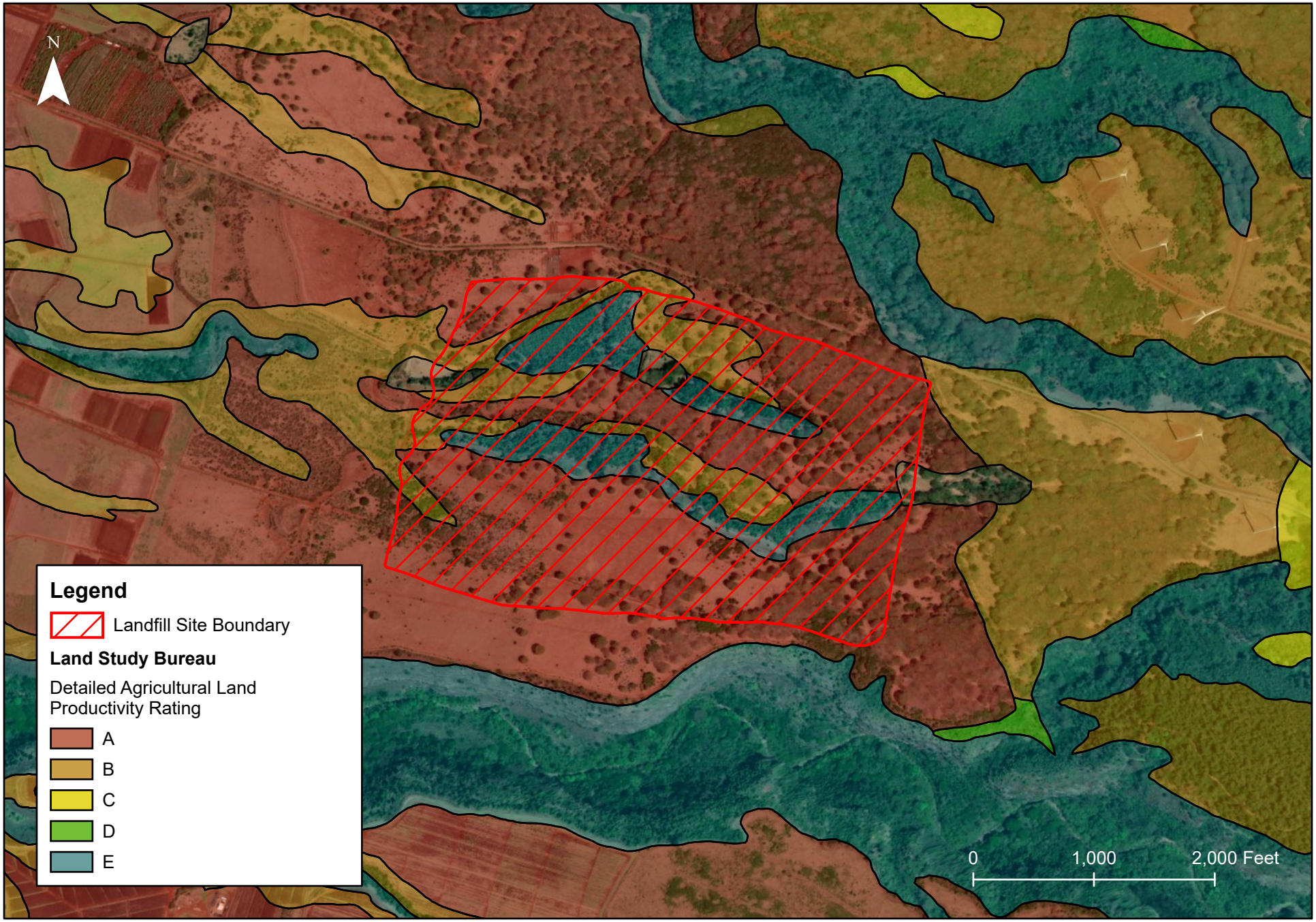
ATTACHMENT 10

SUBJECTIVE SCORING CRITERIA

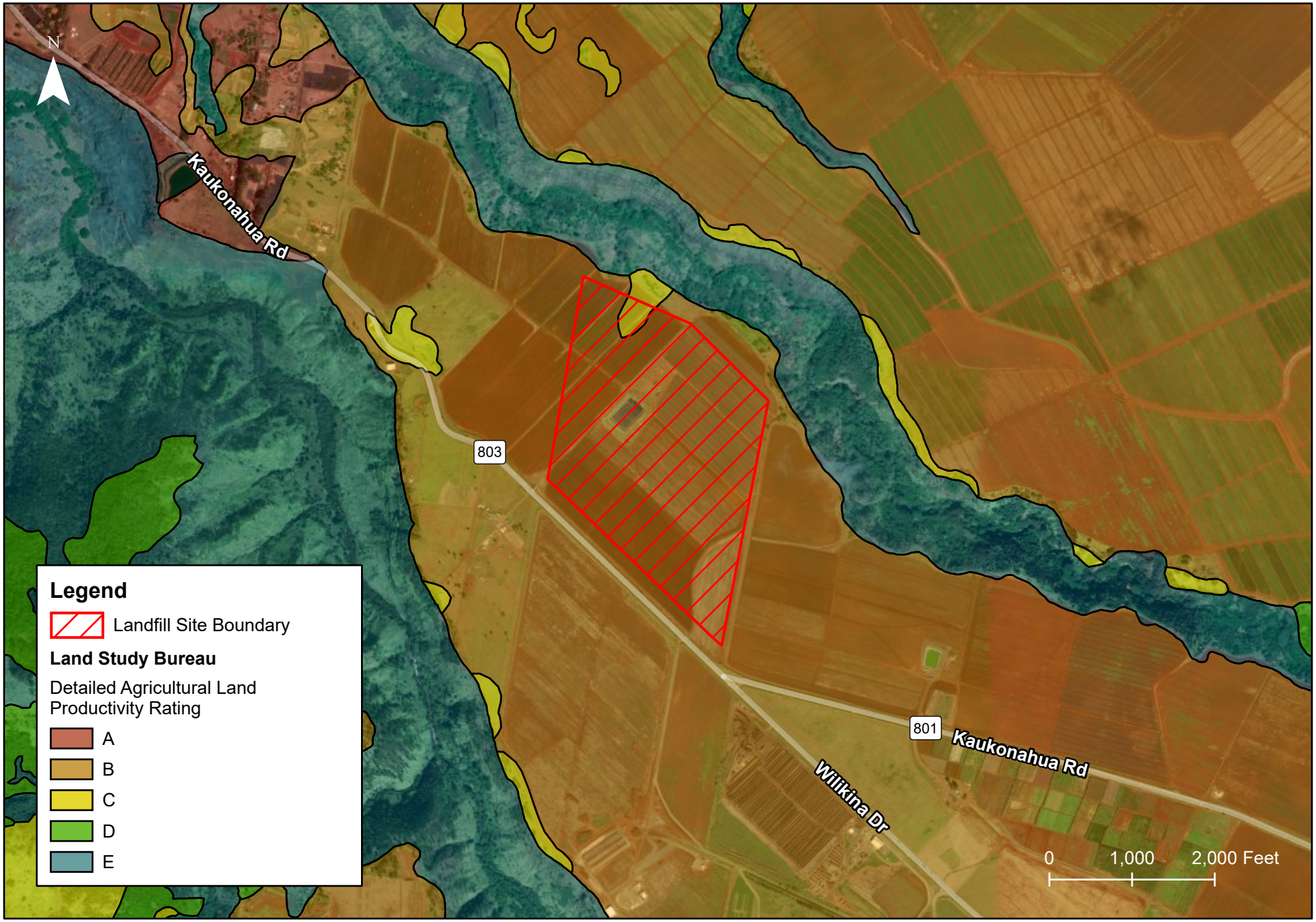
10. LAND USE DISPLACEMENT

SUPPORT INFORMATION

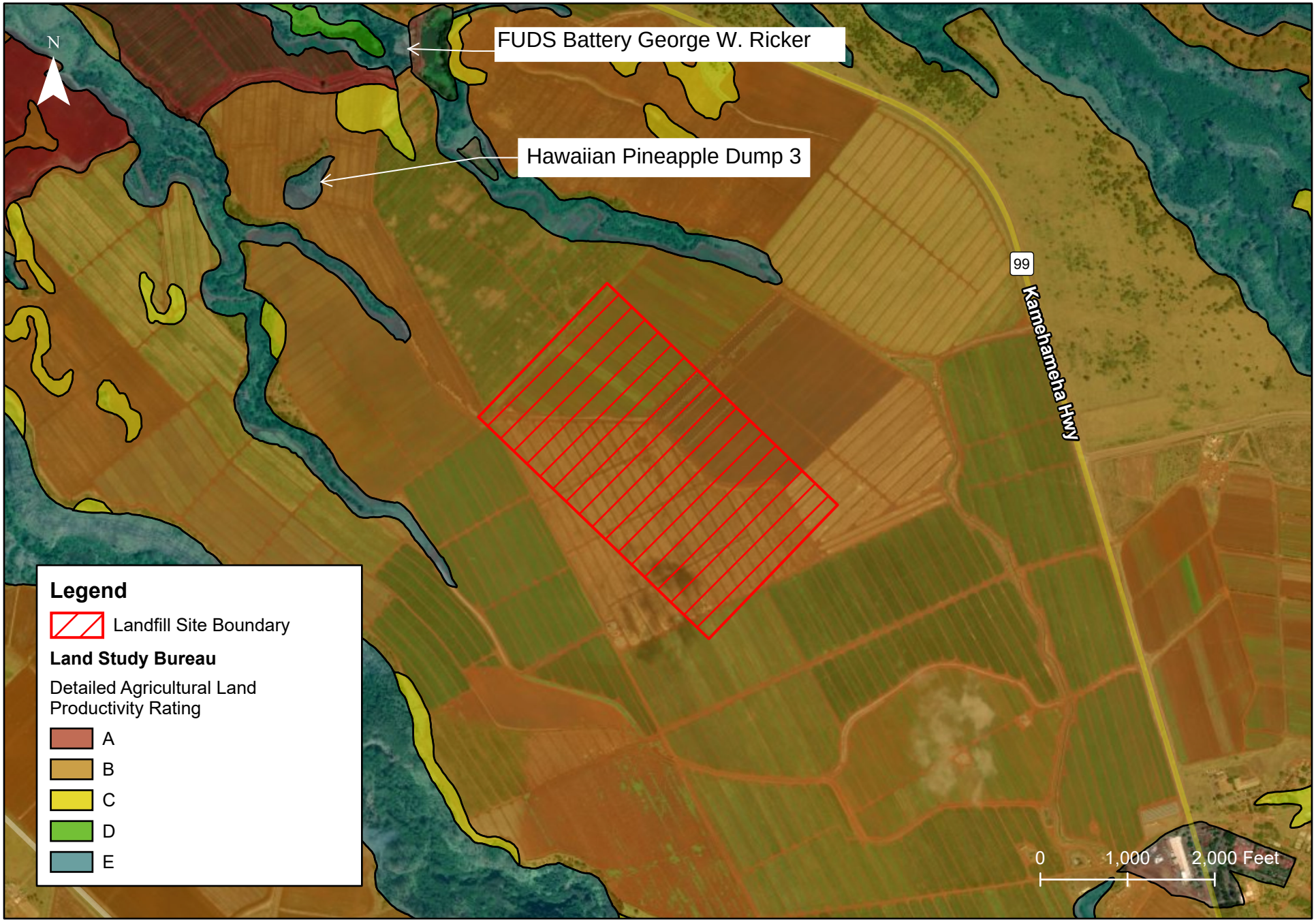
Oahu Landfill Siting Study
10. Land Use Displacement
Area 2, Site 1



