Finding Balance between Development and Conservation

The O‘ahu Greenprint

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THE OFFICE OF HAWAIIAN AFFAIRS (OHA) was created in 1978 to better the conditions of Native Hawaiian people. Its mission is to mālama (protect) Hawai'i's people and environmental resources and OHA's assets, toward ensuring the perpetuation of the culture, the enhancement of lifestyle and the protection of entitlements of Native Hawaiians, while enabling the building of a strong and healthy Hawaiian people and nation, recognized nationally and internationally. Toward that end, OHA works to preserve Hawaiian cultural heritage through various means, including assuring the protection and preservation of culturally important sites by working with willing landowners to complete acquisitions or conservation easements.

THE TRUST FOR PUBLIC LAND is a national nonprofit organization dedicated to creating parks and protecting land for people, ensuring healthy, livable communities for generations to come. Since 1972, TPL has helped protect more than three million acres in all 50 states. The Trust for Public Land completed its first project in Hawai'i in 1979, a 268.5-acre expansion of the Volcanoes National Park at Kalapana on Hawai'i Island. The organization opened a field office in downtown Honolulu in 1998, and its dedicated local staff have worked with local communities, federal, state, and county agencies to complete a total of 28 projects, protecting over 42,000 acres of land in the Hawaiian Islands. In Hawai'i, The Trust for Public Land focuses on three areas of conservation: shoreline and coastal lands, working lands, and native heritage lands.

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INTRODUCTION

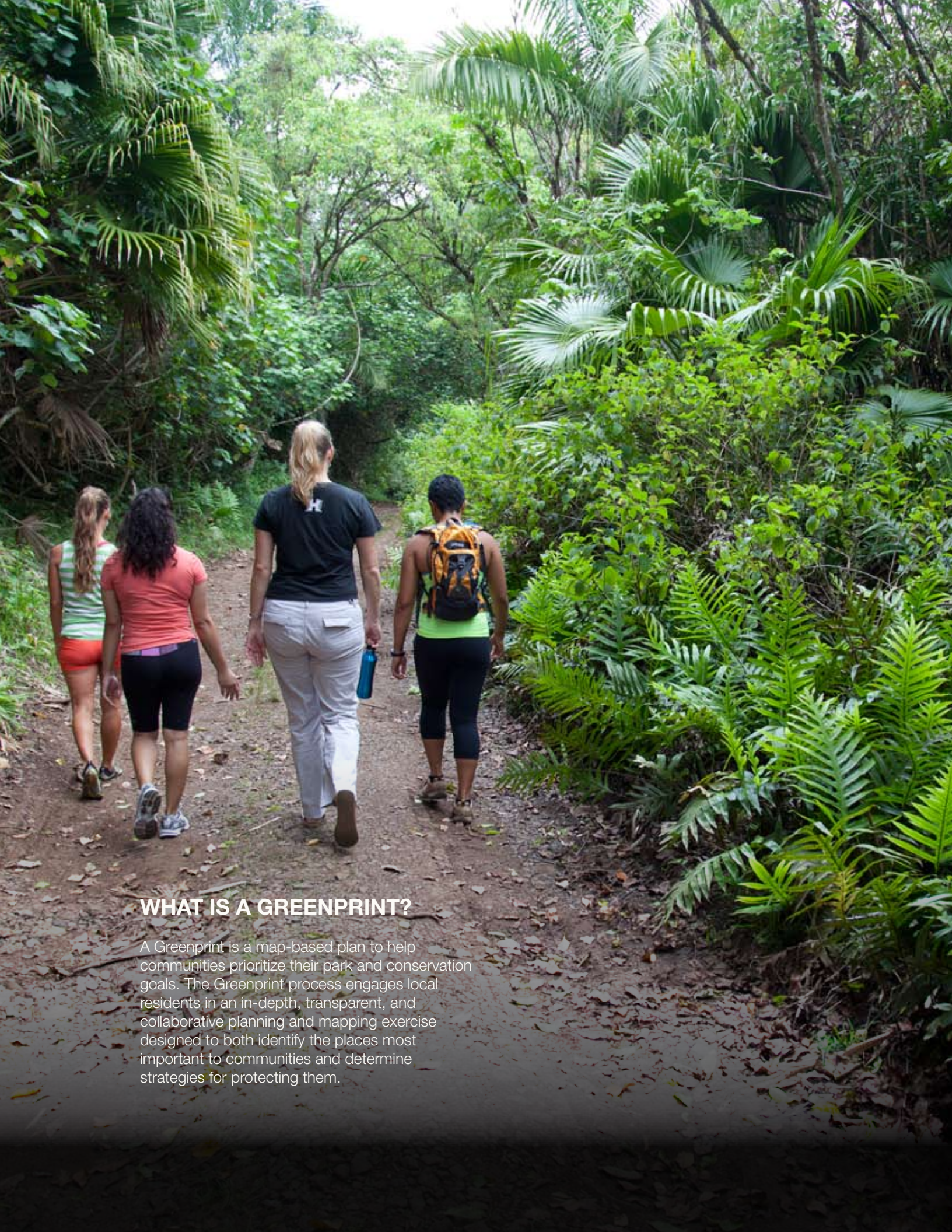
THE ISLAND OF O‘AHU IS DIVERSE and multifaceted. From fast-paced downtown Honolulu, to the agricultural plains of Central O‘ahu, to heavily touristed Waikīkī Beach, to the small communities along the wet Ko‘olau Range and arid Wai‘anae range, to the quiet North Shore, O‘ahu is a study in contrasts. While the island and its people have experienced a certain amount of urbanization, it is the cultural, historical, and natural landscapes of O‘ahu that inspire people to visit and why residents love the island and call it home. Outside the urban center of Honolulu, residents express a desire to “Keep the Country Country.” O‘ahu is not the largest Hawaiian island, encompassing just 600 square miles of land, but with approximately one million residents it is by far the most populous. And the population continues to grow. Over the next 25 years, O‘ahu’s population is estimated to increase by nearly 13 percent, to an estimated 1.1 million in 2040.[1]

Along with this population surge, large areas of O‘ahu are for sale, and development is planned or occurring on productive agricultural and rare wilderness land across the island. These changes are resulting in community tension, conflicts, and even costly litigation. *How does O‘ahu plan for future growth while preserving lands most vital to the island’s past and future?* The people of O‘ahu are currently grappling with a number of issues related to increased development, congestion, and sprawl. Some of the pressing issues, as identified through interviews with community stakeholders, include the following:

- Managing population growth, which may include directing development toward urban centers, reducing congestion, providing the amenities needed for urban communities to thrive, ensuring affordable housing, and maintaining quality-of-life for residents.
- Reducing divisiveness around development.
- Increasing food and energy security through the protection of lands for agriculture and renewable energy.
- Reducing invasive species in a fragile island environment.
- Adapting to climate change, particularly on the coast.
- Ensuring access to parks, trails, and open space by residents.

