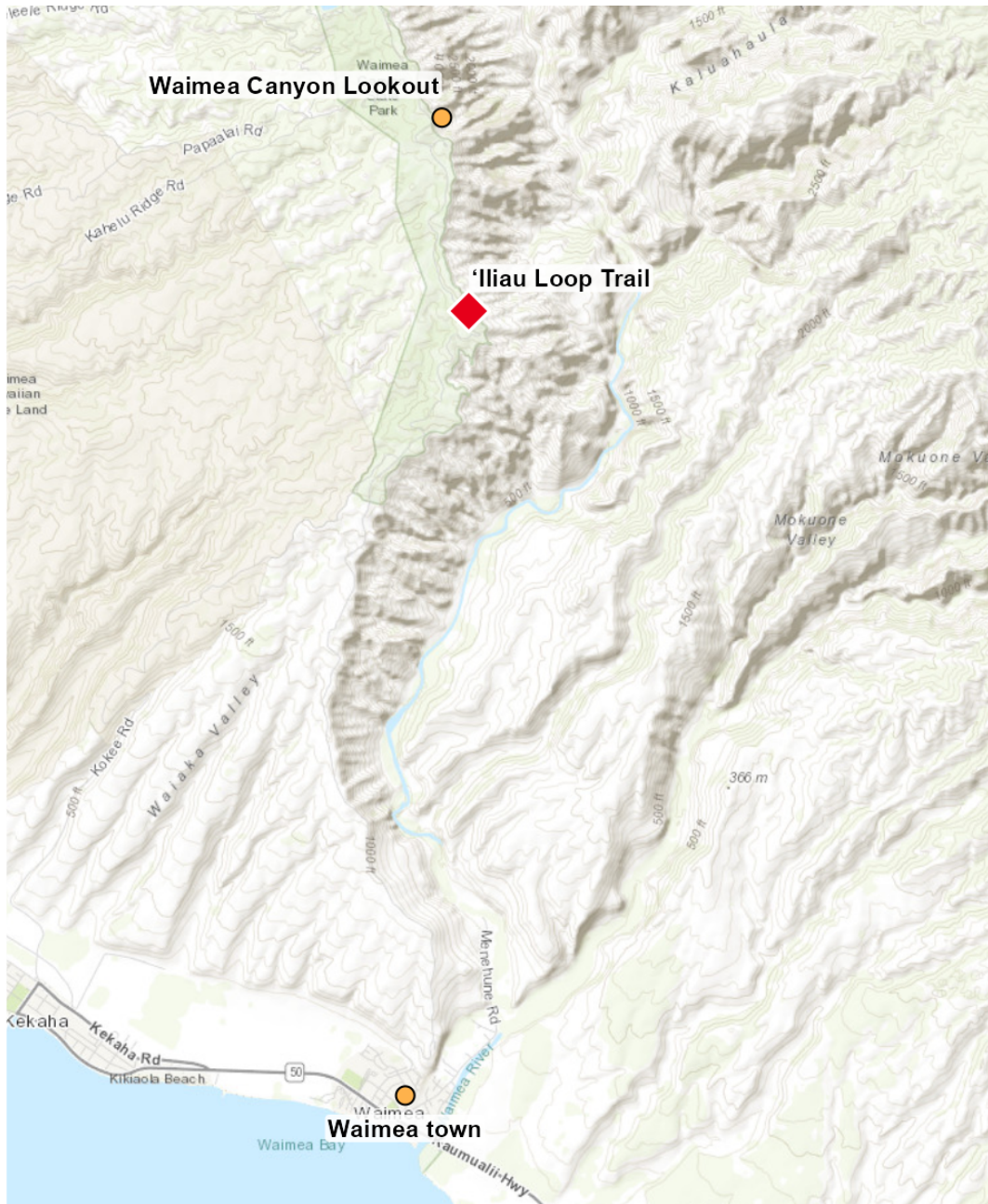


‘Iliau Loop Trail

A Field Briefing Book

briefing_book · observe & report · data-driven specimen collection



Base: Esri World Topographic Map

Koke'e / Waimea Canyon, Kaua'i · 22.05176°N 159.65935°W · 886 m (canyon rim)

‘iliu (Wilkesia, silversword alliance) · a treasure house of endangered endemics — OBSERVE & REPORT

