 0.4'	Kayak	Good	2	11
2/11 1320-1405	Rising 0.3' to 0.6'	Kayak	Good	1	3
2/12 1520-1610	Rising 0.6' to 0.8'	Kayak	Good	1	2
2/14 0905-0935	Dropping 0.7' to 0.5'	Kayak	Good	7	5
2/14 1440-1530	Rising 0.4' to 0.6'	Kayak	Good	5	2
Average				<u>3.2</u>	<u>4.6</u>

Table 3. BEACH NEARSHORE TURTLE COUNTS (Approx area surveyed =~ 1.35 acre, 0.55 hectare, 5,465 sq m)

<u>Date/Time Interval</u>	<u>Tidal State</u>	<u>Method</u>	<u>Visibility Cond.</u>	<u># In-Water</u>	<u># Basking</u>
2/11 0915-0945	Dropping 0.3' to 0'	Walk	Good	3	0
2/11 1440-1450	Rising 0.7' to 0.8'	Walk	Good	7	0
2/12 1650-1710	Slack low-hi of 0.8'	Kayak	Good	10	0
Average				<u>6.7</u>	<u>0</u>

Table 4. TNC WEST POND (Approx area surveyed =~ 0.95 acre, 0.39 hectare, 3,839 sq m)

<u>Date/Time Interval</u>	<u>Tidal State</u>	<u>Method</u>	<u>Visibility Cond.</u>	<u># In-Water</u>	<u># Basking</u>
2/10 1415-1430	Rising 0.6' to 0.7'	Kayak	Good	14	0
2/11 1510-1635	Rising 0.7' to 0.8'	Kayak	Good	23	0
2/16 1040-1140	Dropping 0.5 to 0.1'	Snorkel	Good	16	0
Average				<u>17.7</u>	<u>0</u>

Table 5. TNC EAST POND (Approx area surveyed =~ 1.92 acre, 0.78 hectare, 7,783 sq m)

<u>Date/Time Interval</u>	<u>Tidal State</u>	<u>Method</u>	<u>Visibility Cond.</u>	<u># In-Water</u>	<u># Basking</u>
2/10 1435-1515	Rising 0.6' to 0.7' hi	Kayak	Good	15	0
2/11 1540-1605	Rising 0.5' to 0.8' hi	Kayak	Poor to Fair, algal bloom	7	0
2/13 1615-1700	Rising 0.9' to 1.0' hi	Snorkel	Fair to Good	23	0
Average				<u>15</u>	<u>0</u>

Total of average values for In-Water = 42.6; for Basking = 4.6 Over total of 11 acres, 4.48 hectares, 49,600 sq m

Following are copies of the map/data sheets used for data collection at the four count locations.

