

Halawa Stream Monitoring Data Sheet

Observer/s: _____

Date: 1/30/2023 Site Name: Upstream Site Time: 9:23 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 checked="" type="checkbox"/> storm (heavy rain) | <input checked="" type="checkbox"/> yes <input type="checkbox"/> no |
| <input type="checkbox"/> rain (steady rain) | <input type="checkbox"/> rain (steady rain) | Wind: 0 mph |
| <input type="checkbox"/> showers (intermittent) | <input type="checkbox"/> showers (intermittent) | Air Temperature: 76 °F |
| <u>100</u> % cloud cover | <u>80</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 throughout channel floor.

Water Color: Brown.

Estimated Depth: ~ 3 inches

Visibility: to bottom

Tide (if applicable): N/A

Notes: Heavy water flow. Wet, flowing upstream and downstream of channel. Leaf litter and vegetation debris build up in sections of the stream. Tall growing vegetation along the stream bed. Fallen branches scattered in and next to the stream. Dead branches are hanging over fence, making the fence lean.

SPECIES OBSERVATIONS

Fish Kill? Yes No # Dead Fish 0

Fish Breathing Stress/Gulping None Yes

Fish Abnormal Behavior None Yes

Notes: No waterbirds/shorebirds observed at this sight

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

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: 1/30/2023 Site Name: Discharge Site Time: 10:28 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 checked="" type="checkbox"/> storm (heavy rain) | <input checked="" type="checkbox"/> yes <input type="checkbox"/> no |
| <input type="checkbox"/> rain (steady rain) | <input type="checkbox"/> rain (steady rain) | Wind: 0 mph |
| <input checked="" type="checkbox"/> showers (intermittent) | <input type="checkbox"/> showers (intermittent) | Air Temperature: 78 °F |
| <u>100</u> % cloud cover | <u>80</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 throughout channel floor.

Water Color: Brown.

Estimated Depth: ~ 3 inches above discharge, ~ 1 foot down from discharge.

Visibility: Clear to bottom.

Tide (if applicable): N/A

Notes: Heavy water flow from above discharge. Wooden pallet above discharge on channel floor. Ladder above drainage. Stream clear of debris past discharge. Waddle present.

SPECIES OBSERVATIONS

Fish Kill? Yes No # Dead Fish 0

Fish Breathing Stress/Gulping None Yes

Fish Abnormal Behavior None Yes

Notes: Ladder above canal.

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

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: 1/30/2023

Site Name: Downstream Site # 1

Time: 10:57 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 checked="" type="checkbox"/> storm (heavy rain) | <input checked="" type="checkbox"/> yes <input type="checkbox"/> no |
| <input type="checkbox"/> rain (steady rain) | <input type="checkbox"/> rain (steady rain) | Wind: 1-3 mph |
| <input type="checkbox"/> showers (intermittent) | <input type="checkbox"/> showers (intermittent) | Air Temperature 76° F |
| <u>90</u> % cloud cover | <u>80</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: Sedimentation present on bottom of stream throughout.

Water Color: Transparent, brownish.

Estimated Depth: ~ 1 foot +.

Visibility: Visible to the bottom.

Tide (if applicable): N/A.

Notes: Heavy flow of water. Growing vegetation along the sides of the stream. Some rubbish along the top edge of the river. Rubbish and vegetation debris floating down river.

SPECIES OBSERVATIONS

Fish Kill? Yes No # Dead Fish 0

Fish Breathing Stress/Gulping None Yes

Fish Abnormal Behavior None Yes

Notes:

| Species Observed | # of individuals | Behavior | Notes/Observations |
|--------------------|------------------|-----------|---------------------------------|
| Small unknown fish | ~50 | Schooling | Schooled along stream bed edge. |

Halawa Stream Monitoring Data Sheet

PHOTOGRAPHS



Photograph #
1:
Downstream
Site #1 looking
upstream.

Halawa Stream Monitoring Data Sheet

Observer/s: _____

Date: 1/30/2023 Site Name: Downstream Site #2 Time: 11:05 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 checked="" type="checkbox"/> storm (heavy rain) | <input checked="" type="checkbox"/> yes <input type="checkbox"/> no |
| <input type="checkbox"/> rain (steady rain) | <input type="checkbox"/> rain (steady rain) | Wind: 1-3 mph |
| <input type="checkbox"/> showers (intermittent) | <input type="checkbox"/> showers (intermittent) | Air Temperature: 80 °F |
| <u>90</u> % cloud cover | <u>80</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 bottom of stream floor.

Water Color: Brownish gray

Estimated Depth: ~ 5 inches shallow section of channel, 4-5+ feet deep in the estuary portion of channel.