It is clear that O‘ahu’s farms, sacred places, picturesque communities, pristine beaches, and verdant mountains weave an important part of the interconnected story of the island and its people. These landscapes hold mo‘olelo (stories) that tie us to Hawai‘i’s ancestral past and current practices; give us beautiful places to enjoy and explore; give us the opportunity to achieve food diversity and security; and keep us connected to a flourishing and vibrant Hawaiian culture. This report provides a “Greenprint” for how O‘ahu can chart a course toward a future in which development is balanced with conservation.

[1] Hawai‘i Department of Business, Economic Development, and Tourism, Population and Economic Projections for the State of Hawaii to 2040 (2012), accessed September 6, 2013, http://files.hawaii.gov/dbedt/economic/data_reports/2040-long-range-forecast/2040-long-range-forecast.pdf.



WHAT IS A GREENPRINT?

A Greenprint is a map-based plan to help communities prioritize their park and conservation goals. The Greenprint process engages local residents in an in-depth, transparent, and collaborative planning and mapping exercise designed to both identify the places most important to communities and determine strategies for protecting them.

WHY A GREENPRINT FOR O‘AHU?

THE GREENPRINT FOR O‘AHU is a way to address the environmental and land-use concerns facing the island today. The process began with a Greenprint for the North Shore (in partnership with the North Shore Community Land Trust) in 2012. The effort expanded to all of O‘ahu in 2013 in partnership with the Office of Hawaiian Affairs (OHA). Together, OHA and TPL, with support from Townscape, Inc., worked to create a set of maps that identify high-priority lands for voluntary conservation and develop strategies for implementation. In order to accomplish these goals, these entities, engaged with a broad cross-section of residents to quantify the subjective values that the people of O‘ahu hold for conservation. These values were then translated into maps that highlight the special areas that embody the conservation values of residents. The result is a sustainable plan based on local priorities and grounded in science designed to meet community conservation goals of protecting the island’s iconic cultural, historical, agricultural, natural, coastal, and scenic landscapes. Ultimately, this plan can guide voluntary land conservation with willing landowners in order to honor local values and culture as it incorporates hard science.

> ***“The value of the Greenprint is the opportunity for a comprehensive look at conservation. It takes a process that can be very reactionary and provincial and helps prioritize for decision-makers and community members the important areas that we need to focus on first.”***
>
> —Blake Oshiro, deputy chief of staff, the Office of Governor Neil Abercrombie

The North Shore Greenprint

IN 2011, the North Shore Community Land Trust (NSCLT) and The Trust for Public Land partnered to create a Greenprint for the North Shore of O‘ahu. For more than a year, the two organizations worked to gather information from the community and local experts to identify and map the community’s priority conservation values for a 30-mile stretch of coast dotted with pristine beaches and small communities from Ka‘ena Point to Kahuku Point. The study area included more than 90,000 acres of land, more than 16,500 of which are protected from development today.

The public outreach process led to the establishment of preservation priorities based on the North Shore community’s conservation values. The community values decided on through the public outreach component of the project were as follows: protect agricultural lands, increase recreation and public access opportunities, preserve cultural and historic places, preserve and enhance view planes, protect natural habitats for plants and animals, protect water quality and quantity, and protect coastal regions. After priority areas were revealed through the outreach process, TPL, with help from the Technical Advisory Team, created maps to showcase the data. The maps indicate where organizations should concentrate their preservation efforts. The completed North Shore Greenprint identifies the lands critical to each value and defines actions and goals to guide conservation and protect the rich natural and cultural heritage of the North Shore. For the purposes of this report, the North Shore maps have been combined with the O‘ahu Greenprint maps to give an overall view of the conservation priorities of the people of O‘ahu.

MISSION AND OBJECTIVES

THE O‘AHU GREENPRINT KICKED OFF with stakeholder meetings in which participants (collectively called the Island Leadership Team) developed and then confirmed a mission and set of objectives for the project. They are as follows:

Mission Statement

To understand the values O‘ahu residents associate with land and water resources and to use that community-based knowledge to develop a conservation plan that will help perpetuate those values for present and future generations by guiding purchases of threatened, privately owned land and resources through voluntary fee simple acquisition or conservation easements from willing landowners.

Objectives

1. Establish the relative priority of values residents place on land and resources from the mountains into the ocean, including cultural, recreational, natural, historic, agricultural, subsistence, and other values.
2. Identify which important lands and water resources are most threatened or most in need of restoration and develop strategies to protect them and the associated values that make them important.
3. Strengthen and coordinate existing conservation networks island-wide.
4. Promote long-term conservation, restoration, and stewardship (aloha ‘āina) that is strategic and responsive to community needs and values.
5. Increase community awareness of and ensure proactive community action related to:
    a. The value of and need to protect and revitalize Hawaiian cultural sites, places, landscapes, and historic properties.
    b. The importance of other conservation values such as agricultural, natural, and recreational values.
    c. The importance of creating synergy among all conservation values.
    d. The imperative for a balanced approach to growth.
    e. The tools for preserving critical lands.
6. Acknowledge and honor important resources that cannot be mapped.

What is voluntary land conservation?

THE GREENPRINT MISSION includes guiding purchases of threatened, privately owned land and resources through voluntary fee simple acquisition or conservation easements from willing landowners. Land trusts and organizations like The Trust for Public Land help willing landowners who are interested in selling property while protecting land from development. They can help to find buyers for conserved land or place a conservation easement on the property. A conservation easement is an agreement to give up some of the rights associated with a property while enabling the landowner to retain ownership of the land, continue to live on and enjoy that property, and sell or pass it on to heirs. Conservation easements are tailored to the unique circumstances of each property.

THE GREENPRINTING PROCESS

TIMELINE AT A GLANCE

Spring–Winter 2013: Community Engagement and Current Conditions Review
In developing the Greenprint, TPL first completed a current conditions review of O‘ahu. TPL and OHA (project team) built on that research through community outreach including SpeakOuts, interviews, and Island Leadership Team (ILT) meetings. Through this process, the project team was able to establish the value residents place on important cultural, recreational, and natural resources on O‘ahu. A Technical Advisory Team (TAT) was created to guide the mapping process. Please see the Acknowledgments section for the full list of attendees at Island Leadership Team meetings and members of the Technical Advisory Team.

Fall 2013–Winter 2014: Mapping Conservation Values
GIS mapping experts from both TPL and OHA worked with the TAT to collect data, refine that data, and integrate it with the community-developed values to create maps identifying the best opportunities for land protection throughout O‘ahu.

Spring 2014: Island Leadership Team Creates an Action Plan for Realizing the Greenprint
The project team compiled action ideas from the public outreach process and presented a draft action plan to the Island Leadership Team in March 2014. The ILT offered suggestions for refining the action plan for realizing the Greenprint in June 2014 and confirmed the Greenprint maps.