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the one-page, carry-in-field summary — observe-and-report first

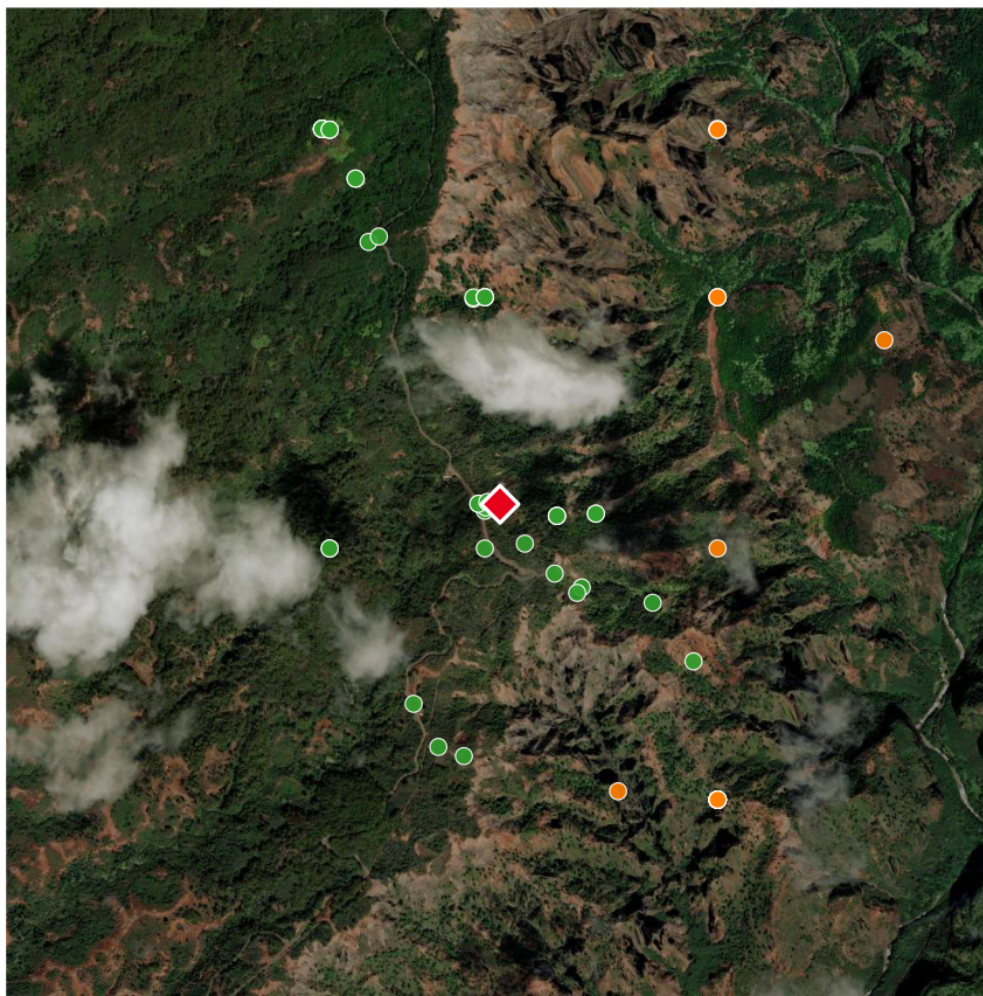
The Place — A Vertical Site

briefing_book · Report R1 · 'Iliau Loop Trail

Koke'e / Waimea Canyon, Kaua'i · 22.05176°N 159.65935°W · 886 m

'Iliau Loop Trail: voucher specimens by elevation zone

Each point is a herbarium voucher-specimen location



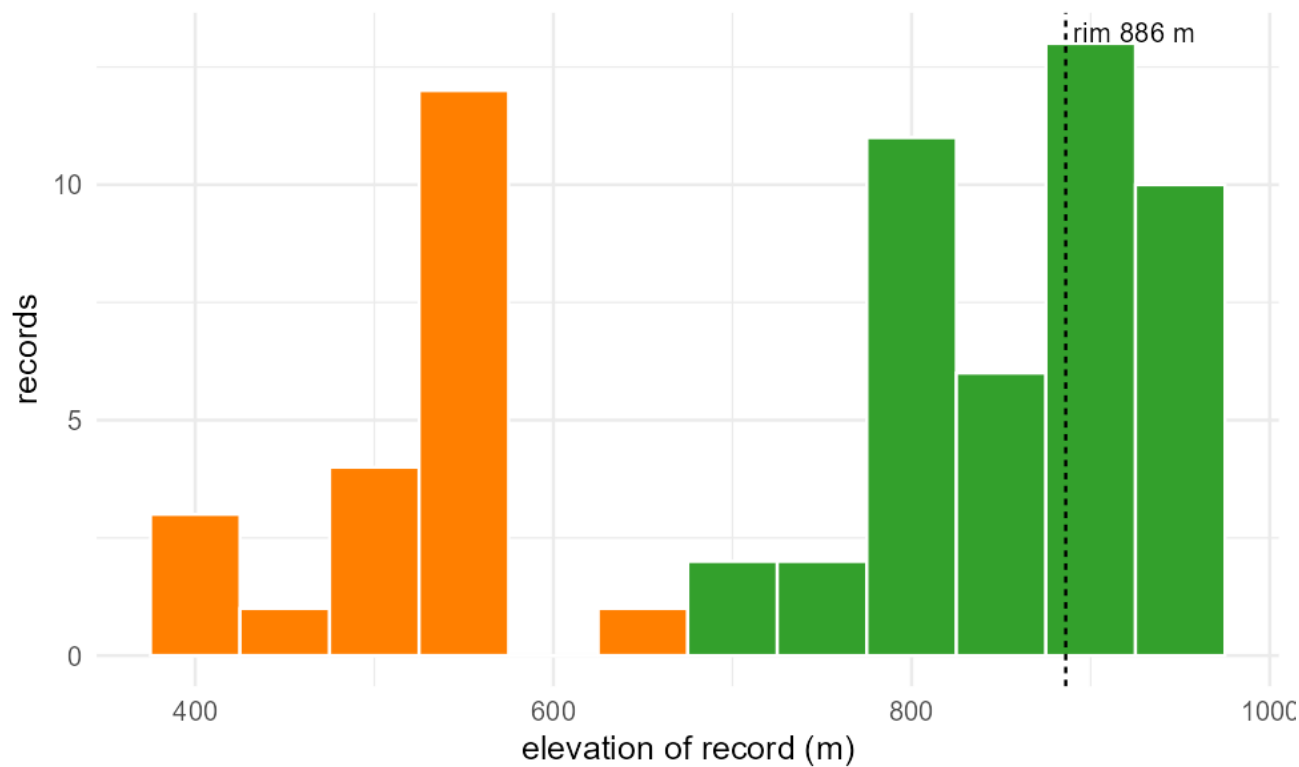
● canyon / lower slope ● rim (loop trail)

Red diamond = loop-trail centre (886 m). Canyon points are near in plan, far below in fact. Base: Esri World Imagery.

Each point is the location of a herbarium VOUCHER SPECIMEN. This site is defined by ELEVATION, not radius: the loop trail runs the canyon rim at ~886 m, but a 2 km circle drops 400+ m into Waimea Canyon, sweeping in records near in plan yet unrelated in fact. 31% (21 of 65) sit on the canyon floor / lower slope (below ~600 m) — 9 taxa found only there. Elevation cleanly separates the true rim site (44 records, 28 taxa, including the 'ilīau) from the canyon confusion. The place-identity problem is worse than at Kīpuka Puauulu, for a concrete reason: the trailhead is nearly invisible at highway speed with almost no parking, so pre-GPS collectors could not easily fix where they were.

The elevation discriminator

A vertical site: the elevation split



zone	records	taxa	unique to zone
rim (loop trail, ≥700 m)	44	28	22
canyon / lower slope (<700 m)	21	15	9

The rim flora is the site: 28 taxa on the loop-trail rim, including *Wilkesia gymnoxiphium* (‘iliau — silversword alliance, Kaua’i endemic; 1 voucher, scarce) and Kaua’i endemics such as *Hibiscus waimeae* and *Solanum sandwicense*. Use elevation to include or exclude vouchers for any ‘iliau analysis — canyon-floor collections belong to a different place. Centre = the loop-trail centre, 886 m.