Visibility: To bottom in shallow section of channel, ~1 foot in deep portion of estuary channel.

Tide (if applicable): N/A

Notes: Heavy flow of water. Trash and vegetation debris floating downstream. Vegetation growth throughout the estuary. Significant vegetation growth on both sides of the stream. Turbid foam buildup along sides of the stream.

SPECIES OBSERVATIONS

Fish Kill? Yes No # Dead Fish 0

Fish Breathing Stress/Gulping None Yes

Fish Abnormal Behavior None Yes

Notes:

| Species Observed | # of individuals | Behavior | Notes/Observations |
|---------------------------|------------------|-------------------------|---|
| Black-crowned Night Heron | 4 | Foraging, Transitioning | Foraged in the middle of the estuary, Transitioned around estuary and under bridge. |
| Wandering Tattler | 1 | Transitioning | Transitioned around estuary stream. |
| Spotted Dove | 2 | Transitioning | Transitioned above estuary. |
| Red-vented Bulbul | 6 | Transitioning | Transitioned across stream. |

Halawa Stream Monitoring Data Sheet

| | | | |
|----------------------|---|-------------------------|---|
| Koloa/Mallard hybrid | 6 | Transitioning, Foraging | Transitioned from far side of the estuary and from in vegetation to middle of the stream. |
| Common Myna | 2 | Transitioning | Transitioned above stream. |
| House Sparrow | 1 | Transitioning | Transitioned above stream. |

PHOTOGRAPHS



Photograph # 1:
Downstream Site # 2 looking downstream

Halawa Stream Monitoring Data Sheet

Observer/s: _____

Date: 1/30/2023 Site Name: Estuary Site #1 Time: 11:50 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 checked="" type="checkbox"/> storm (heavy rain) | <input checked="" type="checkbox"/> yes <input type="checkbox"/> no |
| <input type="checkbox"/> rain (steady rain) | <input type="checkbox"/> rain (steady rain) | Wind: 1-3 mph |
| <input type="checkbox"/> showers (intermittent) | <input type="checkbox"/> showers (intermittent) | Air Temperature: 81°F |
| <u>100</u> % cloud cover | <u>80</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: High turbidity in water column.

Water Color: Opaque, green/brown, murky.

Estimated Depth: 5+ Feet

Visibility: ~ 1 Foot.

Tide (if applicable): Falling, 0.52 feet.

Notes: Minimal leaf litter flowing downstream. Large encampment next to bridge. Fishing line leading into stream attached to bridge.

SPECIES OBSERVATIONS

Fish Kill? Yes No # Dead Fish 0

Fish Breathing Stress/Gulping None Yes

Fish Abnormal Behavior None Yes

Notes: No waterbirds/shorebirds observed at this sight.

| Species Observed | # of individuals | Behavior | Notes/Observations |
|------------------|------------------|---------------|----------------------------|
| Spotted doves | 3 | Transitioning | Transitioned above stream. |
| Common waxbill | 1 | Transitioning | Transitioned above stream. |

Halawa Stream Monitoring Data Sheet

PHOTOGRAPHS



Photograph
1:
Estuary Site
#1 looking
upstream.

Halawa Stream Monitoring Data Sheet

Observer/s: _____

Date: 1/30/2023 Site Name: Estuary Site #2 Time: 11:31 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 checked="" type="checkbox"/> storm (heavy rain) | <input checked="" type="checkbox"/> yes <input type="checkbox"/> no |
| <input type="checkbox"/> rain (steady rain) | <input type="checkbox"/> rain (steady rain) | Wind: 1-3 mph |
| <input type="checkbox"/> showers (intermittent) | <input type="checkbox"/> showers (intermittent) | Air Temperature: 81.68 °F |
| <u>100</u> % cloud cover | <u>80</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: Turbidity increases as depth increases.

Water Color: Brownish-green, murky.

Estimated Depth: 5+ Feet.

Visibility: ~1 Foot.

Tide (if applicable): Falling, 0.53 feet.

Notes: Waddle present. Rubbish caught along waddle.

SPECIES OBSERVATIONS

Fish Kill? Yes No # Dead Fish 0

Fish Breathing Stress/Gulping None Yes

Fish Abnormal Behavior None Yes

Notes:

| Species Observed | # of individuals | Behavior | Notes/Observations |
|------------------|------------------|----------|------------------------------------|
| Java sparrow | 1 | Foraging | Foraged along stream bed in grass. |

Halawa Stream Monitoring Data Sheet

PHOTOGRAPHS



Photograph # 1:
Estuary Site #2 looking
upstream.

