

Halawa Stream Monitoring Data Sheet

Observer/s: _____

Date: 06/16/2022

Site Name: Upstream Site

Time: 0700 AM

WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Wind: less than 1 mph
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	Air Temperature: 74 °F
<u>10</u> % cloud cover	<u>50</u> % cloud cover or less	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/> clear/sunny	

WATER QUALITY

Water level ☒ dry ☒ wet ☐ standing water ☐ flowing water ☐ sheen visible

Observed Turbidity/Sedimentation: Some dry sediment on the channel floor.

Water Color: N/A

Estimated Depth: N/A

Visibility: N/A

Tide (if applicable): N/A

Notes: Water was slightly trickling from the downstream side drainage. Leaf litter, flowers, rocks, dead palm fronds, growing vegetation, and branches were present in the concrete streambed. The concrete channel was mostly wet only due to previous rainfall. Farther downstream, the fence has partially given way due to tree falls. These trees are now leaning over the channel.

SPECIES OBSERVATIONS

Fish Kill? ☐ Yes ☒ No # Dead Fish _____

Fish Breathing Stress/Gulping ☒ None ☐ Yes

Fish Abnormal Behavior ☒ None ☐ Yes

Notes:

Species Observed	# of individuals	Behavior	Notes/Observations
Spotted Dove	1	Transitioning, Foraging	In the concrete channel and in the tree canopy.

Halawa Stream Monitoring Data Sheet

PHOTOGRAPHS



Photograph # 1:

Upstream site
looking
upstream



Photograph # 2:

Upstream site
looking
downstream

Halawa Stream Monitoring Data Sheet

Observer/s: _____

Date: 06/16/2022

Site Name: Discharge Site

Time: 0735 AM

WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Wind: 4-7 mph
<input checked="" type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	Air Temperature: 75 °F
<u>100</u> % cloud cover	<u>50</u> % cloud cover or less	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/> clear/sunny	

WATER QUALITY

Water level ☒ dry ☒ wet ☐ standing water ☒ flowing water ☐ sheen visible

Observed Turbidity/Sedimentation: Sediment on channel floor, some leaf litter present in water

Water Color: Clear

Estimated Depth: Less than 1 inch above discharge, 1-8 inches below discharge

Visibility: Clear to bottom

Tide (if applicable): N/A

Notes: Downstream of the discharge point water was flowing across the entire channel at approximately 2-8 inches in depth. Upstream of the channel was mostly wet due to previous rainfall. Water was slightly trickling along sides of the channel. The streambed contained branches, growing vegetation, leaves, and flowers. Half a dozen branches (dead/living) were hanging into the channel. There is little vegetation debris caught in the waddles downstream.