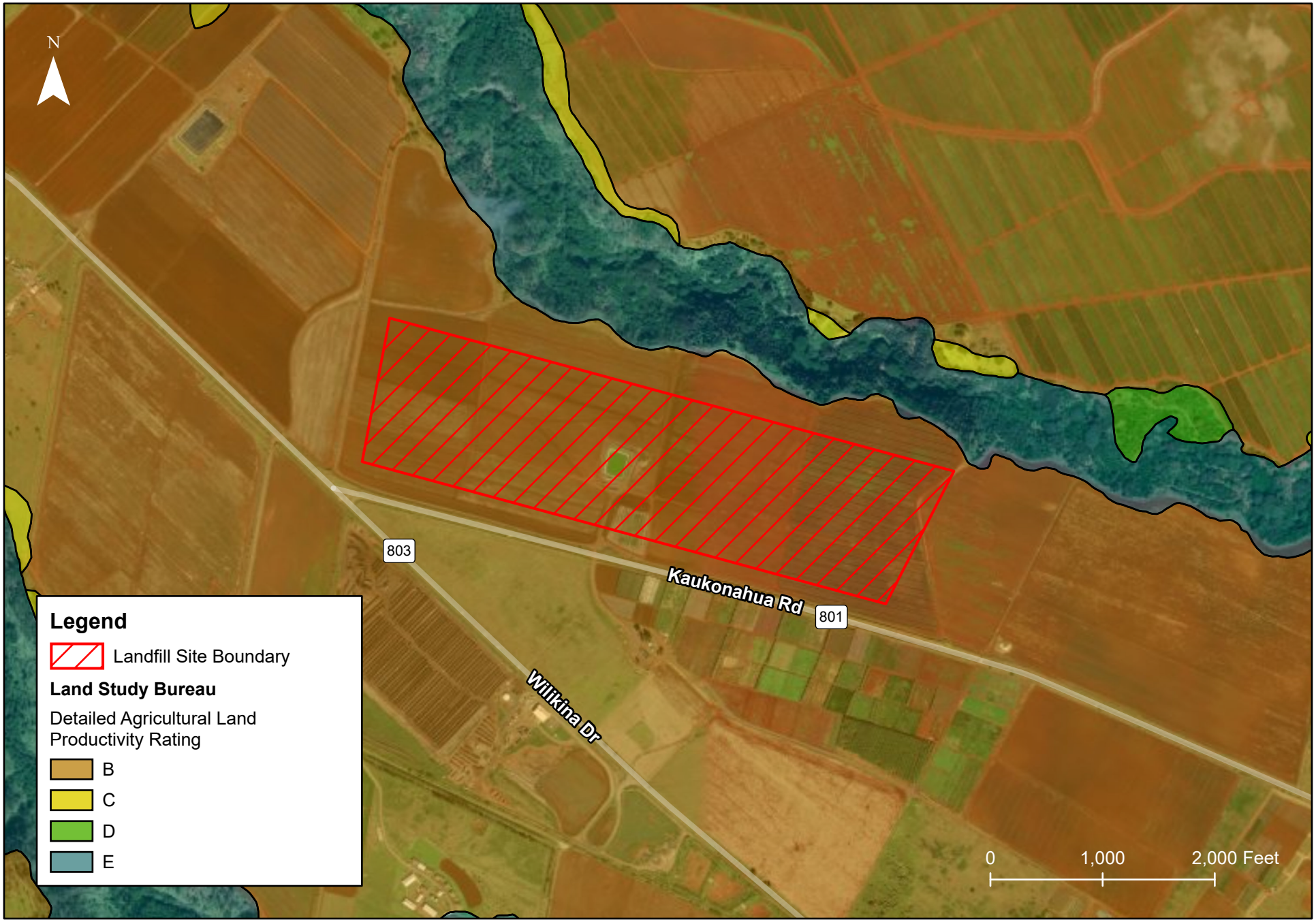
Oahu Landfill Siting Study
10. Land Use Displacement
Area 3, Site 1



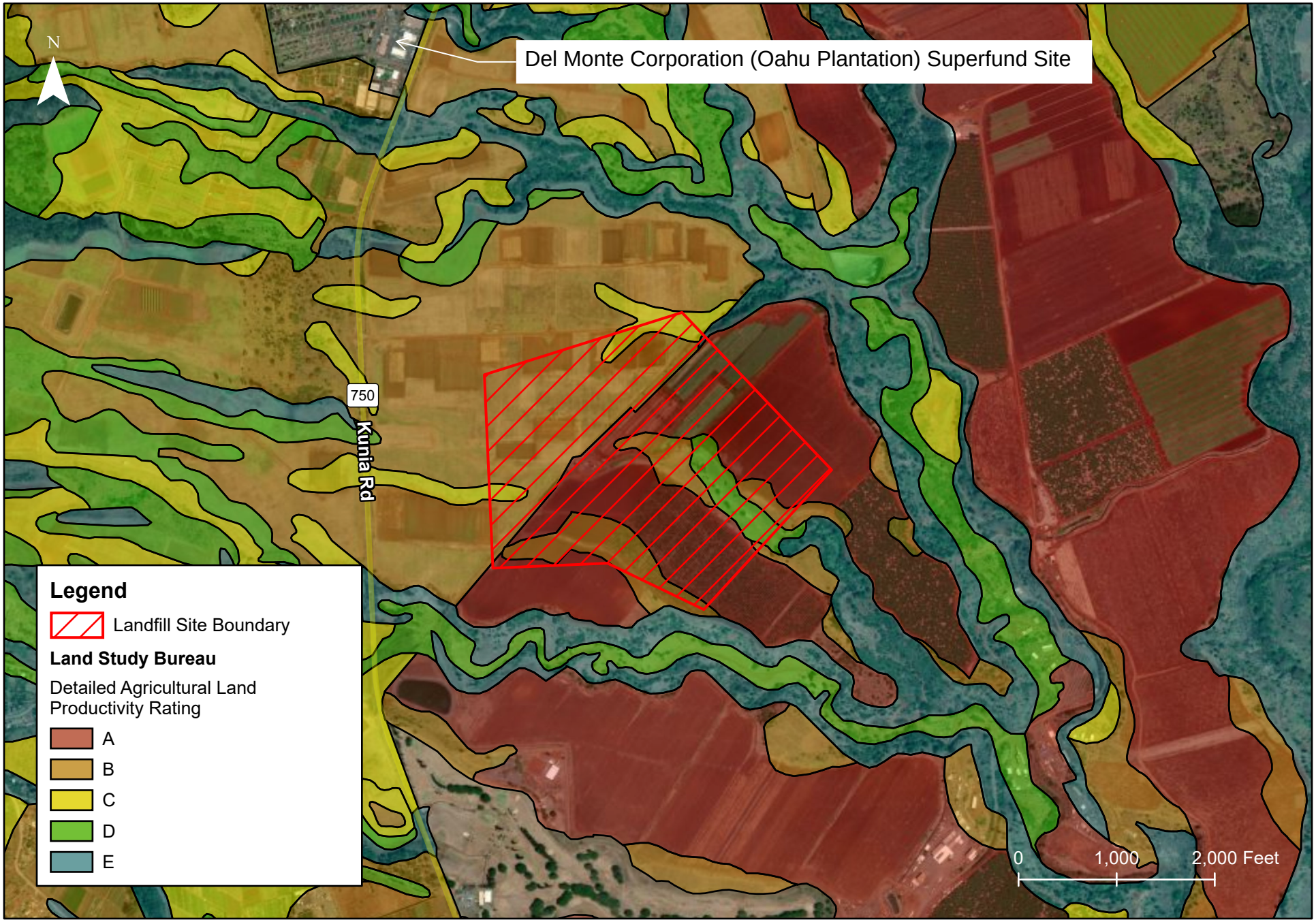
Oahu Landfill Siting Study
10. Land Use Displacement
Area 3, Site 2



Oahu Landfill Siting Study
10. Land Use Displacement
Area 3, Site 3



Oahu Landfill Siting Study
10. Land Use Displacement
Area 6, Site 1



Oahu Landfill Siting Study
10. Land Use Displacement
Area 7, Site 1

10. Land Use Displacement
Land Use Designations and Descriptions

State and County Land Use Designations

Designations:

Table 1					
Site	**TMK**	**SLUD**	**Zoning**	**DP/SCP**	**LSB Ratings**
Area 2, Site 1	62009001	A	AG-1	A	ABE
Area 3, Site 1	65002031	A	AG-1	A	BC
Area 3, Site 2	64003022	A	AG-1	A	B
Area 3, Site 3	65002010	A	AG-1	A	B
Area 6, Site 1	92005022	A	AG-1	A	ABCDE
	94004004	A	P-2 / AG-1	A	ABCDE
	92005001	A	AG-1	A	ABCDE
Area 7, Site 1	92001020	A	AG-1	A	AB

SLUD - State Land Use District Designation

A	Agricultural	Includes lands for cultivation of crops, aquaculture, raising livestock, wind energy facility, timber cultivation, agriculture-support activities (i.e., mills employee quarters, etc.) and land with significant potential for agriculture uses.

Zoning – City and County of Honolulu Zoning Designation

AG-1	Restricted Agricultural	Intent of AG-1 is to conserve and protect important agricultural lands for the performance of agricultural functions by permitting only those uses which perpetuate the retention of these lands in the production of food, feed, forage, fiber crops and horticultural plants.
P-2	General Preservation	Intent of P-2 is to preserve and manage open space and recreation lands and lands of scenic and other natural resource value. Includes lands removed from the P-1 or F-1 designation, lands well-suited to the functions of providing visual relief and contrast to the city's built environment or serving as outdoor space for the public's use and enjoyment, and areas unsuitable for other uses because of topographical considerations related to public health, safety and welfare concerns.

10. Land Use Displacement
Land Use Designations and Descriptions

DP/SCP - Land Use Designation in the Development Plan or Sustainable Communities Plan

A Agriculture

LSB Rating – Land Study Bureau Rating of the Overall Quality of the Land in Terms of Agricultural Productivity.

A Excellent
B Good
C Fair
D Poor
E Very Poor

Refer to the attached Metadata sheet for method of determining LSB Ratings and attached Figures showing LSB ratings for each site.

Known Detriments on Potential Landfill Site Parcels

Area 3, Site 2

The WWII era Formerly Used Defense Site (FUDS) Battery George W. Ricker is located on this parcel. A site visit by R.M. Towill Corporation in January 1993 reported the presence of underground structures and tunnels used to support artillery guns salvaged from the U.S.S. Lexington and U.S.S. Saratoga Navy ships. The Hazard Probability and Hazard Severity was listed as Improbable and none, respectively, and having a Risk Assessment Code value of 5 which is considered "No Action Required".

Sources:

1. Defense Environmental Restoration Program, Formerly Used Defense Sites, Inventory Project Report, Battery George W. Ricker, Waialua, Oahu, Hawaii, Site No. H09HI004700, U.S. Army Corps of Engineers, Pacific Ocean Division, September 1994
2. Field Letter Report for Property Formerly Used by the DOD, DERP-FUDS Site No. H09HI004700; Battery George W. Ricker, Oahu, Hawaii, R.M. Towill Corporation, April 29, 1993
3. State of Hawaii, Hazard Evaluation and Emergency Response System, Document 152556

10. Land Use Displacement
Land Use Designations and Descriptions

Area 3, Site 2

Hawaiian Pineapple Dump 3, operated by the Hawaiian Pineapple Company (which became Dole), was likely used to dispose of plantation refuse. Although no records on the period of operation were located, the dump probably operated during the 1940s to 1950. There was no documentation found to indicate that the dump was permitted, lined, capped, or properly closed. The dump was probably small and was likely located at the edge of an agricultural field in a gulch not useable for farming. The former dump was probably a burn and dump operation. The site was listed as a Category 2 dump which is defined as "Mauka of the No-Pass Line and greater than one mile from the nearest drinking water well. These landfills have a moderate potential to impact drinking water wells".