WATERBIRD SURVEY DATASHEET

| WETLAND CONDITION 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 | Cloud Cover (CC) = Estimate to the nearest 10% | | | | | |

Date 1-30-23

Island O'ahu

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'

Observers [REDACTED]

KEEP A COPY FOR YOUR RECORDS
Subadult includes juveniles and chicks

| Wetland Name | US | | | | DC | | | | DS 1 | | | | DS 2 | | | |
|--------------------------|--------------------------|----|--------|----|--------------------------|----|--------|----|--------------------------|----|---------|----|-----------------------------------|----|--------|----|
| | WL | VC | HI | SC | WL | VC | HI | SC | WL | VC | HI | SC | WL | VC | HI | SC |
| Condition | 3 | 0 | 0 | na | 3 | 0 | 0 | na | 3 | 0 | 0 | na | 3 | 10 | 0 | na |
| Weather | CC | RF | Wind | | CC | RF | Wind | | CC | RF | Wind | | CC | RF | Wind | |
| | 100 | 3 | 1 | | 100 | 3 | 0 | | 90 | 0 | 1 | | 90 | 0 | 1 | |
| Time | Start | | Stop | | Start | | Stop | | Start | | Stop | | Start | | Stop | |
| | 923am | | 928 am | | 1028am | | 1055am | | 1057am | | 11:03am | | 1105am | | 1122am | |
| COOT | adult | | | | | | | | | | | | | | | |
| | subadult | | | | | | | | | | | | | | | |
| GALLINULE/MOORHEN | adult | | | | | | | | | | | | | | | |
| | subadult | | | | | | | | | | | | | | | |
| STILT | adult | | | | | | | | | | | | | | | |
| | subadult | | | | | | | | | | | | | | | |
| KOLOA | adult | | | | | | | | | | | | | | | |
| | subadult | | | | | | | | | | | | | | | |
| Koloa/Mallard Hybrid | | | | | | | | | | | | | 6 (Adults/ Transitioning) | | | |
| Mallard (domestic/feral) | | | | | | | | | | | | | | | | |
| Other Domestic Duck | | | | | | | | | | | | | | | | |
| Black-cr. Night Heron | | | | | | | | | | | | | 4 (Adult/ Foraging/Transitioning) | | | |
| Cattle Egret | | | | | | | | | | | | | | | | |
| Pacific Golden Plover | | | | | | | | | | | | | 1 (Adult/ Foraging) | | | |
| Ruddy Turnstone | | | | | | | | | | | | | | | | |
| Sanderling | | | | | | | | | | | | | | | | |
| Wandering Tattler | | | | | | | | | | | | | 1 (Adult/ Transitioning) | | | |
| Northern Pintail | | | | | | | | | | | | | | | | |
| Mallard (migratory) | | | | | | | | | | | | | | | | |
| Lesser scaup | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| Comments | no waterbirds/shorebirds | | | | no waterbirds/shorebirds | | | | no waterbirds/shorebirds | | | | | | | |

WATERBIRD SURVEY DATASHEET

| WETLAND CONDITION 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 1-30-23

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

Observers ██████████

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

Island O'ahu

KEEP A COPY FOR YOUR RECORDS

Subadult includes juveniles and chicks

| Wetland Name | ES 1 | | | | ES 2 | | | | | | | | | | | |
|----------------------------|--------------------------|----|--------|----|--------------------------|----|--------|----|-------|----|------|----|-------|----|------|----|
| | WL | VC | HI | SC | WL | VC | HI | SC | WL | VC | HI | SC | WL | VC | HI | SC |
| Condition | 3 | 0 | 0 | 1 | 3 | 0 | 0 | 1 | | | | | | | | |
| Weather | CC | RF | Wind | | CC | RF | Wind | | CC | RF | Wind | | CC | RF | Wind | |
| Time | Start | | Stop | | Start | | Stop | | Start | | Stop | | Start | | Stop | |
| | 1150am | | 1154am | | 1131m | | 1139am | | | | | | | | | |
| COOT adult | | | | | | | | | | | | | | | | |
| COOT subadult | | | | | | | | | | | | | | | | |
| GALLINULE/MOORHEN adult | | | | | | | | | | | | | | | | |
| GALLINULE/MOORHEN subadult | | | | | | | | | | | | | | | | |
| STILT adult | | | | | | | | | | | | | | | | |
| STILT subadult | | | | | | | | | | | | | | | | |
| KOLOA adult | | | | | | | | | | | | | | | | |
| KOLOA 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 | | | | | | | | | | | | | | | | |
| White Tern | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
| Comments | no waterbirds/shorebirds | | | | no waterbirds/shorebirds | | | | | | | | | | | |