The Rim Checklist (Master List)

briefing_book · Report R2 · 'Iliau Loop Trail

the reference the other reports draw on

All 28 vascular taxa recorded on the loop-trail RIM (≥ 700 m; canyon-floor records excluded — see R1). 'role' shows how each appears in this briefing: observe (protected), collect (a target), or present (recorded, not a target). Sorted by family.

taxon	family	life	status	iucn	last	role
<i>Foeniculum vulgare</i>	Apiaceae	herb	introduced	NE	1977	present
<i>Ilex cornuta</i>	Aquifoliaceae	tree	NA	LC	1986	present
<i>Dianella sandwicensis</i>	Asphodelaceae	herb	indigenous	NE	2017	collect
<i>Bidens sandvicensis</i>	Asteraceae	herb	endemic	VU	1960	observe
<i>Wilkesia gymnoxiphium</i>	Asteraceae	shrub	endemic	EN	1974	observe
<i>Casuarina glauca</i>	Casuarinaceae	tree	introduced	NE	2021	collect
<i>Carex meyenii</i>	Cyperaceae	graminoid	indigenous	NE	2014	present
<i>Carex wahuensis</i>	Cyperaceae	graminoid	endemic	NE	2020	collect
<i>Gahnia aspera</i>	Cyperaceae	graminoid	indigenous	NE	2015	present
<i>Leptecophylla tameiameia</i>	Ericaceae	tree	indigenous	LC	2019	collect
<i>Euphorbia atrococca</i>	Euphorbiaceae	herb	indigenous	EN	1936	observe
<i>Acacia mearnsii</i>	Fabaceae	tree	introduced	NE	1983	collect
<i>Scaevola gaudichaudii</i>	Goodeniaceae	shrub	endemic	NE	2014	collect
<i>Huperzia serrata</i>	Lycopodiaceae	fern	indigenous	NE	1909	collect
<i>Lycopodium venustulum</i>	Lycopodiaceae	fern	indigenous	NE	1909	collect
<i>Hibiscus waimeae</i>	Malvaceae	tree	endemic	EN	1960	observe
<i>Sida cordifolia</i>	Malvaceae	shrub	introduced	NE	2011	collect
<i>Metrosideros polymorpha</i>	Myrtaceae	tree	endemic	VU	2012	observe
<i>Pisonia sandwicensis</i>	Nyctaginaceae	tree	NA	LC	2022	present
<i>Passiflora tarminiana</i>	Passifloraceae	herb	introduced	NE	1960	collect
<i>Eragrostis variabilis</i>	Poaceae	graminoid	endemic	NE	1977	collect
<i>Myrsine lanaiensis</i>	Primulaceae	tree	endemic	LC	2014	collect
<i>Doryopteris decipiens</i>	Pteridaceae	fern	NA	NE	1960	present
<i>Psychotria hexandra</i>	Rubiaceae	tree	endemic	EN	NA	observe
<i>Melicope haupuensis</i>	Rutaceae	tree	endemic	CR	1977	observe
<i>Dodonaea viscosa</i>	Sapindaceae	tree	introduced	LC	1976	collect
<i>Solanum sandwicense</i>	Solanaceae	shrub	indigenous	CR	1982	observe
<i>Viola tracheliiifolia</i>	Violaceae	herb	NA	NE	1974	present

Known here — but not in the record

Collection / digitization gaps (from local knowledge)

- *Santalum* (‘iliahi / sandalwood) — present on the trail per local knowledge, and in the surrounding Koke’e/Waimea flora (8 regional records), but NO voucher from the loop itself.
- *Acacia koa* — regionally abundant (12 regional records), plausibly present but unvouchered here.

These are exactly the kind of gap a master list surfaces: a taxon a knowledgeable visitor expects, absent from the digital record. *Santalum* in particular would be a HIGH-VALUE voucher target — it would fill a real gap. The checklist above is the RECORD; the flora is larger. Worth confirming and collecting on a visit.