Sources:

1. Oahu Inactive Landfills Relative Risk Evaluation, Final Report, Honolulu, Hawaii, URS, December 2006

Area 6, Site 1

In April 1977, an accidental spill involving approximately 495 gallons of the previously-registered soil fumigant 1,2- dibromoethane (EDB), containing 0.25 percent of 1,2-dibromo-3-chloropropane (DBCP), occurred within approximately 60 feet of the Kunia Well (State Well No. 2703-01). In response to the detection of the compounds in the Kunia Well (which at that time supplied domestic water to the Kunia Village), Del Monte Corporation initiated soils and groundwater investigations and remedial cleanup efforts near the Kunia Well. As a result of these activities, other areas impacted with fumigants near the well were identified in addition to the Kunia Well spill area. Approximately 18,000 tons of soil was excavated during two separate removal efforts conducted in 1981 and 1983, respectively. Remediation is ongoing under U.S. EPA Superfund Cleanup Program.

Sources:

1. Work Plan for Remedial Investigation and Feasibility Study at the Del Monte Corporation (Oahu Plantation) Superfund Site, Kunia, Hawaii, ICF Technology, Incorporated, February
2. State of Hawaii, Hazard Evaluation and Emergency Response System, Document 22025

10. Land Use Displacement
Land Use Designations and Descriptions

Area 7, Site 1

On September 15, 2000, approximately 8.2 pounds of agricultural chemical endosulfan was spilled in Fields 101 (block numbers 44 and 45) and 140 (block numbers 3, 4, and 5) of land owned by the Del Monte Fresh Produce Company. Soil removal and drumming was completed in November 2003. Approximately 584 drums were filled with contaminated soil and incinerated. Post soil excavation sampling indicated that residual endosulfan concentrations were below RCRA Land Disposal Restriction levels. A letter dated September 25, 2009, from the State of Hawaii Department of Health indicated that no further action was required since levels of residual contaminants left in place did not pose a hazard under unrestricted residential use.

Sources:

1. Chemical Spill Response Report, Thiodan 3 EC (Endosulfan), Del Monte Fresh Produce (Hawaii) Inc., Field 101, Block Numbers 44, 45, and Field 140, Block Numbers 3, 4, and 5, Kunia, Oahu, Hawaii, Del Monte Fresh Produce (Hawaii) Inc., March 11, 2003
2. No Further Action Determination for Del Monte Endosulfan Release, State of Hawaii Department of Health, September 25, 2009
3. State of Hawaii, Hazard Evaluation and Emergency Response System, Documents 127584 and 127585

Layer Name: Land Study Bureau (LSB) Detailed Land Classification

Layer Type: Polygon

Status: Complete

Geog. Extent: Main Hawaiian Islands

Projection: Universal Trans Mercator, Zone 4, Meters, NAD 83 HARN

Description: Land Study Bureau's Detailed Agricultural land productivity ratings for Kauai, Oahu, Maui, Molokai, Lanai and Hawaii.

Source: Land Study Bureau's Detailed Land Classification Aerial Photos hand drafted onto paper overlays of the U.S.G.S., 1:24,000 topographic and orthophoto quads. Ratings were developed for both over-all productivity, and for specific crops. This layer represents only the over-all productivity ratings.

Dates of LSB studies:
Hawaii - 1965
Maui - 1967
Oahu - 1972
Kauai - 1967
Molokai - 1968
Lanai - 1967

History: Digitized in Arc/Info version 7.1.1 using ArcEdit by the Office of Planning (OP), 1998.

Note 1: Lands having the LSB rating of "U," which the Land Study Bureau assigned to built-up or urbanized areas (as of the date of the studies), were not digitized.

Note 2: All classified lands falling within the State Land Use Urban District were deleted from the layer using the 1995 LUDB coverages.

Note 3: Although LSB classification polygons falling within the 1995 LUDB Urban District were deleted from the GIS layer, the classifications themselves still exist – they simply are not represented in this GIS layer. Specifically, there is no provision in State law requiring the rescission of the soil ratings that apply to an area that has been reclassified by the Land Use Commission, e.g., from the Agricultural to Urban districts. Similarly, there is no provision in State law requiring the Detailed Land Classification (Land Study Bureau) bulletins to be reviewed and revised to reflect changes to the land areas for which urban development has occurred.

Attributes: Polygons:

AREA	area of polygon (sq. meters)
PERIMETER	perimeter of polygon (meters)
TYPE	Agricultural Productivity Rating
Island	Island
GISAcres	Acreage, as calculated by GIS software

TYPE	DEFINITION
A-E	Agricultural productivity rating, from A to E, with "A" having the highest rating.

Discussion:

From "A Report on the State of Hawaii Land Evaluation and Site Assessment System" February, 1986, Section IV, pp.23-25):

"Land Study Bureau's Overall Productivity Rating (LSB):

The Land Study Bureau of the University of Hawaii prepared an inventory and evaluation of the State's land resources during the 1960's and 1970's. The Bureau grouped all lands in the State, except those in the urban district**, into homogeneous units of land types; described their condition and environment; rated the land on its over-all quality in terms of agricultural productivity; appraised its performance for selected alternative crops; and delineated the various land types and groupings based on soil properties and productive capabilities.

**Office of Planning note: "urban district," in this context/document, does not refer to the State Land Use District Boundary "Urban District", but instead refers lands that were observed to have been "built areas" in the aerial photographs.

These properties included:

a. Texture-which refers to the proportion of sand, silt and clay in a particular soil. Medium-textured soils which have nearly equal proportions of sand, silt and clay are generally the most desirable for agriculture because of good tillability and water retention.

b. Structure-which refers to the cohesion of soil material into aggregates or clumps. The size, shape and amount of these clumps affect the pore spaces which contain the air and moisture necessary for growth.

c. Depth-which refers to the distance to which roots can penetrate. Generally, the deeper the rooting depth, the more desirable the soil because more moisture can be stored and more soil volume is available from which nutrients can be obtained.

d. Drainage-refers to the frequency and duration of soil saturation with moisture.

e. Parent material-refers to the geologic material from which a soil has developed. Soils formed from coral have neutral to alkaline reactions and are high in calcium. Most of the soils have developed from volcanic material and under tropical conditions of high temperature and rainfall. These soils tend to be acid and fertility levels are relatively low.

f. Stoniness-affects the productivity of land by limiting the use of machinery and the selection of crops.

g. Topography-refers to slope and surface configuration. Lands with flat terrain are better suited for a wider variety of agricultural uses than lands having steeper slopes. Cultivated lands generally have slopes of less than 20 percent. Lands with slopes between 20 to 35 percent usually are not machine-tilled, but are still suitable for certain uses such as orchards and grazing.

h. Climate-with its elements of temperature, sunlight and rainfall constitutes the exterior environment of land, unlike the soil properties which constitute the interior segment.

i. Rain-is the basic source of irrigation. Ideally, it should fall at the place, in the quantity and at the time when it is needed.

The interaction of particular soil properties, topography and climate served to differentiate land types and provided a basis for correlating and establishing productivity ratings. A five-class productivity rating system was developed with "A" representing the class of highest productivity and "E" the lowest."

From "Detailed Land Classification - Island of Kauai," December, 1967, Land Study Bureau, pp. 25-27:

"Over-all (Master) Productivity Rating:

The Over-all Productivity Rating evaluates each Land Type in its over-all or general productive capacity and not for any specific crop. Two independent methods were utilized in ascertaining and checking this over-all rating: averaging the Selected Crop Productivity Ratings and application of the Modified Storie Index (6) (7).

....The Modified Storie Rating Index is a formula whereby the productivity index of the land is developed by multiplying the several factors in the formula. The higher the product, the better suited the Land Type is for agricultural uses.

Modified Storie Rating Index = A x B x C x X x Y

A = percentage rating for the general character of the soil profile
B = percentage rating for the texture of the surface horizon
C = percentage rating for the slope of the land
X = percentage rating for such factors as salinity, soil reaction, damaging winds, erosion, etc.
Y = percentage rating for rainfall

The percentage rating for each factor (A, B, C, X and Y) increases as the favorableness of the factor increases. Therefore, it follows that as the land productivity index approaches 100 percent, the agricultural quality of the land increases. Conversely, less desirable lands have low value indexes. The following are the Modified Storie Index percentages and their associated Over-all Productivity Ratings.

Modified Storie Index Percentages	Over-all Productivity Rating
85-100	A
70-84	B
55-69	C
30-54	D
0-30	E

.....each factor is discussed briefly to indicate its role in determining land quality for agricultural purposes:

The ratings for factor A take drainage and depth of the soil profile into consideration. Deep and shallow soils are recognized and differentiated. The nature of the surface soil and subsoil are considered. Parent material and degree of soil development are recognized as they affect fertility, structure, depth, aeration and moisture-holding capacity of the soil.

Factor B, which expresses the texture of the surface soil, reflects the relative workability of the soil as well as its composition of silt, sand and clay. Stony lands, including lava lands, are placed in special categories. The soils are separated into textural groups. Soils are usually expected to react quite similarly when of similar textural groups. Texture is closely associated with moisture-holding capacity and workability of the soil.

Factor C accounts for the variations in the slope of the land. The slope classes are designed to differentiate ease of irrigation and use of mechanical equipment, susceptibility to erosion, amount of surface runoff, and suitability for commercial forest production. In general, slopes exceeding 35 percent are considered too steep for cultivated crops, and slopes greater than 80 percent are assumed impractical for commercial forest production.

Factor X includes the miscellaneous land characteristics such as soil fertility, soil reaction, soil salinity, and presence of strong winds.

Factor Y accounts for rainfall and associated climatic feature. As a general rule, lands in the higher rainfall zones are cloudy and therefore lower in productivity; irrigated lands are rated 100 because the moisture requirement is adequately met. It is the general assumption that where irrigation is required, climate is usually satisfactory for crop production."

Note: For more detailed explanations of the Land Rating criteria, refer to the Land Study Bureau's publications for each island:

Detailed land classification: island of Hawaii. , Honolulu: Land Study Bureau, University of Hawaii, Nov. 1965.
Detailed land classification - island of Kauai. , Honolulu: University of Hawaii, Land Study Bureau, Dec. 1967.
Detailed land classification - island of Lanai. , Honolulu: University of Hawaii, Land Study Bureau, May 1967.
Detailed land classification: Island of Maui. , Honolulu: Land Study Bureau, University of Hawaii, May 1967.
Detailed land classification: Island of Molokai. , Honolulu: Land Study Bureau, University of Hawaii, June 1968.
Detailed land classification: Island of Oahu. , Honolulu: Land Study Bureau, University of Hawaii, Jan. 1963 and Dec. 1972.

Note: The Detailed Land Classification and the Hawaii Land Evaluation and Site Assessment System publications referenced above can be found at the Hawaii Legislative Reference Bureau (https://lrb.hawaii.gov/, 808-587-0690), and at Hawaii State Public Libraries (http://www.librarieshawaii.org/, 808-586-3500).

Contact : Statewide GIS Program, Office of Planning, State of Hawaii,
PO Box 2359, Honolulu, Hi. 96804; (808) 587-2846.
email: gis@hawaii.gov

Layer Name: Land Evaluation and Site Assessment

File Name: LESA

Layer Type: Polygon

Status: Complete

Geog. Extent: Islands of Hawaii, Kauai, Lanai, Maui, Molokai and Oahu

Projection: Universal Trans Mercator, Zone 4, Meters

Datum: NAD 83 HARN

Please note - if you are using data in the State's web services or downloading from the State's geoportal, the data is served and exported in WGS84 coordinates, although it is stored internally in UTM coordinates.

Description: Important Agricultural Lands (IAL) as determined/delineated by the LESA Commission. ALISH, LSB and the U.S. Soil Conservation Service LESA studies were all used and considered when evaluating land for inclusion in the IAL inventory.

The "Land Evaluation" portion of the study primarily considered soils to determine rankings. In the "Site Assessment" portion of the study, consideration was given to significant factors other than soils that contribute to the viability of a given site for agricultural use. See the report listed below for more specific information as to criteria and exact methodology used.