SPECIES OBSERVATIONS

Fish Kill? ☐ Yes ☒ No # Dead Fish _____

Fish Breathing Stress/Gulping ☒ None ☐ Yes

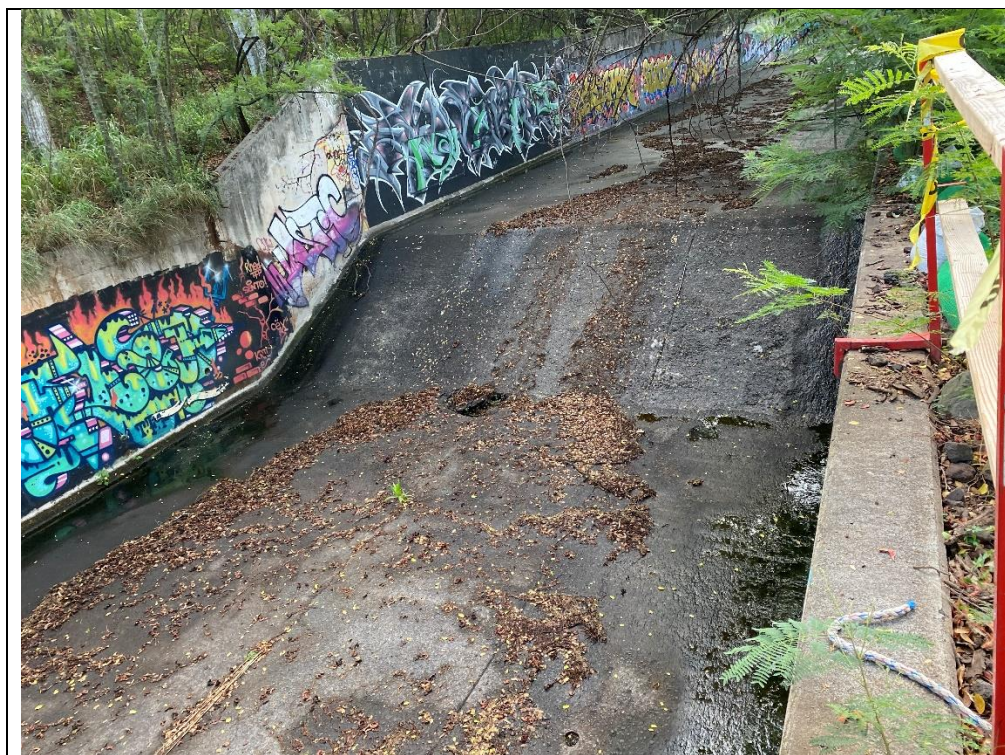
Fish Abnormal Behavior ☒ None ☐ Yes

Notes:

Species Observed	# of individuals	Behavior	Notes/Observations
Common Myna	3	Transitioning, Foraging	In the tree canopy above the stream.

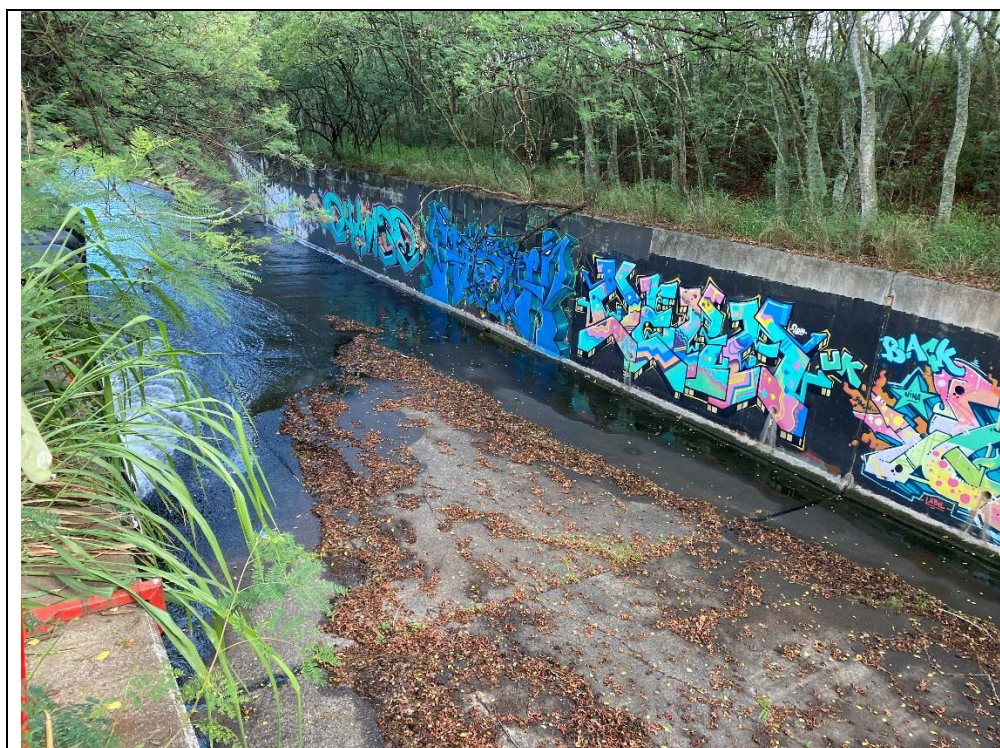
Halawa Stream Monitoring Data Sheet

PHOTOGRAPHS



Photograph # 1:

Discharge site
looking
upstream.