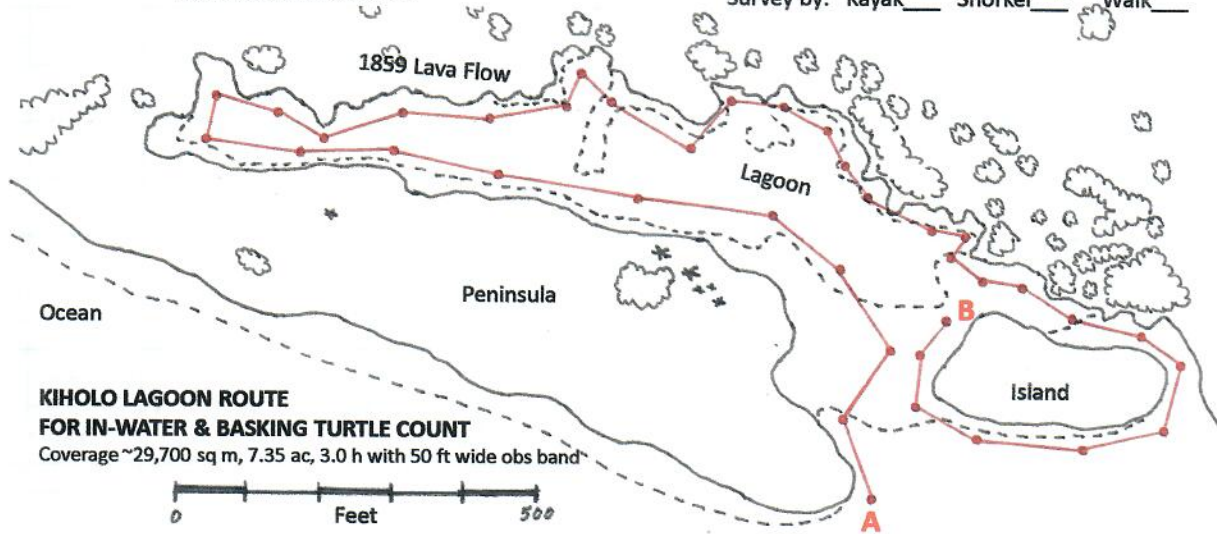
KIHOLO LAGOON DATA COLLECTION SHEET

CARAPACE LENGTH (INCHES)

A	J	S	AA
B	K	T	BB
C	L	U	CC
D	M	V	DD
E	N	W	EE
F	O	X	FF
G	P	Y	GG
H	Q	Z	HH
I	R		II

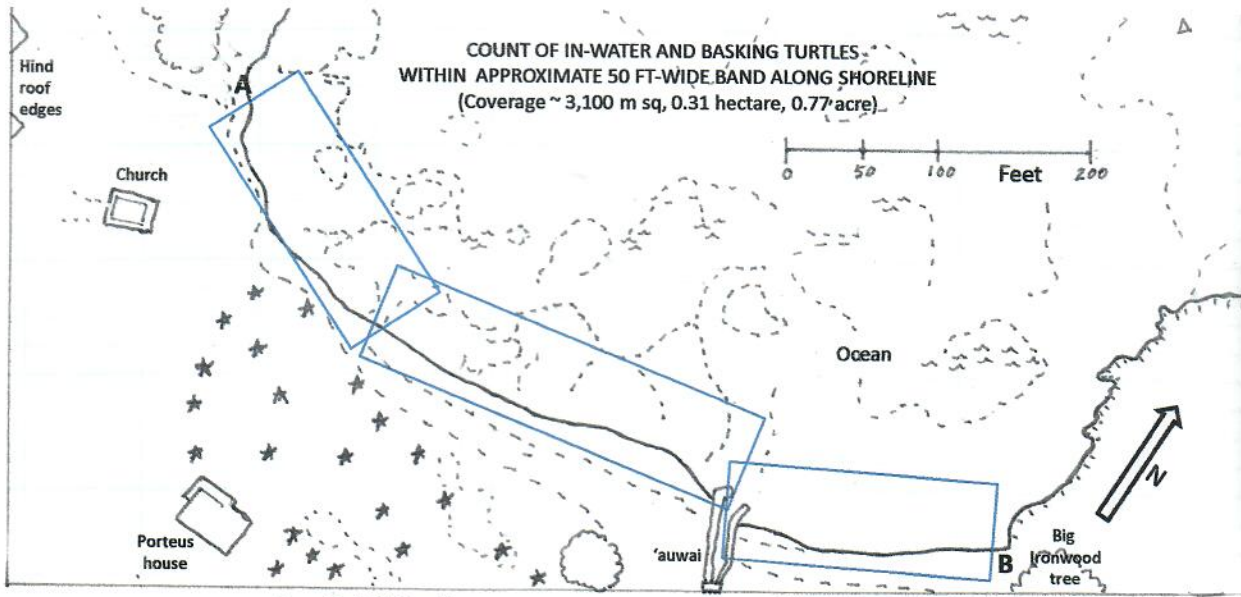
Use these letter designators to mark locations on map.
Tag basking turtles with "b".