Source: "A Report on the State of Hawaii Land Evaluation and Site Assessment System" by The State of Hawaii Land Evaluation and Site Assessment Commission, February, 1986. The report can be found at the Hawaii Legislative Reference Bureau (http://lrbhawaii.org/, 808-587-0690), and at Hawaii State Public Libraries (http://www.librarieshawaii.org/, 808-586-3500).

History: Polygons were drafted onto 1:24000 USGS quadrangle maps, then digitized in Arc/Info version 7.x by Office of Planning staff.

NOTE: "Doughnut" / "Island" polygons on the island of Kauai and part of the island of Hawaii have been differentiated and given distinct codes/values.

Attributes: Polygons

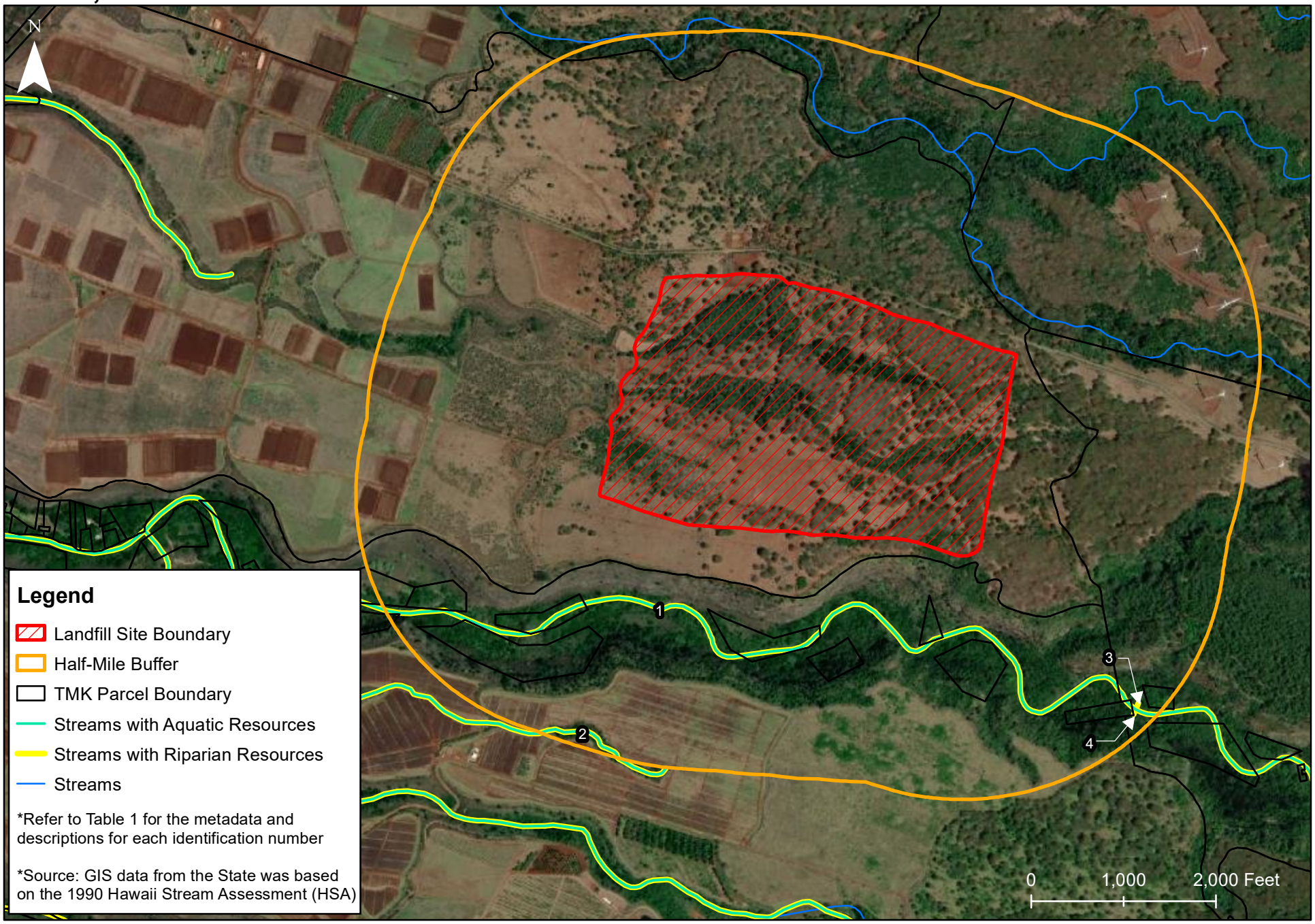
FID	Feature ID
AREA	area of polygon in square meters
PERIMETER	perimeter of polygon in meters
LESA	1 = Important Ag Lands
	0 = Not Important Ag Lands

Contact: Hawaii Statewide GIS Program
Office of Planning, State of Hawaii
P.O. Box 2359, Honolulu, HI 96804
Phone: (808) 587-2846.
e-mail: gis@hawaii.gov

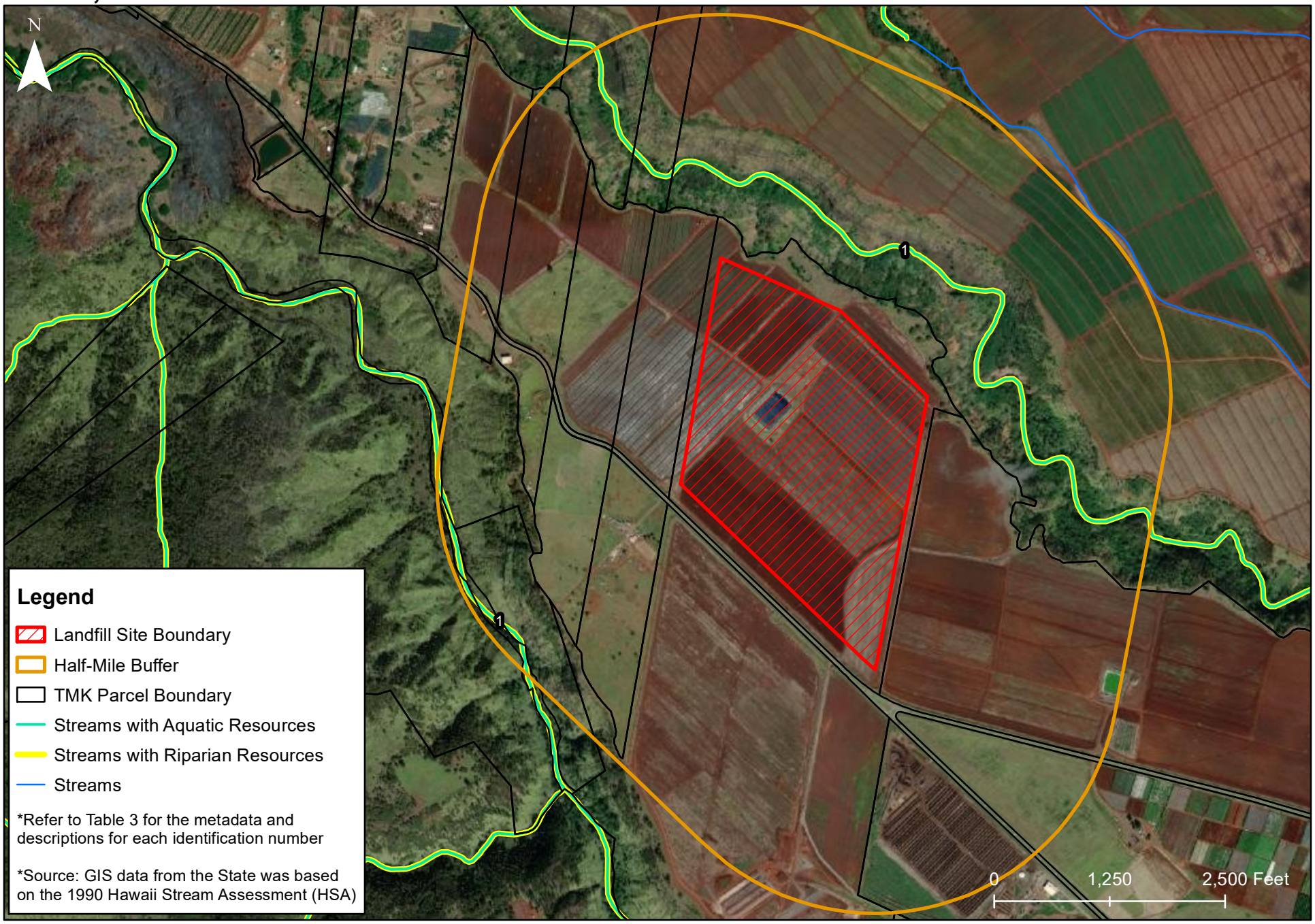
ATTACHMENT 11

SUBJECTIVE SCORING CRITERIA
11. PROXIMITY TO ECOLOGICALLY IMPORTANT AREAS
SUPPORT INFORMATION

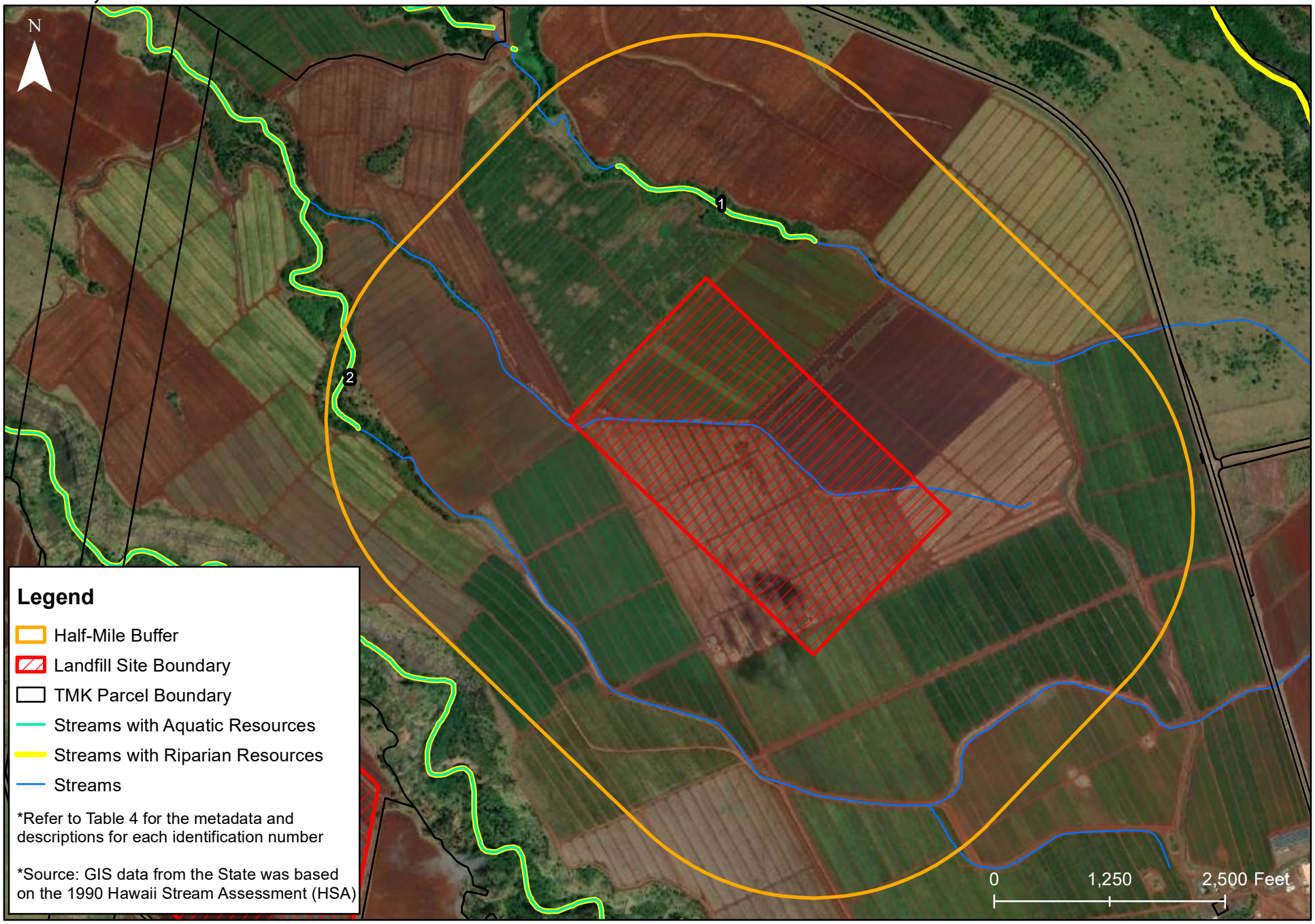
Oahu Landfill Siting Study
11. Proximity to Nearby Ecologically Important Areas
Area 2, Site 1