Photograph # 2:

Discharge site
looking
downstream.

Halawa Stream Monitoring Data Sheet

Observer/s: _____

Date: 06/16/2022

Site Name: Downstream Site # 1

Time: 0814 AM

WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Wind: 4-7 mph
<input checked="" type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	Air Temperature 77° F
<u>100</u> % cloud cover	<u>50</u> % cloud cover or less	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/> clear/sunny	

WATER QUALITY

Water level ☒ dry ☒ wet ☐ standing water ☒ flowing water ☐ sheen visible

Observed Turbidity/Sedimentation: Soil/Sedimentation was present in the concrete channel.

Water Color: Clear

Estimated Depth: 1-6 inches

Visibility: Clear to the bottom

Tide (if applicable): N/A

Notes: A notable amount of green algae was observed throughout the channel. Most of the filamentous algae was in the form of mats or clumped in sections. Dead filamentous algae was observed bunched around piles of sediment and living vegetation. The stream contained piles of sediment containing growing vegetation, leaf litter, rocks, and a little rubbish.

SPECIES OBSERVATIONS

Fish Kill? ☐ Yes ☒ No # Dead Fish 0

Fish Breathing Stress/Gulping ☒ None ☐ Yes

Fish Abnormal Behavior ☒ None ☐ Yes

Notes: No wildlife observations were observed.

Species Observed	# of individuals	Behavior	Notes/Observations
N/A			

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PHOTOGRAPHS



Photograph # 1:

Downstream
Site #1 looking
upstream.

Halawa Stream Monitoring Data Sheet

Observer/s: _____

Date: 06/16/2022

Site Name: Downstream Site #2

Time: 0824 AM

WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Wind: 4-7 mph
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	Air Temperature: 77 °F
<u>30</u> % cloud cover	<u>50</u> % cloud cover or less	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/> clear/sunny	

WATER QUALITY

Water level ☒ dry ☒ wet ☐ standing water ☒ flowing water ☐ sheen visible

Observed Turbidity/Sedimentation: Sediment was present on the dry and wet sections of concrete channel floor.

Water Color: Clear in the concrete channel, brown in the deeper sections.

Estimated Depth: 1-6 inches in the channel, 6+ feet deep in the estuary portion

Visibility: Clear to the bottom on the concrete channel, approximately 5 feet past the concrete section

Tide (if applicable): N/A

Notes: A few white bubbles were present on both sides of the channel flowing from the concrete section into the deeper section of stream. One small clump of brown foam was present on the right side of the stream under the mangrove aerial roots. Channel contained numerous amounts of rubbish, leaf litter, filamentous green algae, and rocks. Some sediment piles in the stream house vegetation growth. Vegetation removal of mangrove along the eastern bank of the stream site had occurred previously via an excavator. A large yellow and black waddle was observed under the bridge on the eastern side of the concrete section of the channel. Three City & Country employees were earlier observed on the bridge in that vicinity.

SPECIES OBSERVATIONS

Fish Kill? ☐ Yes ☒ No # Dead Fish _____

Fish Breathing Stress/Gulping ☒ None ☐ Yes

Fish Abnormal Behavior ☒ None ☐ Yes

Notes:

Species Observed	# of individuals	Behavior	Notes/Observations
Unknown small-sized fish	500	Schooling	At the shoreline and on left side where concrete channel meets the estuary.
Unknown medium-sized fish	500	Schooling	At the shoreline water where concrete channel meets the estuary.

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Cattle Egret	1	Transitioning	Flying over the stream.
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PHOTOGRAPHS

	<p>Photograph # 1:</p> <p>Downstream site # 2 looking downstream. Mass vegetation removal utilizing a large excavator had occurred upslope (yellow circle).</p>
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Halawa Stream Monitoring Data Sheet



Photograph # 2:

Large yellow and black waddle below bridge on eastern side of concrete channel section at Downstream site # 2.