Wind speed (mph) & direction _____
 Cloud cover (%) _____
 Surf height (ft) _____ Lagoon chop (in) _____
 Vertical water visibility (ft) _____
 Tidal condition: _____
 Time start from **A** _____
 Time finish at **B** _____
DATE: _____
 Observer: _____
 Visitor load: Hi ___ Med ___ Lo ___
 Survey by: Kayak ___ Snorkel ___ Walk ___



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KIHOLO SHORELINE DATA COLLECTION SHEET



Tag with "b" if basking

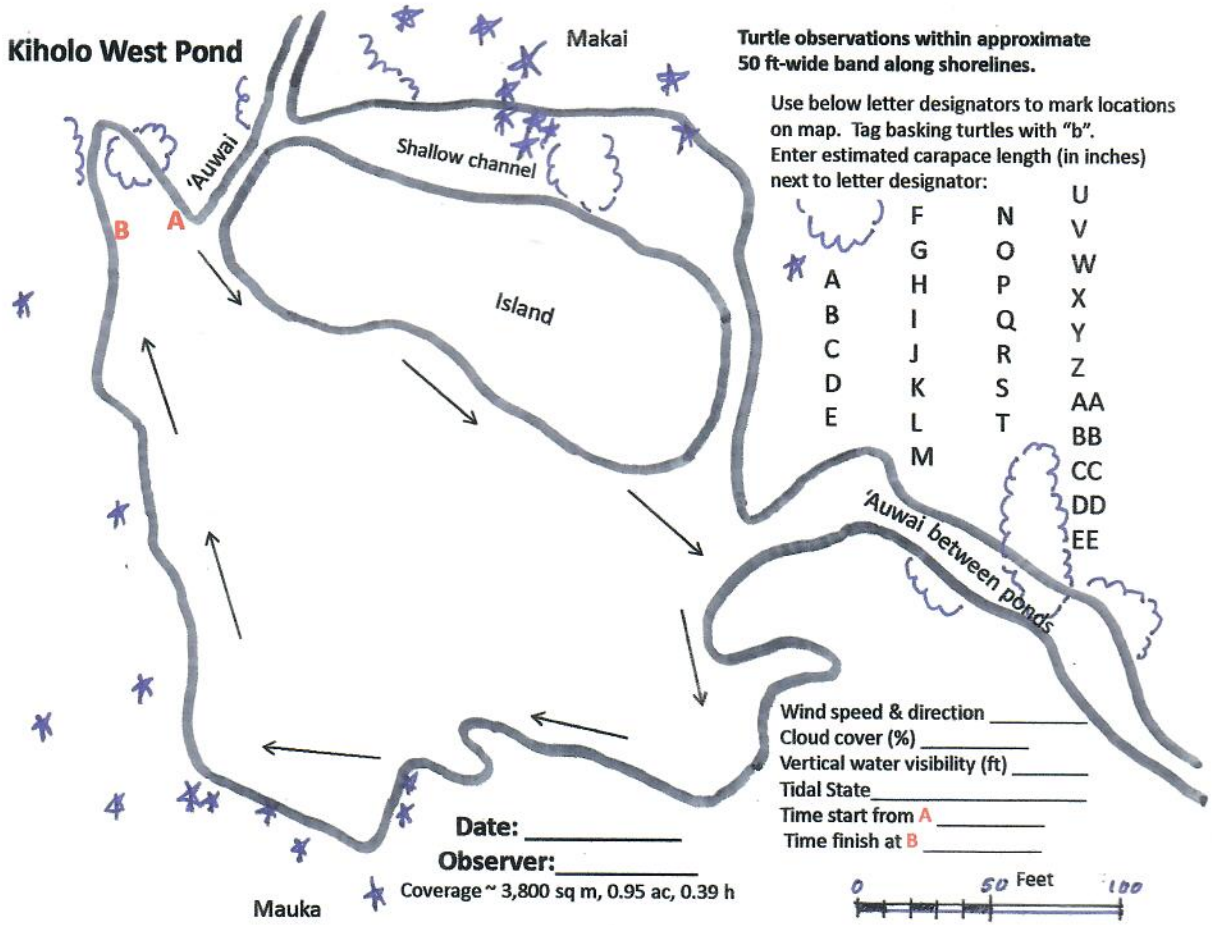
CARAPACE LENGTH (INCHES)	A	J	S	BB
	B	K	T	CC
	C	L	U	DD
	D	M	V	EE
	E	N	W	FF
	F	O	X	GG
	G	P	Y	HH
	H	Q	Z	II
	I	R	AA	JJ