Summer 2014: Finalize Greenprint Results
The project team created and placed the mapping site online and developed final materials.

“If we don’t preserve the land, then the stories and the legends are lost, and our history is lost. This project helps us to preserve the last remnants of our past.”

—Kamana‘opono Crabbe,
CEO, Office of Hawaiian Affairs

THE O‘AHU GREENPRINT

CURRENT CONDITIONS AND COMMUNITY ENGAGEMENT

CURRENT CONDITIONS REVIEW

In order to develop the Current Conditions Report, The Trust for Public Land staff collected and synthesized background information. This information included related planning efforts such as local sustainable community and development plans, water management plans, state planning and economic development efforts, and demographic trends. The report provided context throughout the planning process and informed the project objectives, mapping analysis, and action plan. Please see Appendix B for the full Current Conditions Report.

COMMUNITY ENGAGEMENT

- **SpeakOuts**

> **What is a SpeakOut?**
>
> **A SPEAKOUT IS AN INTERACTIVE DISPLAY** where organizers can share informative materials on an issue and participants can express their views and provide their feedback in an informal and cooperative environment. In order to understand the community's conservation priorities, OHA and The Trust for Public Land worked with Townscape, Inc., to develop and host a booth at several community events throughout O‘ahu in a SpeakOut-style format. At these events, staff shared information on conservation and Greenprints with event participants and feedback was solicited on specific questions.

The Staff and volunteers from TPL, OHA, and Townscape, Inc., (collectively, the O‘ahu Greenprint team or project team) attended 12 events from May through December 2013, hosting booths in a SpeakOut-style format. The goal was to solicit ideas and share information about the Greenprint with residents throughout the island's eight planning districts at community events, rather than through formal public hearings. Please see Appendix C, Community Outreach Summary Report, for a listing of all of the community events attended.

The project team solicited feedback in a variety of ways, including through surveys (hard copy and online), mapping exercises, voting on conservation value priorities, and even drawing pictures of favorite outdoor activities for keiki. A total of 910 surveys were completed, 784 at the SpeakOuts and 126 online. In the survey, participants were asked several questions to gain an understanding of the types of land most important to protect. Responses painted a picture of what residents value most about O‘ahu, what lands are at risk of changing, and what people want for the island over the next 25 years. Please see Appendix C for more information about the SpeakOuts, including a description of trends that emerged through our public engagement.

- **The Island Leadership Team**
  The project team developed a stakeholder committee called the Island Leadership Team, which comprised more than 90 experts and interested residents. This team met in July 2013, October 2013, March 2014, and June 2014. Please see the Acknowledgments section for the full list of members of the Island Leadership Team and Appendix D for summaries of the four Island Leadership Team meetings.

- **Interviews**
  The project team completed 25 interviews by phone and in-person throughout O‘ahu with stakeholders during the fall of 2013. The vast majority of these interviews took place in person in Honolulu from October 25 to November 1, 2013. Through these interviews we received advice and candid feedback about what a successful Greenprint would entail and how to ensure that this project and plan are implemented toward that goal. Please see Appendix A for a full list of those interviewed.

  In total, we estimate that the O‘ahu Greenprint team reached more than 1,300 people through this public engagement effort.

MAPPING CONSERVATION VALUES

Geographic Information Systems (GIS) analysis uses the best available spatial data to represent each conservation value. The conservation values expressed by residents through the public outreach and stakeholder engagement process informed the development of GIS maps. These maps, in turn, served as the basis for the online mapping tool that enables users to generate land conservation opportunity maps for the island.

- **The Technical Advisory Team**
  In moving from the public outreach phase of the Greenprint to the Geographic Information System (GIS) mapping and modeling phase, a Technical Advisory Team (TAT) of local mapping experts provided strategic advice on data collection and data modeling. The TAT was responsible for making recommendations related to data. The mapping experts’ advice was invaluable in developing the criteria for each goal; identifying the best available data and its sources; and advising through the modeling process to ensure that modeling assumptions were based on defensible science and that input data and model results were accurate.

THE GREENPRINT MAPS

A set of seven conservation values emerged from the community engagement process. The TAT analyzed public input from surveys, Island Leadership Team guidance, and SpeakOut information to inform the development of a set of color-coded maps of O‘ahu that incorporate those land and water conservation values. By showcasing lands most in need of protection, these maps will allow organizations and agencies to coordinate planning and pursue projects where investments of limited dollars can yield the highest possible conservation impact. Today, 71,425 acres of land (about 20 percent of the island) are already conserved. These lands include beach parks, botanical gardens, community parks, district parks, regional cultural areas, beach access walkways, steep slope areas, and state parks. About 54,000 off-shore acres are protected as a National Marine Sanctuary. Also noteworthy, on-shore about 55,000 acres are considered high-intensity developed (about 15 percent percent of the island), and about 50,000 acres are considered

There is one map for each of the Greenprint values. These values are as follows: Protect Agricultural Lands, Preserve Cultural and Historic Places, Protect Coastal Regions, Protect Natural Habitats, Increase Recreation and Public Access Opportunities, Preserve and Enhance View Planes, and Protect Water Quality and Quantity.

While The Trust for Public Land and the Office of Hawaiian Affairs strive to provide the best data available, we depend on sources outside our organizations for much of our information. We also acknowledge that there are likely data gaps in the mapped conservation values owing to undocumented cultural sites, native natural habitat, and other resources. Thus, there may be very special and significant places not yet reflected in the maps. Our maps are meant to provide information that can encourage various conservation efforts. The Trust for Public Land and the Office of Hawaiian Affairs are not responsible for any errors, omissions, or positional accuracy. The maps are provided without warranties, expressed or implied, and will be updated and corrected over time as new data becomes available.

Table 1. Conservation Opportunity Lands by Conservation Value

Greenprint Value	High-Priority* Areas for Protection (% of O‘ahu)
Protect Agricultural Lands	38,928 (10%)
Preserve Cultural and Historic Places	98,760 (26%)
Protect Coastal Regions	3,849 (1%)
Protect Natural Habitats**	46,749 (12%)
Increase Recreation and Public Access Opportunities	18,028 (5%)
Preserve and Enhance View Planes	18,857 (5%)
Protect Water Quality and Quantity	101,887 (27%)

* High-priority areas reflect a score of 5 on a scale of 0–5 for the Greenprint. There may also be overlap between values.
** Includes North Shore Greenprint value Protect Natural Habitats for Plants and Animals.

Table 2. Conservation Opportunity Offshore Areas by Conservation Value

Greenprint Value	High-Priority* Areas for Protection (% of offshore O‘ahu)
Protect Cultural and Historic Places	64 (.03%)
Protect Coastal Regions	40,916 (22%)
Protect Natural Habitats**	3,843 (2%)
Increase Recreation and Public Access Opportunities	3,476 (2%)
Preserve and Enhance View Planes	1,462 (.80%)
Protect Water Quality and Quantity	1,611 (.88%)

* High-priority areas reflect a score of 5 on a scale of 0–5 for the Greenprint. There may also be overlap between values.
** Includes North Shore Greenprint value Protect Natural Habitats for Plants and Animals.