Halawa Stream Monitoring Data Sheet

Observer/s: _____

Date: 06/16/2022

Site Name: Estuary Site #1

Time: 0905 AM

WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Wind: 8-12 mph
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	Air Temperature: 78°F
<u>60</u> % cloud cover	<u>50</u> % cloud cover or less	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/> clear/sunny	

WATER QUALITY

Water level ☐ dry ☒ wet ☐ standing water ☒ flowing water ☐ sheen visible

Observed Turbidity/Sedimentation: Increased turbidity with increasing depth.

Water Color: Opaque, greenish brown.

Estimated Depth: 5+ feet

Visibility: 3 feet

Tide (if applicable): Falling, -0.03 feet

Notes: A large pile of corn cobs and a grocery cart bicycle parts were located at the top of trail that leads down to water's edge at the encampment.

SPECIES OBSERVATIONS

Fish Kill? ☐ Yes ☒ No # Dead Fish _____

Fish Breathing Stress/Gulping ☒ None ☐ Yes

Fish Abnormal Behavior ☒ None ☐ Yes

Notes:

Species Observed	# of individuals	Behavior	Notes/Observations
Koloa/Mallard Hybrid	2	Transitioning, Loafing	Swimming upstream and then flew around the stream bend.
Unknown small-sized fish	200	Schooling	Left side of stream, on shoreline.
Black-Crowned Night Heron	3	Foraging, Loafing	All juveniles. Upstream and at sediment sandbar.
Hawaiian Stilt	2	Transitioning, Loafing	Upstream and at sediment sandbar.
Feral Cat	1	Foraging	Upstream at sediment sandbar, near heron and stilts. Cat was black, orange, and white.

Halawa Stream Monitoring Data Sheet

White Tern	2	Transitioning	Flew over stream several times.
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PHOTOGRAPHS



Photograph # 1:
Estuary site #1
looking
upstream at
sediment
sandbar. The
feral cat and
heron are visible
although
difficult to see
(yellow circle).

Halawa Stream Monitoring Data Sheet



Photograph # 1:

Large pile of corn on the cobs and a grocery cart were located near the bridge on the trail that leads down to the encampment and estuary site #1.

Halawa Stream Monitoring Data Sheet

Observer/s: _____

Date: 06/16/2022 Site Name: Estuary Site #2 Time: 0847 AM

WEATHER CONDITIONS

NOW	Past 24 Hours	Has there been a heavy rain in the past 7 days?
<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> storm (heavy rain)	<input type="checkbox"/> yes <input checked="" type="checkbox"/> no
<input type="checkbox"/> rain (steady rain)	<input type="checkbox"/> rain (steady rain)	Wind: 8-12 mph
<input type="checkbox"/> showers (intermittent)	<input checked="" type="checkbox"/> showers (intermittent)	Air Temperature: 77 °F
<u>50</u> % cloud cover	<u>50</u> % cloud cover or less	
<input type="checkbox"/> clear/sunny	<input type="checkbox"/> clear/sunny	

WATER QUALITY

Water level ☐ dry ☒ wet ☐ standing water ☒ flowing water ☒ sheen visible

Observed Turbidity/Sedimentation: The turbidity observed at this site was typical. Increased turbidity with increasing depth.

Water Color: Clear near the shoreline and brown in the deeper sections

Estimated Depth: 4+ feet in the center of the channel

Visibility: 2 feet

Tide (if applicable): Falling, -0.02 feet

Notes: Fishing line protruding from mangrove trees entering the water on the south end of the stream, near the pipeline.

SPECIES OBSERVATIONS

Fish Kill? ☐ Yes ☒ No # Dead Fish _____

Fish Breathing Stress/Gulping ☒ None ☐ Yes

Fish Abnormal Behavior ☒ None ☐ Yes

Notes:

Species Observed	# of individuals	Behavior	Notes/Observations
Unknown small-sized fish	15	Foraging, Schooling	In shallow waters, along shoreline.
Black Crab	10	Transitioning, Loafing	Traversing over shoreline rocks and submerged pipe.
Common Myna	2	Transitioning	On shoreline and flying over the stream.