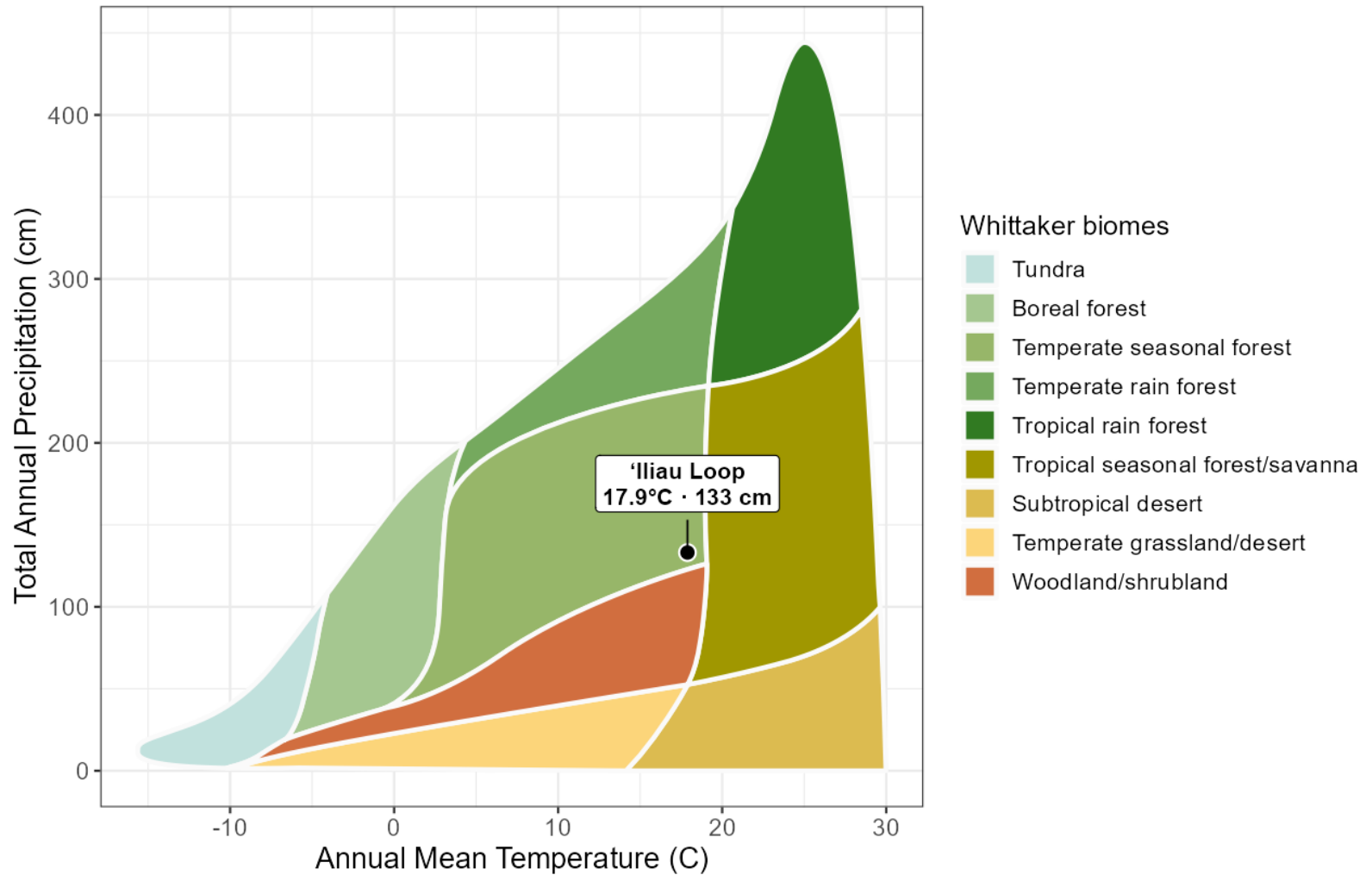
Climate & Site Factors

briefing_book · Report R7 · 'Iliau Loop Trail

Koke'e / Waimea Canyon, Kaua'i · 886 m

'Iliau Loop on the Whittaker diagram

Climate position among the world's biomes (WorldClim 2.1)



A drier, warmer canyon-rim site than Kīpuka Puauulu (17.9 °C / 1331 mm vs 16.2 / 1679). It sits on the Waimea Canyon rim, on the road that climbs from sea level to the Alaka'i rainforests — a steep gradient the 2 km window captures (78–1121 m). Same Whittaker anomaly: a Hawaiian montane site reads 'temperate' because the global scheme sees only temperature and precipitation.