The seven maps describe the values as follows (in no particular order):

Protect Agricultural Lands

"In the past five years, the local food movement has gone from off-the-radar to front and center."

—Josh Stanbro, Director, Environment and Sustainability Program, Hawai'i Community Foundation

O'ahu's subtropical climate and year-round growing season provide ideal conditions for agriculture. However, O'ahu's topography, with the Wai'anae mountain range to the west and the Ko'olau mountain range running along its eastern coast, ensures that much of the island is steeply sloped. Agriculture is therefore focused in the fertile area between the ranges and within smaller coastal valleys.

A century ago, much of Hawai'i's agricultural lands were used for sugarcane and pineapple production. In Central O'ahu, many of those lands are converting to diversified-crop agriculture or suburban use. Today, Hawai'i still imports 85 to 90 percent of its food.[3] Stakeholders consistently prioritized a move toward a more sustainable and self-reliant agricultural system on O'ahu in which farms cultivate locally consumed food crops.

Across the island, about 107,000 acres zoned for agriculture (approximately 65,000 acres are zoned as Restricted Agricultural District and about 42,000 acres are zoned General Agricultural District). Island-wide, about 50,000 acres are considered prime agricultural lands.

This map reveals the results for the Protect Agricultural Lands value. Criteria considered included the following: protect lands to grow more taro and other traditional Hawaiian crops; protect farmlands; protect prime and important agricultural lands; identify lands zoned for agriculture; and protect large-scale agriculture dedicated to year-round local consumption, including fish, produce, and animal products. The greatest weight was applied to protecting prime and important agricultural lands, protecting farmlands, and protecting lands to grow traditional Hawaiian crops.

Across the island, nearly 40,000 acres have been identified as high priority for protecting agricultural lands. Outside the developed areas of O'ahu, these conservation priority areas extend across much of the island, particularly in Central O'ahu, North Shore, and the Leeward coast.

[3] Hawai'i Department of Business, Economic Development & Tourism, in cooperation with the Department of Agriculture, Increased Food Security and Food Self-Sufficiency Strategy (2012), p. ii, accessed September 2, 2014, http://files.hawaii.gov/dbedt/op/spb/INCREASED_FOOD_SECURITY_AND_FOOD_SELF_SUFFICIENCY_STRATEGY.pdf

Hawai'i Statewide Conservation Planning - O'ahu Greenprint

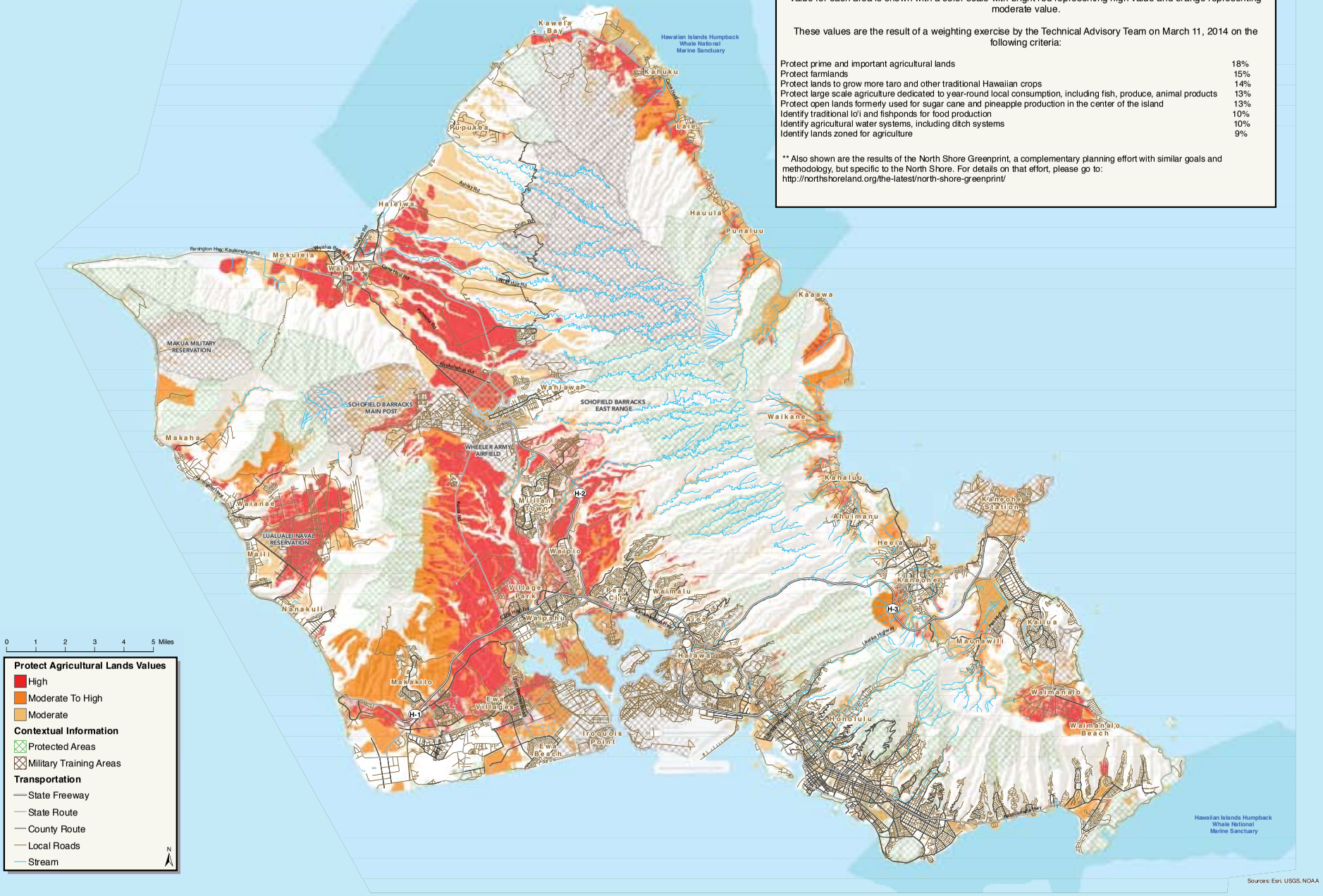
Protect Agricultural Lands

This map displays the results of the Protect Agricultural Lands Values goal for the O'ahu Greenprint**. The degree of value for each area is shown with a color scale with bright red representing high value and orange representing moderate value.