Wind speed (mph) & direction _____
 Cloud cover (%) _____
 Surf height ____ Vertical water visibility (ft) ____
 Tidal condition _____
 Time start from A _____ to B finish _____
 Visitor load: Hi ____ Med ____ Lo ____
 DATE: _____
 Survey via: Walk ____ Snorkel ____ Kayak ____
 Observer: _____
 Other notes: _____

Scribe these letter designators on map to show locations

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KIHOLO WEST POND DATA COLLECTION SHEET



KIHOLO EAST POND DATA COLLECTION SHEET

Wind speed & direction _____
 Cloud cover % _____
 Vertical water visibility (ft) _____
 Tidal condition: _____

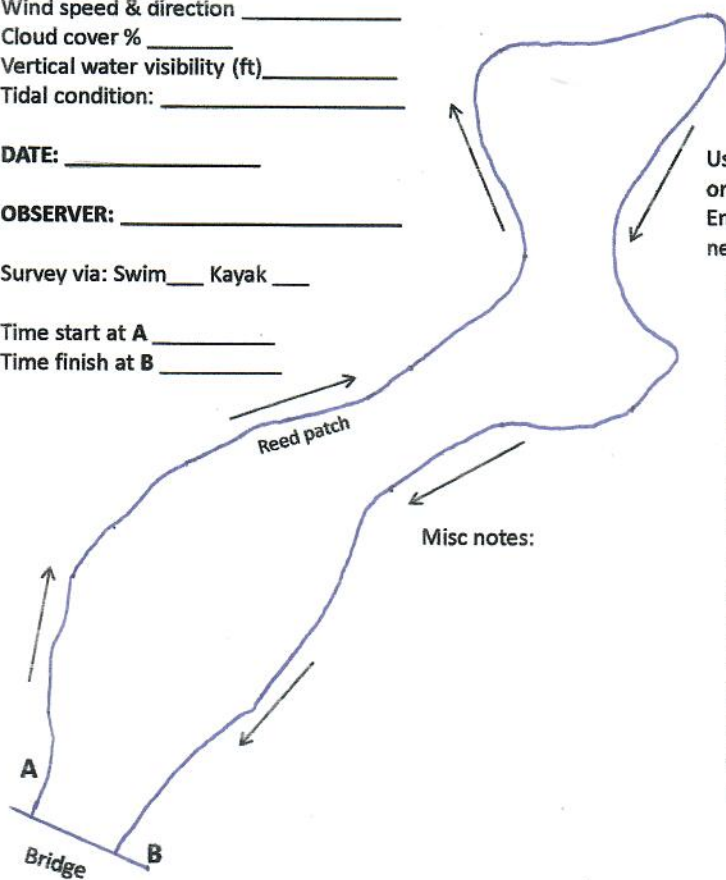
DATE: _____

OBSERVER: _____

Survey via: Swim ___ Kayak ___

Time start at A _____

Time finish at B _____



KIHOLO EAST POND
TURTLE OBSERVATIONS within
estimated 50 ft width shoreline band
 Coverage ~4,000 m sq, 1.9 acre, 0.78 h

Use these letter designators to mark locations on map. Tag basking turtles with "b". Enter estimated carapace length (in inches) next to letter designator.

- | | | |
|---|----|----|
| A | Q | HH |
| B | R | II |
| C | S | JJ |
| D | T | KK |
| E | U | LL |
| F | V | MM |
| G | X | NN |
| H | Y | OO |
| I | Z | PP |
| G | AA | QQ |
| K | BB | RR |
| L | CC | SS |
| M | DD | TT |
| N | EE | UU |
| O | FF | VV |
| P | GG | XX |