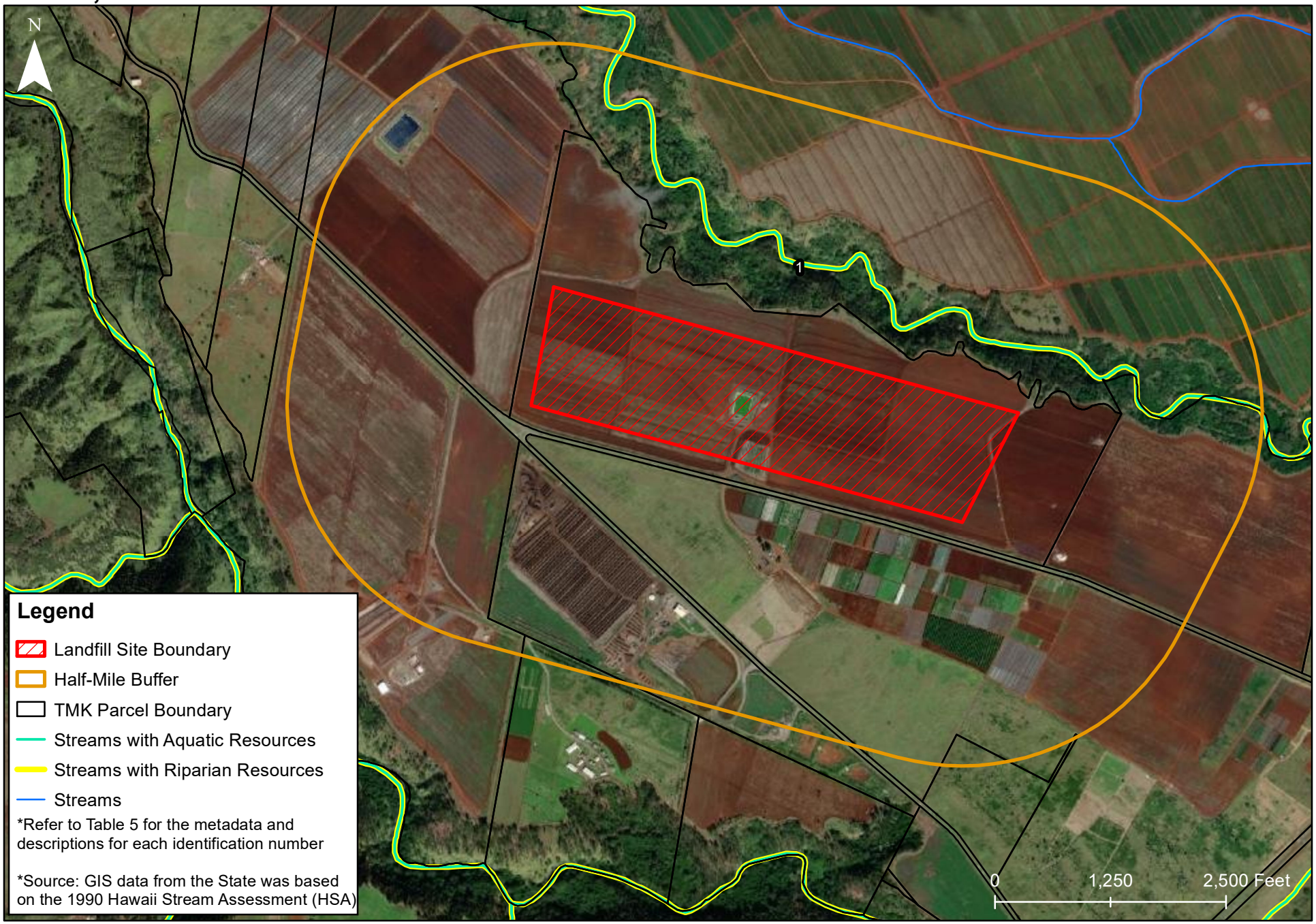
Oahu Landfill Siting Study
11. Proximity to Nearby Ecologically Important Areas
Area 3, Site 1



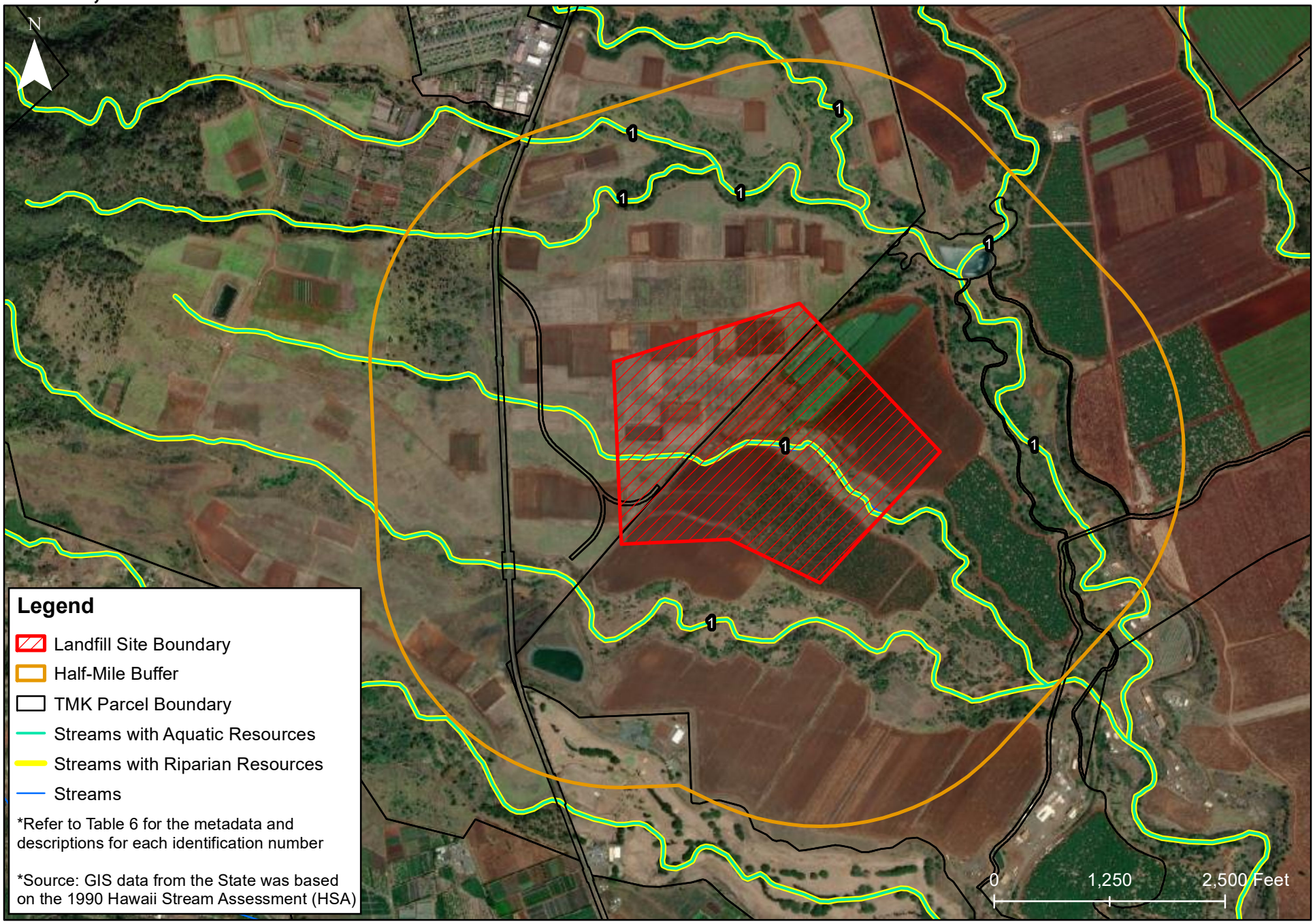
Oahu Landfill Siting Study
11. Proximity to Nearby Ecologically Important Areas
Area 3, Site 2



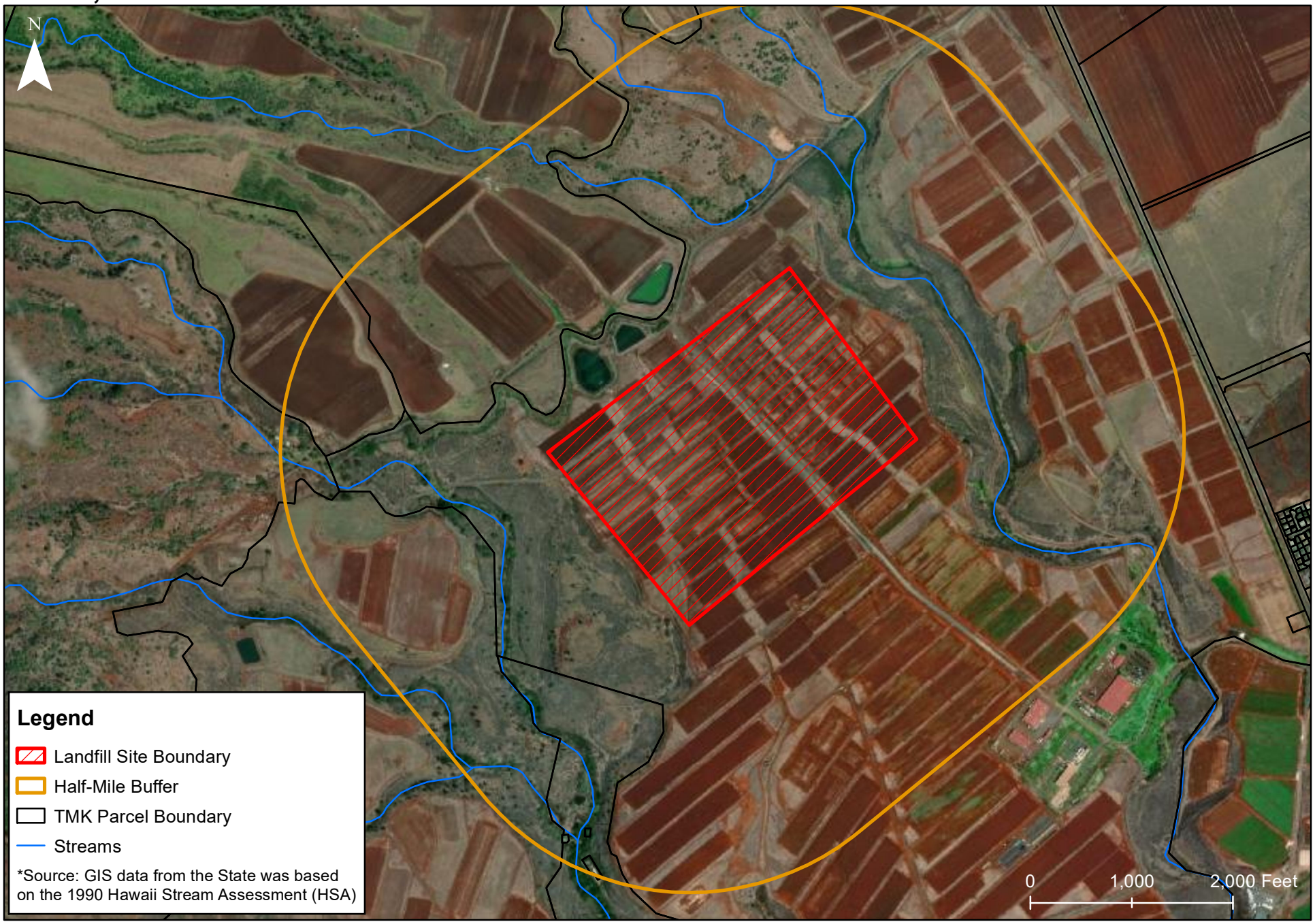
Oahu Landfill Siting Study
11. Proximity to Nearby Ecologically Important Areas
Area 3, Site 3