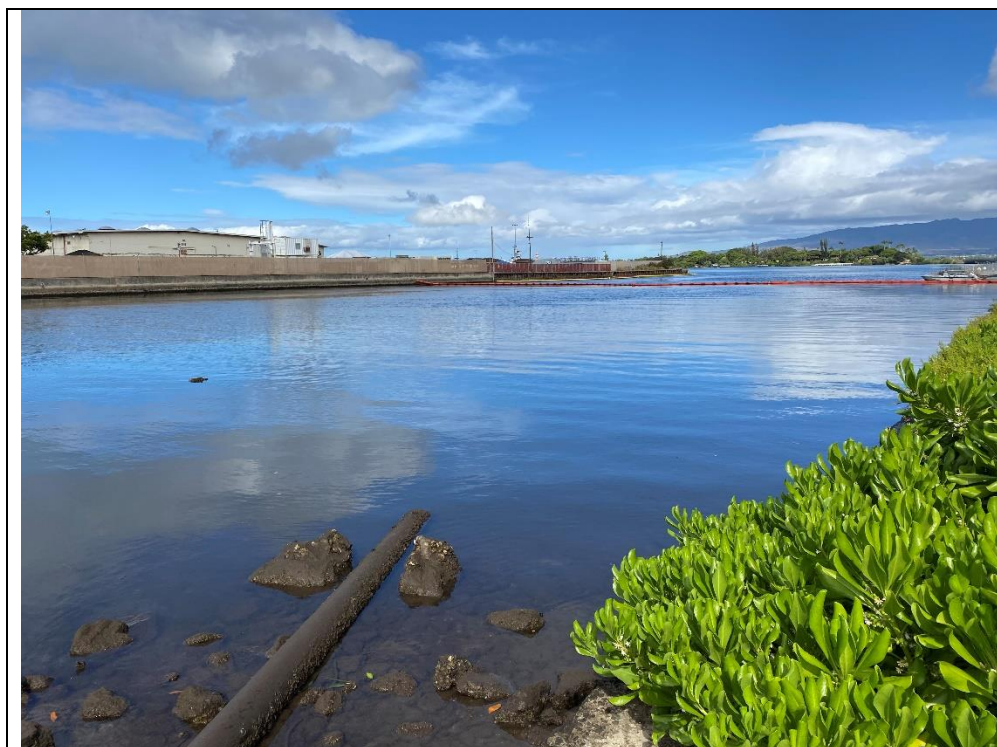
Halawa Stream Monitoring Data Sheet

PHOTOGRAPHS



Photograph # 1:

Estuary site #2
looking
upstream.



Photograph # 2:

Estuary site #2
looking
downstream,
into Pearl
Harbor.

WATERBIRD SURVEY DATASHEET

WETLAND CONDITON CODES		WEATHER CODES	
Water Level (WL) 0 = dry 1 = lower than normal 2 = normal 3 = higher than normal	Human Impact (HI) 0 = indirect (little garbage, few people) 1 = moderate 2 = heavy (many people present; e.g., wading, boating, fishing, etc)	Rainfall (RF) 0 = no rain 1 = mist or fog 2 = drizzle 3 = light rain 4 = heavy rain 5 = snow or hail	Wind 0 = no wind, < 1 mph 1 = smoke drifts, 1-3 mph 2 = wind felt on face, 4-7 mph 3 = leaves and twigs rustle, 8-12 mph 4 = dust raises, branches stir, 13-18 mph 5 = small trees sway, >19 mph
Vegetation Cover (VC) 0 = open water (<25% veg) 1 = 26-50% veg cover 2 = 51-75% veg cover 3 = >75% cover	Shoreline Condition of Tidal Wetlands (SC) 0 = water at high tide mark N/A=not applicable 1 = water 25 ft from high tide mark 2 = water 50 ft from high tide mark 3 = water >50 ft from high tide mark		Cloud Cover (CC) = Estimate to the nearest 10%

Date 6-16-22

Island oahu

REMINDERS: If site it not accessible, include wetland name and write 'no access'