These values are the result of a weighting exercise by the Technical Advisory Team on March 11, 2014 on the following criteria:

Protect prime and important agricultural lands	18%
Protect farmlands	15%
Protect lands to grow more taro and other traditional Hawaiian crops	14%
Protect large scale agriculture dedicated to year-round local consumption, including fish, produce, animal products	13%
Protect open lands formerly used for sugar cane and pineapple production in the center of the island	13%
Identify traditional lo'i and fishponds for food production	10%
Identify agricultural water systems, including ditch systems	10%
Identify lands zoned for agriculture	9%

** Also shown are the results of the North Shore Greenprint, a complementary planning effort with similar goals and methodology, but specific to the North Shore. For details on that effort, please go to: http://northshoreland.org/the-latest/north-shore-greenprint/



Preserve Cultural and Historic Places

> ***"My feeling is that no ancestor is insignificant. You do not have to have been an ali'i to be worthy of preservation. We must protect our wahi pana, our native, sacred, and historical sites, even if they are not functioning right now. If you can protect an area from being inappropriately developed, the potential for Hawaiians to bring it back to life will remain."***
>
> —Māpuana de Silva, Kumu Hula, Hālau Mohala 'Ilima

This map identifies, in dark red, land identified as priority for protection of cultural and historic places. The five criteria informing the development of the map were developed through public outreach. Through the questionnaire, participants shared places throughout the island that they felt are in need of protection, including Hawaiian cultural and traditional agricultural sites such as lo'i, fishponds, and places necessary for cultural and religious practices. The resulting criteria were each weighted equally. These criteria include significant archaeological, historic, sacred, religious sites and burial grounds, existing fishponds, historic ahupua'a, cultural trails, and traditional Hawaiian agricultural zones. The equal weighting came from the belief that no cultural or historical site could be determined to be of a higher priority than another. For example, how can we determine that an ancient burial site is somehow more or less important than a current place of worship?

Across the island, nearly 100,000 acres of land have been identified as high priority for cultural and historic preservation. The map includes all cultural sites, not just ancient cultural sites. All sites on the Hawai'i register of historic places are included in this map. Hawaiian cultural practices are dependent on 'āina, wai, and kai resources. This pattern is evident in the high concentrations of priority lands identified within our watersheds and near our streams, coastlines, and fishponds. As a general premise, we recognize that our natural resources are also our cultural resources. This pattern is evident in the high concentrations of priority lands identified within watersheds and near streams, coastlines, and fishponds. However, for the purposes of these mapping exercises, it is helpful to place these resources in separate maps.

Hawai'i Statewide Conservation Planning - O'ahu Greenprint

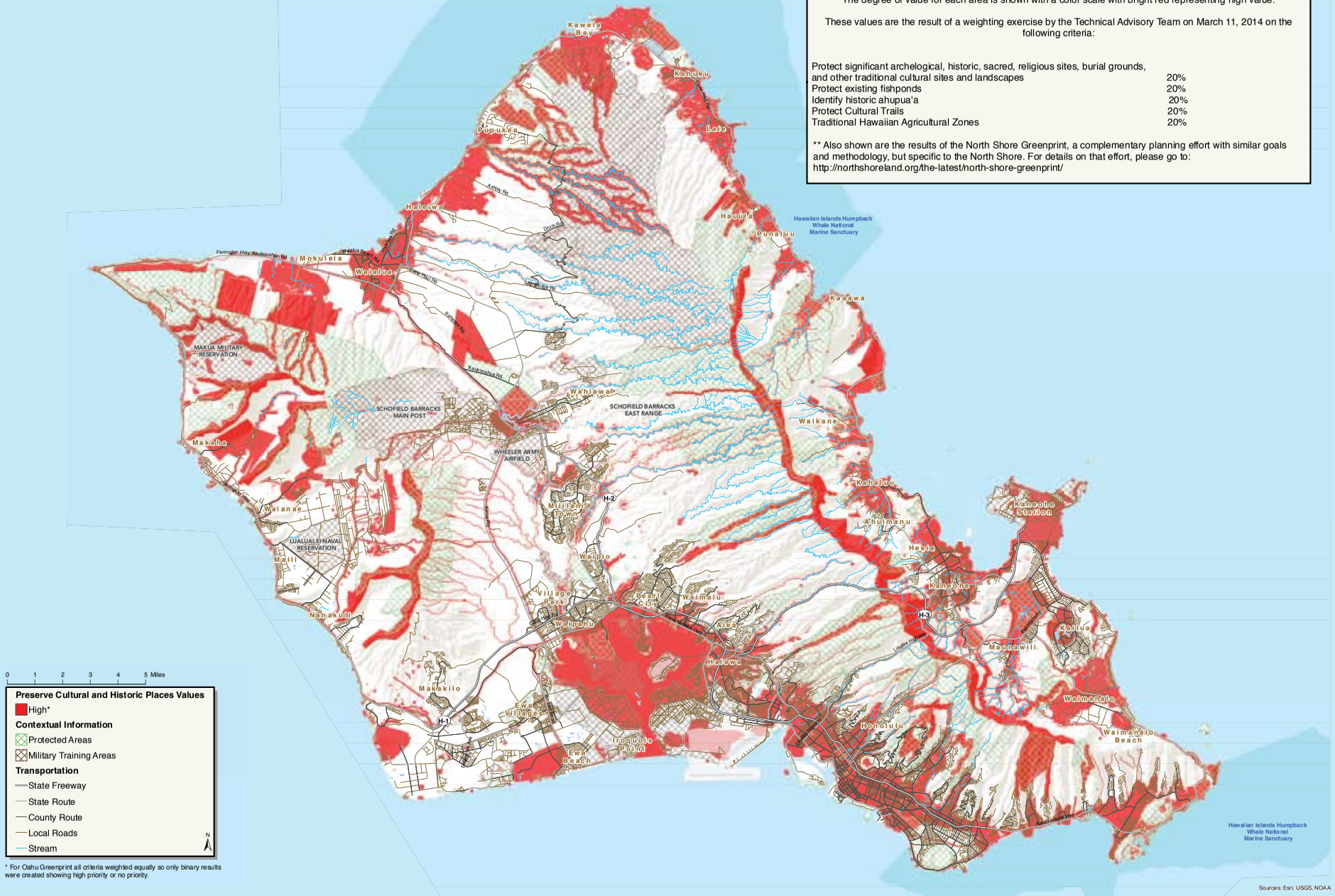
Preserve Cultural and Historic Places

This map displays the results of the Preserve Cultural and Historic Places Values goal for the O'ahu Greenprint**. The degree of value for each area is shown with a color scale with bright red representing high value.

These values are the result of a weighting exercise by the Technical Advisory Team on March 11, 2014 on the following criteria:

Protect significant archelogical, historic, sacred, religious sites, burial grounds, and other traditional cultural sites and landscapes	20%
Protect existing fishponds	20%
Identify historic ahupua'a	20%
Protect Cultural Trails	20%
Traditional Hawaiian Agricultural Zones	20%

** Also shown are the results of the North Shore Greenprint, a complementary planning effort with similar goals and methodology, but specific to the North Shore. For details on that effort, please go to: http://northshoreland.org/the-latest/north-shore-greenprint/



* For Oahu Greenprint all criteria weighted equally so only binary results were created showing high priority or no priority.