Oahu Landfill Siting Study
11. Proximity to Nearby Ecologically Important Areas
Area 6, Site 1



Oahu Landfill Siting Study
11. Proximity to Nearby Ecologically Important Areas
Area 7, Site 1



11. Proximity to Ecologically Important Areas
Tables of Resource Indicators and Data

Table 1 - Aquatic & Riparian Resource Indicators - Area 2, Site 1

Aquatic Resources Indicators - Area 2, Site 1															
FIGURE ID NO.	INDICATORS	NUMBNG1S	NG1S	NUMBNG2S	NG2S	NUMBNATIVE	NGDIVERSE	NGSPAWN	AG1S	AG2S	HABITAT	DAMSDIVERT	CHANNELED	DATAQUALITY	FINALRANK
1	0	2	G	1	P	3	G		0	0				P	S
2	0	2	G	1	P	3	G		0	0				P	S

Riparian Resources Indicators - Area 2, Site 1									
FIGURE ID NO.	RANK	DETPLANTS	DETANIMALS	TOTDET	NATIVE	PROTECTED	RECOVHAB	BIRDS	PLANTS
1	S	HC	P	3	30	0		3	1
2	S	HC	P	3	30	0		3	1
3	S	HC	P	3	40	0		2	0
4	S	HC	P	3	40	0		2	0

Table 2 - Aquatic & Riparian Resource Indicators - Area 3, Site 1

Aquatic Resources Indicators - Area 3, Site 1															
FIGURE ID NO.	INDICATORS	NUMBNG1S	NG1S	NUMBNG2S	NG2S	NUMBNATIVE	NGDIVERSE	NGSPAWN	AG1S	AG2S	HABITAT	DAMSDIVERT	CHANNELED	DATAQUALITY	FINALRANK
1	0	1	G	3	E	5	G	E	6	9				G	M

Riparian Resources Indicators - Area 3, Site 1									
FIGURE ID NO.	RANK	DETPLANTS	DETANIMALS	TOTDET	NATIVE	PROTECTED	RECOVHAB	BIRDS	PLANTS
1	S	HC	PG	4	30	0		2	2

Table 3 - Aquatic & Riparian Resource Indicators - Area 3, Site 2

Aquatic Resources Indicators - Area 3, Site 2															
FIGURE ID NO.	INDICATORS	NUMBNG1S	NG1S	NUMBNG2S	NG2S	NUMBNATIVE	NGDIVERSE	NGSPAWN	AG1S	AG2S	HABITAT	DAMSDIVERT	CHANNELED	DATAQUALITY	FINALRANK
1	0	1	G	3	E	5	G	E	6	9				G	M
2	0	1	G	3	E	5	G	E	6	9				G	M

Riparian Resources Indicators - Area 3, Site 2									
FIGURE ID NO.	RANK	DETPLANTS	DETANIMALS	TOTDET	NATIVE	PROTECTED	RECOVHAB	BIRDS	PLANTS
1	S	HC	PG	4	30	0		2	2
2	S	HC	PG	4	30	0		2	2

Table 4 - Aquatic & Riparian Resource Indicators - Area 3, Site 3

Aquatic Resources Indicators - Area 3, Site 3															
FIGURE ID NO.	INDICATORS	NUMBNG1S	NG1S	NUMBNG2S	NG2S	NUMBNATIVE	NGDIVERSE	NGSPAWN	AG1S	AG2S	HABITAT	DAMSDIVERT	CHANNELED	DATAQUALITY	FINALRANK
1	0	1	G	3	E	5	G	E	6	9				G	M

Riparian Resources Indicators - Area 3, Site 3									
FIGURE ID NO.	RANK	DETPLANTS	DETANIMALS	TOTDET	NATIVE	PROTECTED	RECOVHAB	BIRDS	PLANTS
1	S	HC	PG	4	30	0		2	2

11. Proximity to Ecologically Important Areas
Tables of Resource Indicators and Data

Table 5 - Aquatic & Riparian Resource Indicators - Area 6, Site 1

Aquatic Resources Indicators - Area 6, Site 1															
FIGURE ID NO.	INDICATORS	NUMBNG1S	NG1S	NUMBNG2S	NG2S	NUMBNATIVE	NGDIVERSE	NGSPAWN	AG1S	AG2S	HABITAT	DAMSDIVERT	CHANNELED	DATAQUALITY	FINALRANK
1	0	0	P	0	P	1	P		5	2				G	W

Riparian Resources Indicators - Area 6, Site 1									
FIGURE ID NO.	RANK	DETPLANTS	DETANIMALS	TOTDET	NATIVE	PROTECTED	RECOVHAB	BIRDS	PLANTS
1	O	M	PG	3	0	0	2	2	7

Table 6 - Aquatic & Riparian Resource Indicators - Area 7, Site 1

Aquatic Resources Indicators - Area 7, Site 1
No Aquatic Resources Reported

Riparian Resources Indicators - Area 7, Site 1
No Riparian Resources Reported

Source: 1990 Hawaii Stream Assessment; Department of Land and Natural Resources (DLNR), Commission on Water Resource Management (CWRM)

Assessment evaluation was not completed or there was nothing to report if data is not listed in a table cell.

11. Proximity to Ecologically Important Areas
Tables of Resource Indicators with Descriptions

Streams with Aquatic Resources

Source: 1990 Hawaii Stream Assessment; Department of Land and Natural Resources (DLNR), Commission on Water Resource Management (CWRM)

Description: Streams identified by the Hawaii Stream Assessment as having aquatic significance.

Attributes:

Table 7 – Aquatic Resource Indicators with Descriptions	
INDICATOR	**DESCRIPTION**
INDICATORS	Number of Indicator Species Present
NUMBNG1S	Number of Native Species Group 1 (NG1) present (4 possible) Note: NG1 is made up of four native species considered to be representative of potentially high quality stream ecosystems. These species are: three species of O'opu (goby) (Awaous stamineus, Lentipes concolor, Sicyopterus stimpsoni) and Hihiwai (a snail) (Neritina granosa).
NG1S	Native Species Group 1 (NG1) rank E Excellent - More than 2 species are present, or 2 species present with one common to abundant G Good - Two species present, or one species that is common to abundant P Poor - Fewer than 2 species present, and uncommon U Unknown
NUMBNG2S	Number of Native Species Group 2 (NG2) present (7 possible) Note: NG2 is made up of seven native species that are considered more common. Presence of these species was considered to be typical of a healthy native stream ecosystem.
NG2S	Native Species Group 2 (NG2) rank E Excellent - More than 2 species are present, or 2 species present with one common to abundant G Good - Two species present, or one species that is common to abundant P Poor - Fewer than 2 species present, and uncommon U Unknown
NUMBNATIVE	Total Number of Native Species Present
NGDIVERSE	Diversity of Native Species E Excellent - At least 2 species present from each of the groups NG1 and NG2 G Good - At least 1 of the species present from each of the groups NG1 and NG2 P Poor - One or fewer species present from groups NG1 or NG2 U Unknown

11. Proximity to Ecologically Important Areas
Tables of Resource Indicators with Descriptions

Table 7 – Aquatic Resource Indicators with Descriptions	
INDICATOR	**DESCRIPTION**
NGSPAWN	Native Species Spawning and Recruitment E Excellent - Evidence of significant spawning or recruitment by any NG1 fish G Good - Evidence of significant spawning or recruitment by any NG2 species or occasional spawning or recruitment by any NG1 species P Poor - No spawning or recruitment by NG1 or NG2 species) U Unknown
AG1S	Number of Introduced Species Group 1 (IG1) Present Note: IG1 is made up of noxious, non-native stream animals that may prey upon and/or out-compete native species.
AG2S	Number of Introduced Species Group 2 (IG2) Present Note: IG2 consists of the non-native species considered to be innocuous to Hawaii's streams.
HABITAT	Overall Suitability of Habitat for Aquatic Species E Excellent - Good pools and riffles with a gentle slope in the lower reaches, gravel bottom with minimal sedimentation, and continuous water flows with low turbidity except during freshets). G Good - Steep slope in the lower reaches with nearly continuous to intermittent water flows or gentle slope with significant sedimentation). P Poor - Limited intermittent water flows with extended disappearance of riffles U Unknown
DAMSDIVERT	Amount of Stream Damned or Diverted E Excellent - No dams or diversions G Good - No dams or diversions in the middle to lower reaches P Poor - Dams or diversions below the upper reaches or a loss of 50% of the mean annual flow U Unknown
CHANNELED	Amount of Stream Channelization E Excellent - No channelization G Good - Channelization limited to grading or straightening with retention of gravel substrate P Poor - Concrete linings, chutes or flumes installed U Unknown
DATAQUALITY	Quality of Data E Excellent - Two or more recent surveys (1975-1994) G Good - At least one recent survey P Poor - One or more surveys, all prior to 1975 U Unknown
FINALRANK	Final Rank Awarded by Hawaii Stream Assessment Committee L Limited M Moderate O Outstanding S Substantial U Unknown or unranked

11. Proximity to Ecologically Important Areas
Tables of Resource Indicators with Descriptions

Streams with Riparian Resources

Source: 1990 Hawaii Stream Assessment; Department of Land and Natural Resources (DLNR), Commission on Water Resource Management (CWRM)

Description: Streams identified by the Hawaii Stream Assessment as having riparian significance.

Table 8 – Riparian Resource Indicators with Descriptions	
INDICATORS	**DESCRIPTION**
RANK	Stream Rank O Outstanding S Superior U Unknown
DETPLANTS	Detrimental Plants C California Grass H Hau M Mangrove
DETANIMALS	Detrimental Animals P Pigs A Axis Deer R Red Tailed Deer G Goats M Mouflan
TOTDET	Total Number of Detrimental Plants and Animals
NATIVE	Percentage (to the nearest 10%) of the length of the main course of a stream that passes through a native forest.
PROTECTED	Whether or Not Stream is Protected 0 Not protected or unknown 1 Protected
RECOVHAB	Presence of Recovery Habitat 0 No or unknown 2 Presence of recovery habitat
BIRDS	Number of Rare Birds
PLANTS	Number of Rare Plants

11. Proximity to Ecologically Important Areas

Example Use of Data

Example for Area 3, Site 2

Step 1:

Refer to the attached landfill site figure for Area 3, Site 2 and select a stream to determine the types of Aquatic and Riparian Resources. A stream with identifier number 2 was selected for this example. Based on the color in comparison with the legend, this stream has both Aquatic and Riparian Resources.

Step 2:

Refer to Table 3 for the Aquatic and Riparian Resource indicators of this stream type. Listed in the first column of each table is FIGURE ID NO., which corresponds to the stream indicator number selected in Step 1. The indicator headers and value from this row should be used in referencing the corresponding indicators and descriptions in Table 7.

Step 3:

Reference the data in Table 3 to Table 7, respectively:

INDICATORS = 0, 0 indicator species present

NUMBNG1S = 1, Number of Native Species in Group 1 considered to be representative of potentially high quality ecosystems (4 possible)

NG1S = G, Ranking of the Native Species Group 1 as Good

NUMBNG2S = 3, Number of Native Species in Group 2 considered to be common and representative of a healthy native stream ecosystem

NG2S = E, Ranking of the Native Species Group 2 as Excellent

Continue with Step 3 using the same method for remainder of Aquatic and Riparian Resources.

Ecologically Important Areas

Ecologically important areas are considered habitat areas or other areas where rare or native species may occur that contribute to an ecosystem's productivity, biodiversity, and resilience.