Climate & terrain of the site

temperature	value	precipitation	value
annual mean	17.9 °C	annual total	1331 mm (133 cm)
warmest month	24.3 °C	wettest month	346 mm
coldest month	11.1 °C	driest month	31 mm
annual range	13.2 °C	seasonality (CV)	80 — moderate
seasonality (bio4)	195 — low		

terrain	value
rim (loop-trail centre)	886 m
elevation range, 2 km	78 – 1121 m (canyon to rim)
slope	6°
aspect	66°

Substrate/setting: a dry-to-mesic canyon rim above Waimea Canyon (leeward Kaua'i), part of the silversword-alliance 'iliau's habitat. Climate = WorldClim 2.1 (~1 km, coarse for Kaua'i's steep gradients; the Hawai'i Rainfall Atlas is finer). Elevation from AWS terrain tiles (elevatr).

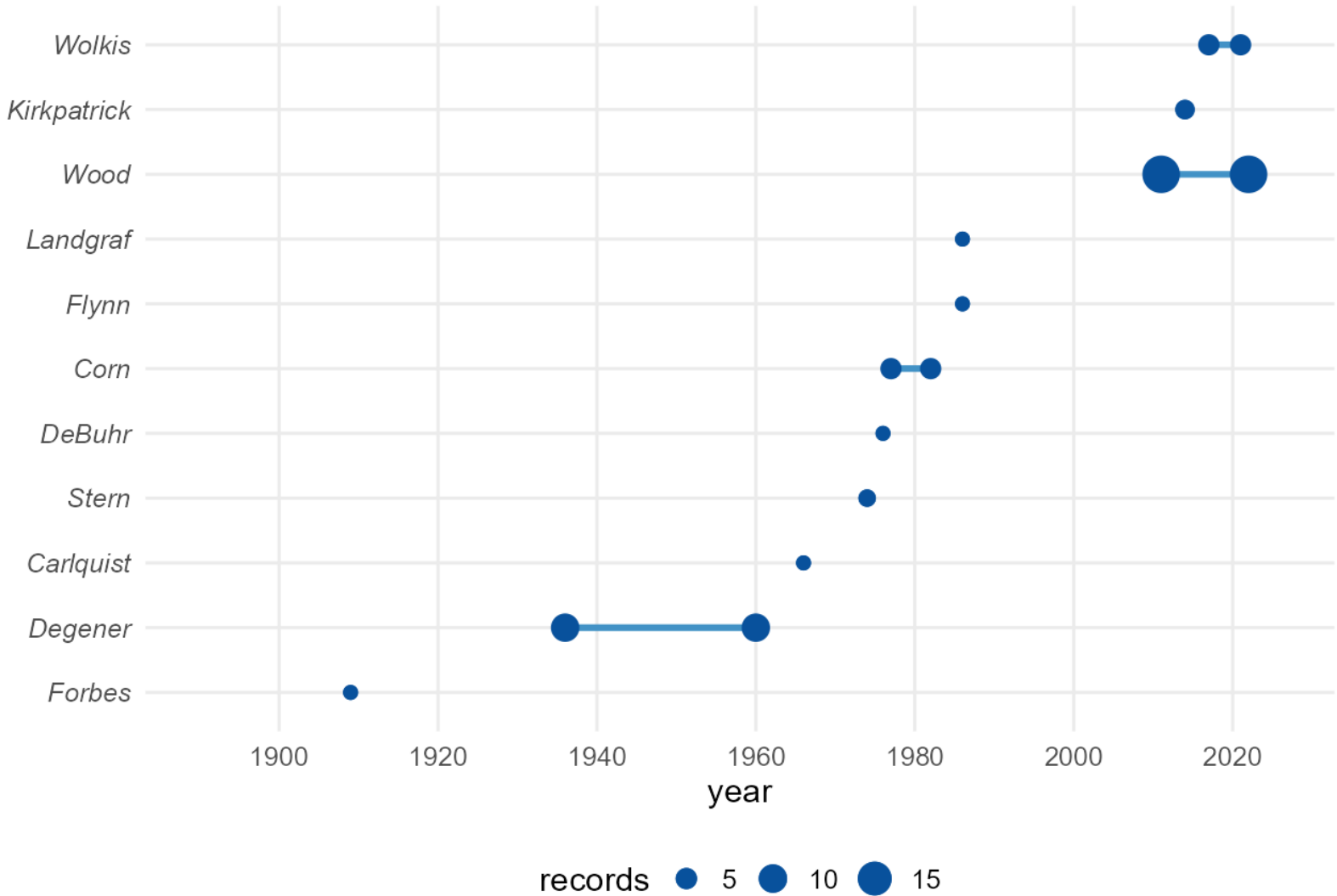
Herbaria & Collectors

A dispersed, MODERN, mainland-herbaria record — the opposite of Kīpuka Puʻaʻulu's Bishop-dominated one. The US National Herbarium leads (26%), and CAS is still actively submitting (through 2025); Bishop's ‘Iliau material stops at 1986. The oldest are scattered worldwide (Minnesota 1895; the 1909 clubmosses at AK). What's LEFT OFF matters too: NTBG (Kaua'i) and the in-region collections are the ones to ask about — they know this canyon rim best.

herbarium	records	pct	taxa	span	yrs since last
US	17	26	15	2011–2019	7
BISH	9	14	6	1977–1986	40
CAS	8	12	6	2013–2025	1
NY	6	9	6	2011–2014	12
AK	5	8	4	1909–1960	66
RSA	5	8	2	1966–1974	52
SFV	4	6	3	1960–1960	66
HO	2	3	1	1976–1976	50
MEL	2	3	0	1960–1960	66
MSC	2	3	1	1955–1960	66
MIN	1	2	1	1895–1895	131
MO	1	2	1	1960–1960	66
MU	1	2	1	1960–1960	66
USU	1	2	1	1983–1983	43
WIS	1	2	1	1936–1936	90

Who collected here, and when

Collectors with more than one 'Iliau record