Sources: Esri, USGS, NOAA

Protect Coastal Regions

"Protecting coastal lands and access to those lands is critical to how we define ourselves."

—Blake Oshiro, Deputy Chief of Staff, Governor Neil Abercrombie

This map displays the results for the Protect Coastal Regions value. The criteria informing this value identify pristine shoreline; nearshore waters, coral reefs, and fisheries; protect estuaries and input of fresh water into the ocean; and protect natural waterways with sufficient flow into the ocean. The greatest weight was applied to protecting pristine shoreline and protecting nearshore waters, coral reefs, and fisheries.

Across the island, more than 40,000 offshore acres and 6,000 land acres have been identified as high priority for coastal protection.

Protect Natural Habitats

"Preserving watershed lands is important. Water is the source of life, and if you preserve the watersheds, then you are realizing other conservation values too."

—David Tanoue, Manager, Survey & Planning Departments, R. M. Towill Corporation

O‘ahu’s unique island ecosystems have created important places for more than 50 endangered and threatened native species to grow and thrive. Examples of endangered or threatened species include the ‘ōpe‘ape‘a (Hawaiian hoary bat), ‘īlioholoikauaua (Hawaiian monk seal), and the Honu (green sea turtle). One of the greatest threats to the continued viability of these species is habitat loss. Throughout the Greenprint process, residents and stakeholders expressed a strong desire to use land conservation to protect these native plants and animals.

This map displays the results of the Protect Natural Habitats value. The criteria included the following: protect native forests, protect native and natural habitat, protect vegetation along streams, protect endangered and rare native species habitat, protect spawning habitat, protect and restore wetlands, protect native animal populations, protect ridges and mountaintops, protect unfragmented areas and protect intact ahupua‘a systems, provide wild and natural green areas, identify and protect endangered species areas for migration because of climate change, and protect karst systems. The greatest weight was applied to protecting native forests, native and natural habitat, and vegetation along streams.

Across the island, over 45,000 acres of land have been identified as high priority for natural habitats.[4] The highest-priority areas for the protection of natural habitats are along the Ko‘olau and Wai‘anae mountain ranges and their watersheds.

[4] In the North Shore Greenprint, this value was called Protect Natural Habitats for Plants and Animals.

Hawai'i Statewide Conservation Planning - O'ahu Greenprint

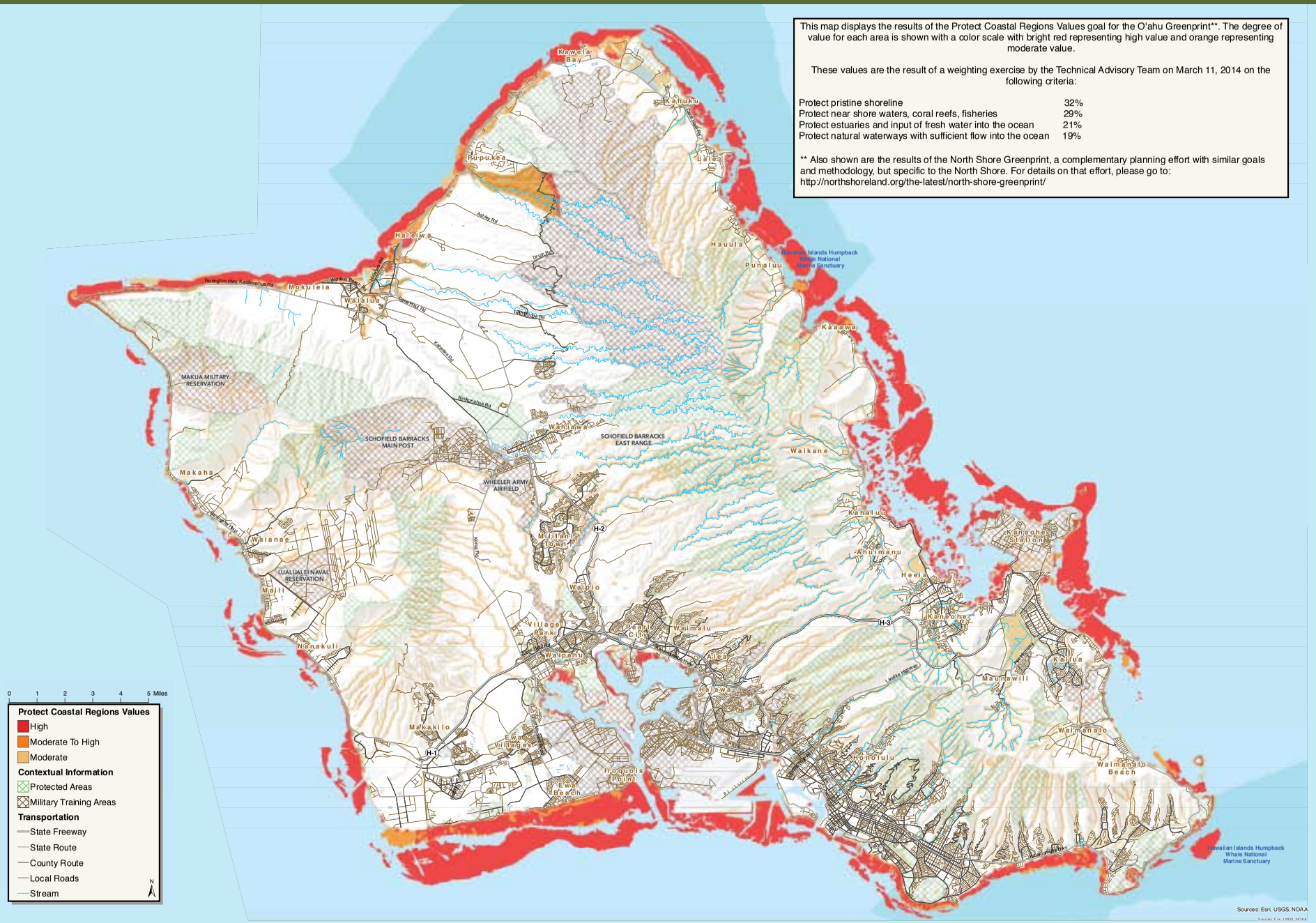
Protect Coastal Regions

This map displays the results of the Protect Coastal Regions Values goal for the O'ahu Greenprint**. The degree of value for each area is shown with a color scale with bright red representing high value and orange representing moderate value.