If no birds observed, fill out top portion and write 'no birds'

KEEP A COPY FOR YOUR RECORDS

Subadult includes juveniles and chicks

Observers [REDACTED]

Wetland Name	US				DC				DS 1				DS 2			
Condition	WL	VC	HI	SC	WL	VC	HI	SC	WL	VC	HI	SC	WL	VC	HI	SC
	0	0	0	na	2	0	0	na	3	0	0	na	2	0	0	na
Weather	CC	RF	Wind		CC	RF	Wind		CC	RF	Wind		CC	RF	Wind	
	10	0	0		100	3	2		100	3	2		30	0	2	
Time	Start		Stop		Start		Stop		Start		Stop		Start		Stop	
	7am		706am		735am		741am		814am		819am		824am		835am	
COOT adult																
subadult																
GALLINULE/MOORHEN adult																
subadult																
STILT adult																
subadult																
KOLOA adult																
subadult																
Koloa/Mallard Hybrid																
Mallard (domestic/feral)																
Other Domestic Duck																
Black-cr. Night Heron																
Cattle Egret																
Pacific Golden Plover																
Ruddy Turnstone																
Sanderling																
Wandering Tattler																
Northern Pintail																
Mallard (migratory)																
Lesser scaup																

WATERBIRD SURVEY DATASHEET

WETLAND CONDITON CODES		WEATHER CODES	
Water Level (WL) 0 = dry 1 = lower than normal 2 = normal 3 = higher than normal	Human Impact (HI) 0 = indirect (little garbage, few people) 1 = moderate 2 = heavy (many people present; e.g., wading, boating, fishing, etc)	Rainfall (RF) 0 = no rain 1 = mist or fog 2 = drizzle 3 = light rain 4 = heavy rain 5 = snow or hail	Wind 0 = no wind, < 1 mph 1 = smoke drifts, 1-3 mph 2 = wind felt on face, 4-7 mph 3 = leaves and twigs rustle, 8-12 mph 4 = dust raises, branches stir, 13-18 mph 5 = small trees sway, >19 mph
Vegetation Cover (VC) 0 = open water (<25% veg) 1 = 26-50% veg cover 2 = 51-75% veg cover 3 = >75% cover	Shoreline Condition of Tidal Wetlands (SC) 0 = water at high tide mark 1 = water 25 ft from high tide mark 2 = water 50 ft from high tide mark 3 = water >50 ft from high tide mark <div style="text-align: right; font-size: small;">N/A=not applicable</div>		Cloud Cover (CC) = Estimate to the nearest 10%

Date 6-16-22

Island oahu

REMINDERS: If site it not accessible, include wetland name and write 'no access'

If no birds observed, fill out top portion and write 'no birds'

KEEP A COPY FOR YOUR RECORDS

Subadult includes juveniles and chicks

Observers [REDACTED]

Wetland Name	ES 1				ES 2												
	WL	VC	HI	SC	WL	VC	HI	SC	WL	VC	HI	SC	WL	VC	HI	SC	
	2	0	0	1	2	0	0	1									
Condition																	
Weather	CC	RF	Wind		CC	RF	Wind		CC	RF	Wind		CC	RF	Wind		
	60	0	3		50	0	3										
Time	Start		Stop		Start		Stop		Start		Stop		Start		Stop		
	905am		917am		847am		855am										
COOT adult																	
subadult																	
GALLINULE/MOORHEN adult																	
subadult																	
STILT adult	2 (transitioning, loafing)																
subadult																	
KOLOA adult																	
subadult																	
Koloa/Mallard Hybrid	2 (transitioning, loafing)																
Mallard (domestic/feral)																	
Other Domestic Duck																	
Black-cr. Night Heron	3 (foraging, loafing)																
Cattle Egret																	
Pacific Golden Plover																	
Ruddy Turnstone																	
Sanderling																	
Wandering Tattler																	
Northern Pintail																	
Mallard (migratory)																	
Lesser scaup																	
White Tern	3 (transitioning)																
Comments					no waterbirds/shorebirds												