Two eras, thinly connected: a sparse early record (Kaua'i canyon botanists 1895–1960) and a modern Ken-Wood / CAS-era resurgence (2010s–2025). A single dot = one collecting year; dot size = records. The LIVING record runs through CAS and the US National Herbarium — good partners for a visit.

Observe · Report · Collect

This site is a TREASURE HOUSE — and the treasures are ENDANGERED. Six of the 28 rim taxa are native CR/EN, including the ‘iliau itself (*Wilkesia gymnoxiphium*, silversword alliance, Kaua’i endemic). The focus here is OBSERVE & REPORT: photograph them, note location and condition, and report sightings to conservation (NTBG / DOFAW). Do NOT collect listed taxa. A thin, non-protected collectable set follows on the next page.

Observe & report — DO NOT collect (native CR/EN)

taxon	family	lifeform	iucn	last	distinctive
<i>Wilkesia gymnoxiphium</i>	Asteraceae	shrub	EN	1974	
<i>Melicope haupuensis</i>	Rutaceae	tree	CR	1977	yes
<i>Solanum sandwicense</i>	Solanaceae	shrub	CR	1982	yes
<i>Euphorbia atrococca</i>	Euphorbiaceae	herb	EN	1936	
<i>Hibiscus waimeae</i>	Malvaceae	tree	EN	1960	
<i>Psychotria hexandra</i>	Rubiaceae	tree	EN	NA	yes

Photograph each: whole plant, leaf, flower/fruit if present, and the setting. ‘iliau (*Wilkesia*) flowers once then dies (monocarpic) — a flowering plant is worth documenting well.

Caution, and the collectable few

briefing_book · Report R3+R4 (cont.)

VU/NT to verify · non-protected targets

Caution — VU / NT (verify locally)

taxon	family	lifeform	iucn	last
<i>Bidens sandvicensis</i>	Asteraceae	herb	VU	1960
<i>Metrosideros polymorpha</i>	Myrtaceae	tree	VU	2012