These values are the result of a weighting exercise by the Technical Advisory Team on March 11, 2014 on the following criteria:

Protect pristine shoreline	32%
Protect near shore waters, coral reefs, fisheries	29%
Protect estuaries and input of fresh water into the ocean	21%
Protect natural waterways with sufficient flow into the ocean	19%

** Also shown are the results of the North Shore Greenprint, a complementary planning effort with similar goals and methodology, but specific to the North Shore. For details on that effort, please go to: http://northshoreland.org/the-latest/north-shore-greenprint/



Increase Recreation and Public Access Opportunities

> ***"Hawai'i's unique natural beauty, clean air and water, and rich cultural diversity contribute to my quality-of-life."***
>
> —Robert Harris, Executive Director, Sierra Club Hawai'i Chapter

This map displays the results of the Increase Recreation and Public Access Opportunities value for the O'ahu Greenprint. The criteria informing this value included the following: protect access to mountains and ocean; protect beach access; improve, protect, and increase the number of hiking trails and trailheads; protect ocean fishing areas; and create more protected bicycle lanes.

Across the island, over 18,000 acres of land have been identified as high priority for recreation and public access opportunities. Many of the highest-priority areas for increasing recreation and public access opportunities are along the O'ahu coastline where there is no coastal access within a quarter mile of the closest existing access point. The Mōkapu peninsula and Pearl Harbor appear as high priority for increased access owing to the fact that these military lands are currently off limits to the public. If all high-priority bicycle trails/lanes were preserved within study area, 568 miles of new trails/lanes would be created.

Hawai'i Statewide Conservation Planning - O'ahu Greenprint

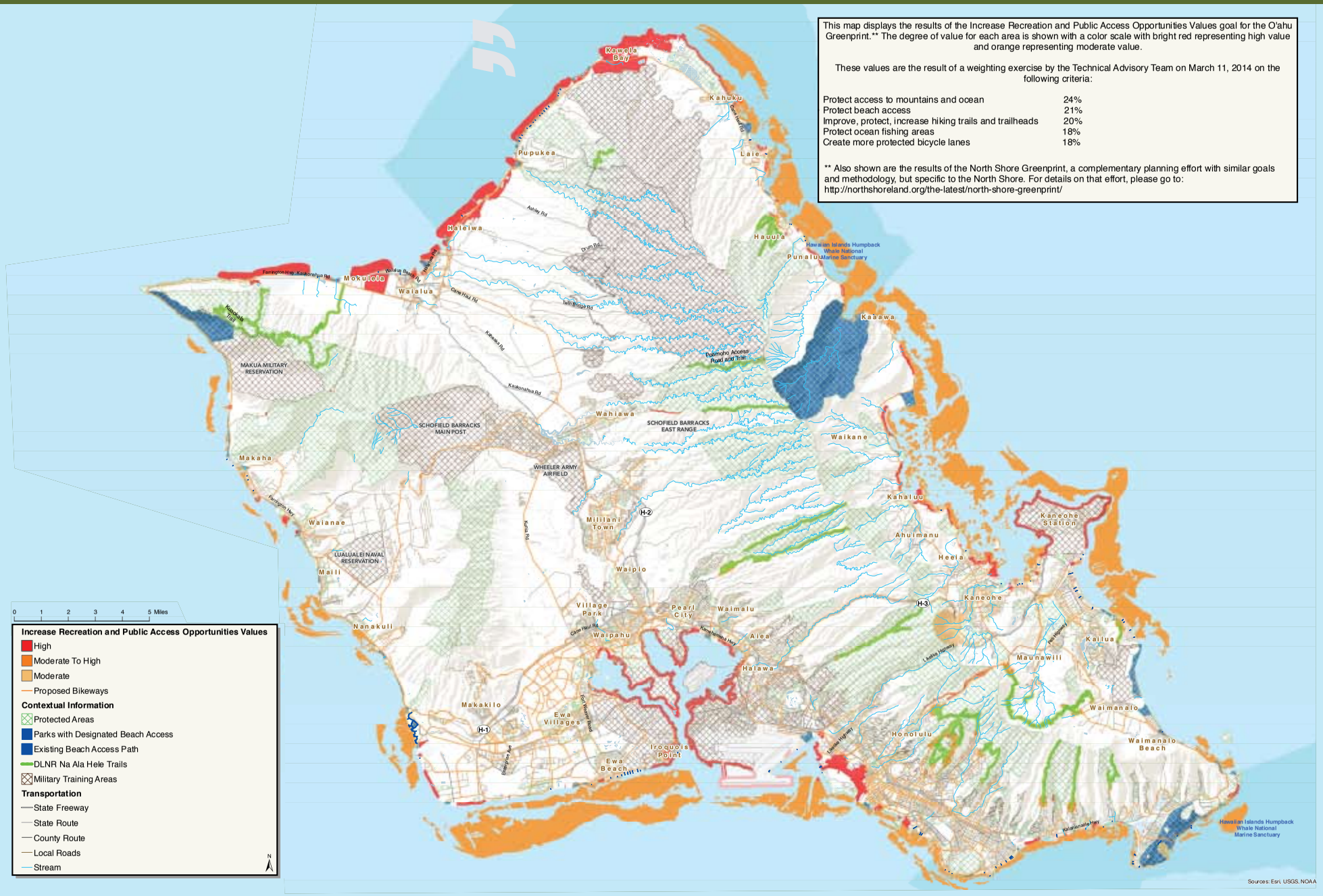
Increase Recreation and Public Access Opportunities

This map displays the results of the Increase Recreation and Public Access Opportunities Values goal for the O'ahu Greenprint.** The degree of value for each area is shown with a color scale with bright red representing high value and orange representing moderate value.

These values are the result of a weighting exercise by the Technical Advisory Team on March 11, 2014 on the following criteria:

Protect access to mountains and ocean	24%
Protect beach access	21%
Improve, protect, increase hiking trails and trailheads	20%
Protect ocean fishing areas	18%
Create more protected bicycle lanes	18%

** Also shown are the results of the North Shore Greenprint, a complementary planning effort with similar goals and methodology, but specific to the North Shore. For details on that effort, please go to: http://northshoreland.org/the-latest/north-shore-greenprint/



Preserve and Enhance View Planes

> ***"I enjoy the views from the roads around the coast. Just driving along the coast is very soothing."***
>
> —Dan Quinn, Director, State Parks, Hawai'i Department of Land and Natural Resources

O'ahu's scenic landscapes, providing unparalleled views of both pristine beaches and dramatic mountains, are an important part of Hawai'i's character and identity. This map displays the results of the Preserve and Enhance View Planes value. The criteria informing this value included the following: protect views of the shoreline/ocean, preserve views of the undeveloped mountains, and preserve scenic views from roads.

Across the island, nearly 19,000 acres of land have been identified as high priority for the preservation and enhancement of view planes. Fewer than 5,000 acres of the high-priority land acres for this value have been conserved across the island. The highest priority areas for preserving and enhancing view planes are on the North Shore, along watersheds on the Leeward coast, and along the ridgelines of the Windward coast. Areas described as particularly important for protection during public outreach included the views—both to and from—the Ka Iwi coast (from Hanauma Bay to Makapu'u), views of the dramatic peaks of the Ko'olau range from the Pali and Kamehameha highways, and the views of Mount Ka'ala from the Leeward coast and North Shore.