Federally Listed Species

Federally listed species include wildlife and plant species defined as endangered or threatened under the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), as amended. Table 1 below lists the protected wildlife species most likely to be encountered by projects implemented on Oʻahu within the Hawaiian Islands. Table 2 below lists the protected plant species most likely to be encountered by projects implemented on Oʻahu within the Hawaiian Islands.

Source: U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office

Candidate Species

Candidate species include wildlife and plant species with enough information to support a proposal for listing as threatened or endangered under the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), as amended. There are no longer candidate species here in Hawaiʻi.

Source: U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office, March 2022.

Critical Habitat

Each of the landfill sites were evaluated with respect to their proximity to areas of designated critical habitat. Critical Habitat is the term used in the Endangered Species Act to define those areas of habitat that are known to be essential for an endangered or threatened species to recover and that require special management or protection. None of the landfill sites or surrounding areas up to 0.5-mile contain areas designated as critical habitat.

Source: State GIS data as compiled from the U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office, updated August 2017.

Table 1.

HAWAIIAN ISLANDS ANIMALS: Updated July 13, 2020

USFWS LISTED SPECIES, AS DESIGNATED UNDER THE U.S. ENDANGERED SPECIES ACT

Species status by island: E=endangered; **T**=threatened; **DL**=delisted; **(CH)**=critical habitat designated; **P**=proposed. *=possibly extirpated in the wild/historical occurrence on that island.
N.W. Hawaiian Islands: French Frigate shoals; Kure; Laysan; Midway; Necker; Nihoa; PH = Pearl & Hermes

VERTEBRATES (28 Endangered + 6 Threatened + 9 Delisted = 43 taxa)

			DISTRIBUTION						
		STATUS	Hawai'i	Maui	Lāna'i	Moloka'i	O'ahu	Kaua'i	N.W. Islands, Kaho'olawe, Ni'ihau, or Oceanic
LISTED MAMMALS (1 Endangered)									
Lasiurus cinereus semotus	Hawaiian hoary bat; 'Ōpe'ape'a	E	x	x	x	x	x	x	Ka, Ni'ihau
LISTED BIRDS (25 Endangered + 3 Threatened + 9 Delisted = 37 taxa)									
Anas wyvilliana	Hawaiian duck; Koloa maoli	E	x	x			x	x	Ni'ihau
Branta sandvicensis	Hawaiian goose; Nēnē	T	x	x		x		x	
Chasiempis sandwichensis ibidis **(CH)**	O'ahu 'elepaio	E					x		
Fulica alai	Hawaiian coot; 'Alae ke'oke'o	E	x	x	x	x	x	x	Ni'ihau
Gallinula chloropus sandvicensis	Hawaiian gallinule; 'Alae 'ula (previous Hawaiian moorhen)	E					x	x	
Himantopus mexicanus knudseni	Hawaiian stilt; Ae'o	E	x	x	x	x	x	x	Ni'ihau
Hydrobates castro (listed as *Oceanodroma castro*)	Hawaii DPS: band-rumped storm-petrel; 'Ake'ake	E	x	x	x	x	x	x	
Paroreomyza maculata	O'ahu creeper; O'ahu 'Alauahio	E					x		
Pterodroma sandwichensis	Hawaiian petrel; 'Ua'u	E	x	x	x	x	x	x	
Puffinus auricularis newelli	Newell's shearwater; ‘A‘o	T	x	x	x	x	x	x	
Vestiaria coccinea	Scarlet Honeycreeper; 'I'iwi	T	x	x	x	x	x	x	
LISTED REPTILES (2 Endangered + 3 Threatened = 5 taxa)									
Caretta caretta	Loggerhead sea turtle; (incidental in Hawai'i)	T	x	x	x	x	x	x	O+all islands
Chelonia mydas	Central North Pacific DPS: Green sea turtle; honu	T	x	x	x	x	x	x	O+all islands
Dermochelys coriaceae	Leatherback sea turtle; (incidental in Hawai'i)	E	x	x	x	x	x	x	O+all islands
Eretmochelys imbricata	Hawksbill sea turtle; 'Ea	E	x	x	x	x	x	x	O+all islands
Lepidochelys olivacea	Olive ridley sea turtle; (incidental in Hawai'i)	T	x	x	x	x	x	x	O+all islands

INVERTEBRATES (75 Endangered +1 Threatened = 77 taxa)

LISTED SNAILS (44 Endangered + 1 Threatened = 45 taxa)									
Achatinella abbreviata	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella apexfulva	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella bellula	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella buddii	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella bulimoides	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella byronii	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella caesia	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella casta	O'ahu tree snail; pūpū kani oe	E					x*		

HAWAIIAN ISLANDS ANIMALS: Updated July 13, 2020

USFWS LISTED SPECIES, AS DESIGNATED UNDER THE U.S. ENDANGERED SPECIES ACT

Species status by island: E=endangered; **T**=threatened; **DL**=delisted; **(CH)**=critical habitat designated; **P**=proposed. *=possibly extirpated in the wild/historical occurrence on that island.
N.W. Hawaiian Islands: French Frigate shoals; Kure; Laysan; Midway; Necker; Nihoa; PH = Pearl & Hermes

			DISTRIBUTION						
		STATUS	Hawai'i	Maui	Lāna'i	Moloka'i	O'ahu	Kaua'i	N.W. Islands, Kaho'olawe, Ni'ihau, or Oceanic
Achatinella cestus	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella concavospira	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella curta	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella decipiens	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella decora	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella dimorpha	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella elegans	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella fulgens	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella fuscobasis	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella juddii	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella juncea	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella lehuiensis	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella leucorrhaphe	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella lila	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella livida	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella lorata	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella mustelina	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella papyracea	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella phaeozona	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella pulcherrima	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella pupukanioe	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella rosea	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella sowerbyana	O'ahu tree snail; pūpū kani oe	E					x		
Achatinella spaldingi	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella stewartii	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella swiftii	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella taeniolata	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella thaanumi	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella turgida	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella valida	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella viridans	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella vittata	O'ahu tree snail; pūpū kani oe	E					x*		
Achatinella vulpina	O'ahu tree snail; pūpū kani oe	E					x*		

LISTED ARTHROPODS (31 Endangerd)

Drosophila aglaia **(CH)**	Picture-wing fly	E					x		

HAWAIIAN ISLANDS ANIMALS: Updated July 13, 2020

USFWS LISTED SPECIES, AS DESIGNATED UNDER THE U.S. ENDANGERED SPECIES ACT

Species status by island: E=endangered; **T**=threatened; **DL**=delisted; **(CH)**=critical habitat designated; **P**=proposed. *=possibly extirpated in the wild/historical occurrence on that island.
N.W. Hawaiian Islands: French Frigate shoals; Kure; Laysan; Midway; Necker; Nihoa; PH = Pearl & Hermes

			DISTRIBUTION						
		STATUS	Hawai'i	Maui	Lāna'i	Moloka'i	O'ahu	Kaua'i	N.W. Islands, Kaho'olawe, Ni'ihau, or Oceanic
Drosophila hemipeza **(CH)**	Picture-wing fly	E					x		
Drosophila montgomeryi **(CH)**	Picture-wing fly	E					x		
Drosophila obatai **(CH)**	Picture-wing fly	E					x		
Drosophila sharpi (same species as D. attigua) **(CH)**	Picture-wing fly	E					x		
Drosophila substenoptera **(CH)**	Picture-wing fly	E					x		
Drosophila tarphytrichia **(CH)**	Picture-wing fly	E					x		
Hylaeus anthracinus	Anthracinan yellow-faced bee	E	x	x	x*		x		Ka
Hylaeus assimulans	Assimulans yellow-faced bee	E		x	x		x*		Ka
Hylaeus facilis	Easy yellow-faced bee	E		x	x*	x	x		
Hylaeus kuakea	Hawaiian yellow-faced bee	E					x		
Hylaeus longiceps	Hawaiian yellow-faced bee or longiceps yellow-faced bee	E		x	x	x	x		
Hylaeus mana	Hawaiian yellow-faced bee	E					x		
Megalagrion leptodemas **(CH)**	Crimson Hawaiian damselfly	E					x		
Megalagrion nigrohamatum nigrolineatum **(CH)**	Blackline Hawaiian damselfly	E					x		
Megalagrion oceanicum	Oceanic Hawaiian damselfly	E					x		
Megalagrion pacificum	Pacific Hawaiian damselfly	E	x	x	x*	x	x*	x*	
Megalagrion xanthomelas	Orangeblack Hawaiian damselfly	E	x	x	x	x	x	x*	

Table 2.

HAWAIIAN ISLANDS PLANTS: Updated July 13, 2020

USFWS LISTED SPECIES, AS DESIGNATED UNDER THE U.S. ENDANGERED SPECIES ACT

Species status by island: E= endangered; **T**= threatened; **P**= formally proposed as E or T; **DL**=delisted; **(CH)**=critical habitat designated; **pCH**=critical habitat proposed ;*****=possibly extirpated in the wild/historical occurrence on that island.
N.W. Hawaiian Islands: French Frigate shoals; Kure; Laysan; Midway; Necker; Nīhoa; PH = Pearl & Hermes.

LISTED PLANTS (438 Endangered +10 Threatened + 1 Delisted = 449 total taxa)

		STATUS	DISTRIBUTION						
			Hawai'i	Maui	Lāna'i	Moloka'i	O'ahu	Kaua'i	N.W. Islands, Kaho'olawe, Lehua, Ka'ula, or Ni'ihau
Abutilon menziesii	Koʻoloaʻula	E	✓	✓	✓		✓		
Abutilon sandwicense **(CH)**	No common name	E					✓ CH		
Achyranthes splendens var. *rotundata* **(CH)**	ʻEwa hinahina, round-leaved chaff flower	E			✓*	✓*	✓ CH		
Adenophorus periens **(CH)**	Pendant kihi fern	E	✓CH	✓*	✓*	✓CH	✓*CH	✓CH	
Alectryon macrococcus var. *macrococcus* **(CH)**	Māhoe	E		✓CH		✓CH	✓CH	✓CH	
Asplenium dielerectum **(CH)** (listed as *Diellia erecta*)	No common name	E	✓*CH	✓CH	✓	✓CH	✓CH	✓CH	
Asplenium dielfalcatum **(CH) (**listed as *Diellia facata*)	No common name	E					✓CH		
Asplenium unisorum **(CH) (**listed as *Diellia unisora*)	No common name	E					✓CH		
Bidens amplectens **(CH)**	Koʻokoʻolau	E					✓CH		
Bonamia menziesii **(CH)**	No common name	E	✓CH	✓CH	✓		✓CH	✓CH	
Cenchrus agrimoniodes var. *agrimonioides* **(CH)**	Kāmanomano	E		✓CH	✓*		✓CH		
Chrysodracon forbesii **(CH)** (listed as *Pleomele forbesii*)	Hala pepe	E					✓CH		
Colubrina oppositifolia **(CH)**	Kauila	E	✓CH	✓CH			✓CH		
Ctenitis squamigera **(CH)**	Pauoa	E	✓*	✓CH	✓*	✓*CH	✓*CH	✓CH	
Cyanea acuminata **(CH)**	Hāhā	E					✓CH		
Cyanea calycina **(CH)**	Hāhā	E					✓CH		
Cyanea crispa **(CH)**	Hāhā	E					✓CH		
Cyanea grimesiana ssp. *grimesiana* **(CH)**	Hāhā	E				✓*CH	✓*CH		
Cyanea grimesiana ssp. *obatae* **(CH)**	Hāhā	E					✓CH		
Cyanea humboldtiana **(CH)**	Hāhā	E					✓CH		
Cyanea koolauensis **(CH)**	Hāhā	E					✓CH		
Cyanea lanceolata	Hāhā	E					✓CH		
Cyanea longiflora **(CH)**	Hāhā	E					✓CH		
Cyanea pinnatifida **(CH)**	Hāhā	E					✓CH		
Cyanea purpurellifolia	Hāhā	E					✓CH		
Cyanea st.-johnii **(CH)**	Hāhā	E					✓CH		
Cyanea superba ssp. *regina* **(CH)**	Hāhā	E					✓*CH		
Cyanea superba ssp. *superba* **(CH)**	Hāhā	E					✓CH		
Cyanea truncata **(CH)**	Hāhā	E					✓CH		
Cyclosorus boydiae	Kupukupu makaliʻi	E		✓			✓		
Cyperus pennatiformis ssp. *pennatiformis* **(CH)** (listed as *Mariscus pennatiformis*)	No common name	E	✓*	✓CH			✓*CH	✓CH	
Cyperus trachysanthos **(CH)**	Puʻukaʻa	E			✓*	✓*CH	✓CH	✓CH	Ni'ihau *
Cyrtandra crenata	Haʻiwale	E					✓*		
Cyrtandra dentata **(CH)**	Haʻiwale	E					✓CH		
Cyrtandra gracilis **(CH)**	Haʻiwale	E					✓CH		
Cyrtandra kaulantha **(CH)**	Haʻiwale	E					✓CH		