Collectable — non-protected (□ high-value · • easy win)

taxon	family	lifeform	status	last	reg	locate	why
<i>Huperzia serrata</i>	Lycopodiaceae	fern	indigenous	1909	1	approx	□
<i>Lycopodium venustulum</i>	Lycopodiaceae	fern	indigenous	1909	2	approx	□
<i>Acacia mearnsii</i>	Fabaceae	tree	introduced	1983	1	approx	•
<i>Sida cordifolia</i>	Malvaceae	shrub	introduced	2011	3	GPS	•
<i>Scaevola gaudichaudii</i>	Goodeniaceae	shrub	endemic	2014	3	nominal	□
<i>Casuarina glauca</i>	Casuarinaceae	tree	introduced	2021	1	GPS	•
<i>Passiflora tarminiana</i>	Passifloraceae	herb	introduced	1960	9	nominal	•
<i>Dodonaea viscosa</i>	Sapindaceae	tree	introduced	1976	12	nominal	•
<i>Eragrostis variabilis</i>	Poaceae	graminoid	endemic	1977	6	approx	□
<i>Myrsine lanaiensis</i>	Primulaceae	tree	endemic	2014	4	nominal	□
<i>Dianella sandwicensis</i>	Asphodelaceae	herb	indigenous	2017	8	GPS	•
<i>Leptecophylla tameiameia</i>	Ericaceae	tree	indigenous	2019	7	nominal	•
<i>Carex wahuensis</i>	Cyperaceae	graminoid	endemic	2020	5	GPS	□

'reg' = records in the 8 km Koke'e/Waimea pool (low = distinctive to this site). 'locate': GPS / approx (pre-GPS georeference) / nominal. The two clubmosses (*Huperzia*, *Lycopodium*) were last collected in 1909 and are regionally scarce — the best genuine targets. Staleness = collecting gap, not rarity.

Contested Identities

briefing_book · Report R5 · 'Iliau Loop Trail

BISH/BPBM same-sheet determination conflicts

A CLEAN record. Unlike Kīpuka Puʻaʻulu (8 same-sheet BISH/BPBM double-entry conflicts, 3 real), the 'Iliau Loop record shows NO same-sheet determination conflicts. The reason is the collecting history (see Herbaria & Collectors): 'Iliau's record is modern and dispersed across mainland herbaria (US, CAS, NY), not the Bishop double-entry system that generates phantom taxa. Fewer institutions double-submitting one physical sheet means fewer contradictions to resolve. What this means for the visit: determinations here can be taken more at face value — the caution shifts from 'which name is right?' to 'is this taxon correctly identified at all?', best answered by photographs and a specialist (many are the endangered endemics on the Observe page).

‘Iliau Loop Trail — Field Card

briefing_book · OBSERVE & REPORT first · Koke'e / Waimea Canyon, Kaua'i

OBSERVE & REPORT — photograph, DO NOT collect (native CR/EN)

taxon	family	life	iucn
Wilkesia gymnoxiphium	Asteraceae	shrub	EN
Melicope haupuensis	Rutaceae	tree	CR
Solanum sandwicense	Solanaceae	shrub	CR
Euphorbia atrococca	Euphorbiaceae	herb	EN
Hibiscus waimeae	Malvaceae	tree	EN
Psychotria hexandra	Rubiaceae	tree	EN

Collectable few — non-protected

taxon	family	life	status	last	reg
Huperzia serrata	Lycopodiaceae	fern	indigenous	1909	1
Lycopodium venustulum	Lycopodiaceae	fern	indigenous	1909	2
Acacia mearnsii	Fabaceae	tree	introduced	1983	1
Sida cordifolia	Malvaceae	shrub	introduced	2011	3
Scaevola gaudichaudii	Goodeniaceae	shrub	endemic	2014	3
Casuarina glauca	Casuarinaceae	tree	introduced	2021	1
Passiflora tarminiana	Passifloraceae	herb	introduced	1960	9

SITE. Canyon-rim, 886 m; a 2 km circle drops to 78 m in Waimea Canyon — STAY ON THE RIM (≥ 700 m). 17.9 °C, 1331 mm. Centre 22.05176°N 159.65935°W. Access: trailhead nearly invisible at highway speed, almost no parking — slow down near it.

PHOTOGRAPH each treasure: whole plant, leaf, flower/fruit, setting. ‘ilīau flowers once then dies — document a flowering plant well. Report sightings to NTBG / DOFAW. The side trail into the canyon: go only a short way. Herbarium visit: CAS + US National Herbarium hold the living record; ask NTBG (Kaua'i).