Cyrtandra polyantha **(CH)**	Haʻiwale	E					✓CH		
Cyrtandra sessilis	Haʻiwale	E					✓CH		
Cyrtandra subumbellata **(CH)**	Haʻiwale	E					✓CH		
Cyrtandra viridiflora **(CH)**	Haʻiwale	E					✓CH		
Cyrtandra waiolani **(CH)**	Haʻiwale	E					✓CH		
Delissea waianaeensis (listed as *Delissea subcordata*) **(CH)**	No common name	E					✓CH		
Diplazium molokaiense **(CH)**	No common name	E		✓CH	✓*	✓*CH	✓*CH	✓*CH	
Doryopteris takeuchii **(CH)**	No common name	E					✓CH		
Dubautia herbstobatae **(CH)**	Naʻenaʻe	E					✓CH		
Eragrostis fosbergii **(CH)**	Fosberg's lovegrass	E					✓CH		
Eugenia koolauensis **(CH)**	Nīoi	E				✓*CH	✓CH		
Euphorbia celastroides var. *kaenana* **(CH)**	ʻAkoko	E					✓CH		
Euphorbia deppeana **(CH)**	ʻAkoko	E					✓CH		
Euphorbia haeleeleana **(CH)**	No common name	E					✓CH	✓CH	
Euphorbia herbstii **(CH)**	ʻAkoko	E					✓CH		
Euphorbia kuwaleana **(CH)**	ʻAkoko	E					✓CH		
Euphorbia rockii **(CH)** (listed as *Chamaesyce rockii*)	ʻAkoko	E					✓CH		
Euphorbia skottsbergii var. *skottsbergii* **(CH) (**listed as *Chamaesyce skottsbergii* var *kalaeloana*)	ʻEwa Plains ʻAkoko	E					✓CH		
Flueggea neowawraea **(CH)**	Mēhamehame	E	✓CH	✓CH		✓*CH	✓CH	✓CH	
Gardenia brighamii	Nānū	E	✓*	✓*	✓	✓*	✓		
Gardenia mannii **(CH)**	Nānū	E					✓CH		
Gouania meyenii **(CH)**	No common name	E					✓CH	✓CH	
Gouania vitifolia **(CH)**	No common name	E	✓CH	✓*CH			✓CH		
Hesperomannia oahuensis **(CH) (** *listed as Hesperomannia arbuscula*)	No common name	E					✓CH		
Hesperomannia swezeyi **(CH)** (listed as *Hesperomannia arborescens*)	No common name	E					✓CH		
Hibiscus brackenridgei ssp. *mokuleianus* **(CH)**	Maʻo hau hele	E				✓CH	✓*CH		
Hibiscus brackenridgei ssp. *molokaiana* **(CH)**	Maʻo hau hele	E				✓*CH	✓CH		
Huperzia nutans **(CH)** (change to *Phlegmariurus nutans*)	Wāwaeʻiole	E					✓CH	✓*CH	
Ischaemum byrone **(CH)**	Hilo ischaemum	E	✓CH	✓CH		✓CH	✓*	✓CH	
Isodendrion laurifolium **(CH)**	Aupaka	E					✓CH	✓CH	
Isodendrion longifolium **(CH)**	Aupaka	T					✓CH	✓CH	
Isodendrion pyrifolium **(CH)**	Wahine noho kula	E	✓	✓*CH	✓*	✓*CH	✓*CH		Niʻihau*
Joinvillea ascendens ssp *ascendens*	ʻOhe	E	✓	✓		✓	✓	✓	
Kadua coriacea **(CH)** (listed as *Hedyotis coriacea*)	Kioʻele	E	✓	✓CH			✓*CH		
Kadua degeneri **(CH)** (listed as *Hedyotis degeneri*)	No common name	E					✓CH		
Kadua fluviatilis	Kamapuaʻa	E					✓	✓	
Kadua parvula **(CH)** (listed as *Hedyotis parvula*)	No common name	E					✓CH		
Korthalsella degeneri **(CH)**	Hulumoa	E					✓CH		
Labordia cyrtandrae **(CH)**	Kāmakahala	E					✓CH		
Lepidium arbuscula **(CH)**	ʻĀnaunau	E					✓CH		
Lipochaeta lobata ssp. *leptophylla* **(CH)**	Nehe	E					✓CH		
Lipochaeta tenuifolia **(CH)** (CH as *Melanthera tenuifolia*)	Nehe	E					✓CH		
Lobelia koolauensis **(CH)** (listed as *Lobelia gaudichaudii* ssp *koolauensis*)	No common name	E					✓CH		
Lobelia monostachya **(CH)**	No common name	E					✓CH		

Lobelia niihauensis **(CH)**	No common name	E					✓CH	✓CH	Ni'ihau*
Lobelia oahuensis **(CH)**	No common name	E					✓CH		
Lysimachia filifolia **(CH)**	No common name	E					✓CH	✓CH	
Marsilea villosa **(CH)**	ʻIhiʻihi	E				✓CH	✓CH		Ni'ihau
Melicope christophersenii **(CH)**	Alani	E					✓CH		
Melicope hiiakae	Alani	E					✓CH		
Melicope lydgatei **(CH)**	Alani	E					✓CH		
Melicope makahae	Alani	E					✓CH		
Melicope ovalis **(CH)**	Alani	E		✓CH			✓CH		
Melicope pallida **(CH)**	Alani	E					✓CH	✓CH	
Melicope saint-johnii **(CH)**	Alani	E					✓CH		
Mezoneuron kavaiense **(CH)**	Uhiuhi	E	✓CH	✓*	✓*		✓	✓	
Microlepia strigosa var. *mauiensis*	No common name	E	✓	✓			✓		
Myrsine fosbergii	Kōlea	E					✓	✓	
Myrsine juddii **(CH)**	Kōlea	E					✓CH		
Neraudia angulata var. *angulata* **(CH)**	No common name	E					✓CH		
Neraudia angulata var. *dentata* **(CH)**	No common name	E					✓CH		
Nothocestrum latifolium	ʻAiea	E	✓	✓	✓*	✓	✓		
Nototrichium humile **(CH)**	Kuluʻī	E		✓*CH			✓CH		
Panicum fauriei var. *carteri*	Carter's panic grass	E		✓*		✓	✓*		
Peucedanum sandwicense **(CH)**	Makou	T		✓CH		✓CH	✓CH	✓CH	
Phyllostegia hirsuta **(CH)**	No common name	E					✓CH		
Phyllostegia kaalaensis **(CH)**	No common name	E					✓CH		
Phyllostegia mollis	No common name	E					✓CH		
Phylostegia parviflora var. *lydgatei* **(CH)**	No common name	E					✓*CH		
Phyllostegia parviflora var. *parviflora* **(CH)**	No common name	E		✓*			✓CH		
Plantago princeps var. *longibracteata* **(CH)**	Laukahi kuahiwi	E					✓CH	✓CH	
Plantago princeps var. *princeps* **(CH)**	Laukahi kuahiwi	E					✓CH		
Platanthera holochila **(CH)**	No common name	E		✓CH		✓CH	✓*CH	✓CH	
Platydesma cornuta var. *cornuta* **(CH)**	No common name	E					✓CH		
Platydesma cornuta var. *decurrens* **(CH)**	No common name	E					✓CH		
Polyscias gymnocarpa (listed as *Tetraplasandra gymnocarpa*)	ʻOheʻohe	E					✓CH		
Polyscias lydgatei **(CH)**	No common name	E					✓CH		
Portulaca villosa	ʻIhi	E	✓	✓	✓*	✓	✓*		Lehua, Ka'ula, Nihoa
Pritchardia bakeri	Baker's loulu	E					✓		
Pritchardia kaalae	Loulu	E					✓		
Psychotria hexandra ssp. *oahuensis*	Kōpiko	E					✓CH		
Pteralyxia macrocarpa **(CH)**	Kaulu	E					✓CH		
Pteris lidgatei **(CH)**	No common name	E		✓CH		✓CH	✓CH		
Ranunculus mauiensis	Makou	E	✓	✓		✓	✓	✓	
Sanicula mariversa **(CH)**	No common name	E					✓CH		
Sanicula purpurea **(CH)**	No common name	E		✓CH			✓CH		
Scaevola coriacea	Dwarf naupaka	E	✓*	✓	✓*	✓	✓*	✓*	Ni'ihau*
Schenkia sebaeoides **(CH)** (listed as *Centaurium sebaeoides*)	ʻĀwiwi	E		✓CH		✓CH	✓CH	✓CH	

Schiedea adamantis	No common name	E					✓		
Schiedea hookeri **(CH)**	No common name	E		✓*			✓CH		
Schiedea kaalae **(CH)**	No common name	E					✓CH		
Schiedea kealiae **(CH)**	No common name	E					✓CH		
Schiedea nuttallii **(CH)**	No common name	E					✓CH		
Schiedea obovata (listed as *Alsinidendron obovatum*) **(CH)**	No common name	E					✓CH		
Schiedea trinervis **(CH)** (listed as *Alsinidendron trinerve*)	No common name	E					✓CH		
Sesbania tomentosa **(CH)**	ʻOhai	E	✓CH	✓*CH		✓CH	✓*CH	✓CH	K, Ni'ihau*, Ne, Nīhoa
Sicyos lanceoloideus	No common name	E					✓	✓	
Silene lanceolata **(CH)**	No common name	E	✓CH		✓*	✓CH	✓CH	✓*	
Silene perlmanii **(CH)**	No common name	E					✓*CH		
Solanum sandwicense **(CH)**	Pōpolo ʻaiakeakua	E					✓*CH	✓CH	
Spermolepis hawaiiensis **(CH)**	No common name	E	✓	✓CH	✓	✓*CH	✓CH	✓CH	
Stenogyne kaalae ssp. *Sherffii* **(CH)**	No common name	E					✓*CH		
Stenogyne kanehoana **(CH)**	No common name	E					✓CH		
Tetramolopium filiforme var. *filiforme* **(CH)** (listed as *Tetramolopium filiforme*)	No common name	E					✓CH		
Tetramolopium filiforme var. *polyphyllum* **(CH)** (listed as *Tetramolopium filiforme*)	No common name	E					✓CH		
Tetramolopium lepidotum ssp. *lepidotum* **(CH)**	No common name	E			✓*		✓CH		
Trematolobelia singularis **(CH)**	No common name	E					✓CH		
Urera kaalae **(CH)**	Ōpuhe	E					✓CH		
Vigna o-wahuensis **(CH)**	No common name	E	✓CH	✓CH	✓	✓CH	✓*CH		K, Ni'ihau*
Viola chamissoniana ssp. *chamissoniana* **(CH)**	ʻolopū; pamakani	E					✓CH		
Viola oahuensis **(CH)**	No common name	E					✓CH		
Zanthoxylum oahuense **(CH)**	Aʻe	E					✓CH		