Hawai'i Statewide Conservation Planning - O'ahu Greenprint

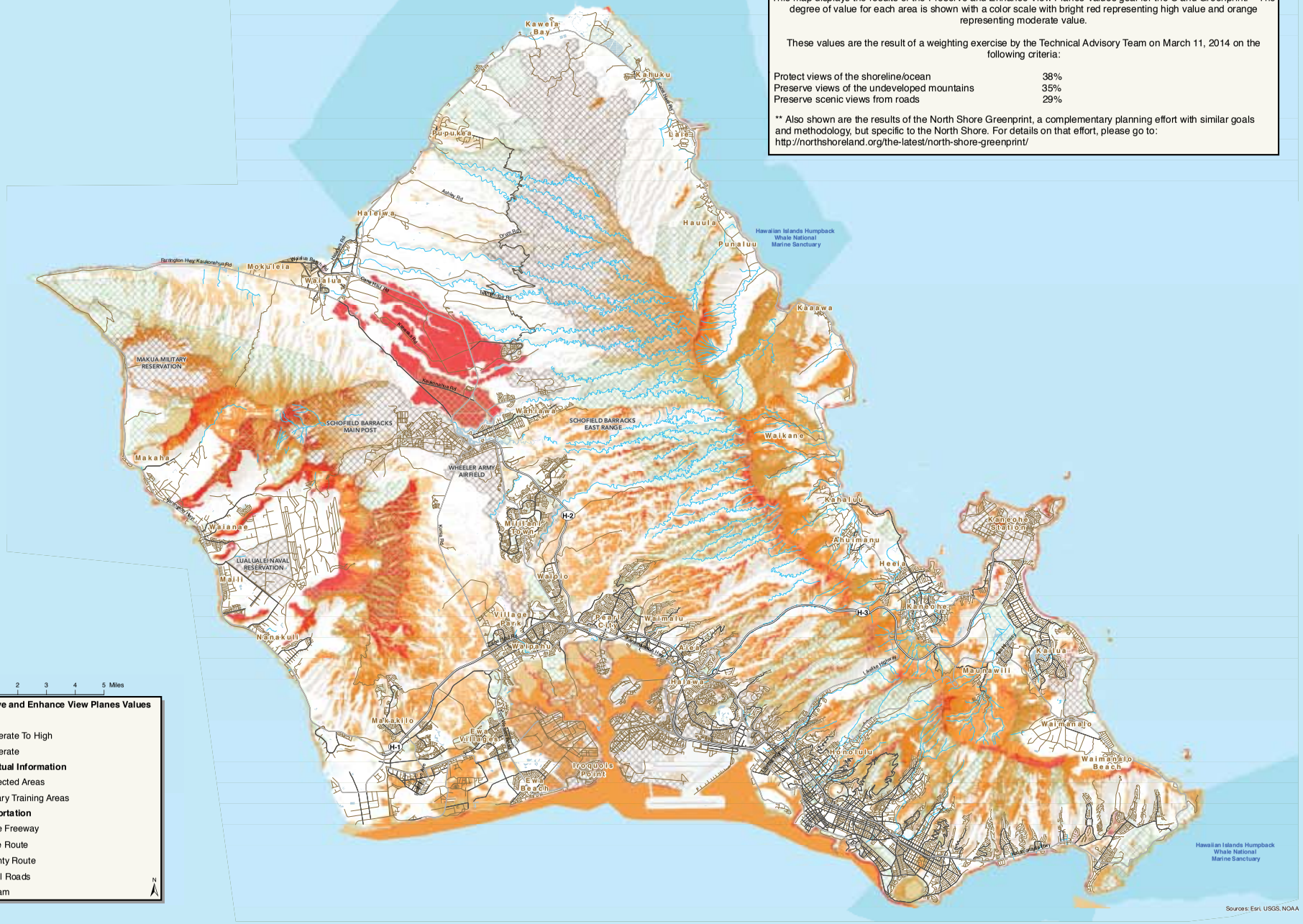
Preserve and Enhance View Planes

This map displays the results of the Preserve and Enhance View Planes Values goal for the O'ahu Greenprint.** The degree of value for each area is shown with a color scale with bright red representing high value and orange representing moderate value.

These values are the result of a weighting exercise by the Technical Advisory Team on March 11, 2014 on the following criteria:

Protect views of the shoreline/ocean	38%
Preserve views of the undeveloped mountains	35%
Preserve scenic views from roads	29%

** Also shown are the results of the North Shore Greenprint, a complementary planning effort with similar goals and methodology, but specific to the North Shore. For details on that effort, please go to: http://northshoreland.org/the-latest/north-shore-greenprint/



Protect Water Quality and Quantity

> ***"Watersheds are very important to protect. It might not be one area that is more important than another, but the entire system has to function so we must approach this work in a connected way, thinking about linkages."***
>
> —Dean Okimoto, farmer, Nalo Farms

Public water supplies in O'ahu are provided entirely by groundwater while streams provide irrigation and vital aquatic habitat.[5] Municipal demands make up more than 80 percent of total water use on the island, and it is estimated that demand for municipal potable water will increase 33 percent between 2000 and 2030. Thus, the protection of water (both quantity and quality) is a pressing issue for the residents of O'ahu. This map displays the results of the Protect Water Quality and Quantity value for the O'ahu Greenprint. The public outreach that developed included input from stakeholders at the first Island Leadership Team meeting. At that meeting, stakeholders expressed a desire to preserve whole watersheds, protect aquifer recharge, create connected greenways, and protect vegetation along streams. Ultimately, the criteria informing this value included the following: protect natural waterways, nearshore waters, and fisheries; protect and restore entire stream corridors, including vegetation; protect and restore wetlands; protect aquifer recharge; identify areas to recreate in watersheds; preserve whole watersheds; and preserve natural springs. The criteria given the most weight were protect natural waterways, nearshore waters, and fisheries; protect and restore entire stream corridors, including vegetation; and protect and restore wetlands.

Across the island, more than 100,000 acres of land (27 percent of O'ahu) have been identified as high priority for the protection of water quality and quantity. Throughout the Greenprint process, residents and stakeholders repeatedly stressed the importance of protecting water systems and land that can aid in creating continuity between mauka water sources, flowing streams, healthy estuaries, and the ocean.

[5] Stephen Anthony, Charles Hunt, Jr., Anne Brasher, Lisa Miller, and Michael Tomlinson, *Water Quality on the Island of O'ahu*, 1999–2000 (2004), p. 2, U.S. Geological Society, Circular 1239, accessed September 19, 2013, http://pubs.usgs.gov/circ/2004/1239/pdf/circular1239.pdf.

Hawai'i Statewide Conservation Planning - O'ahu Greenprint

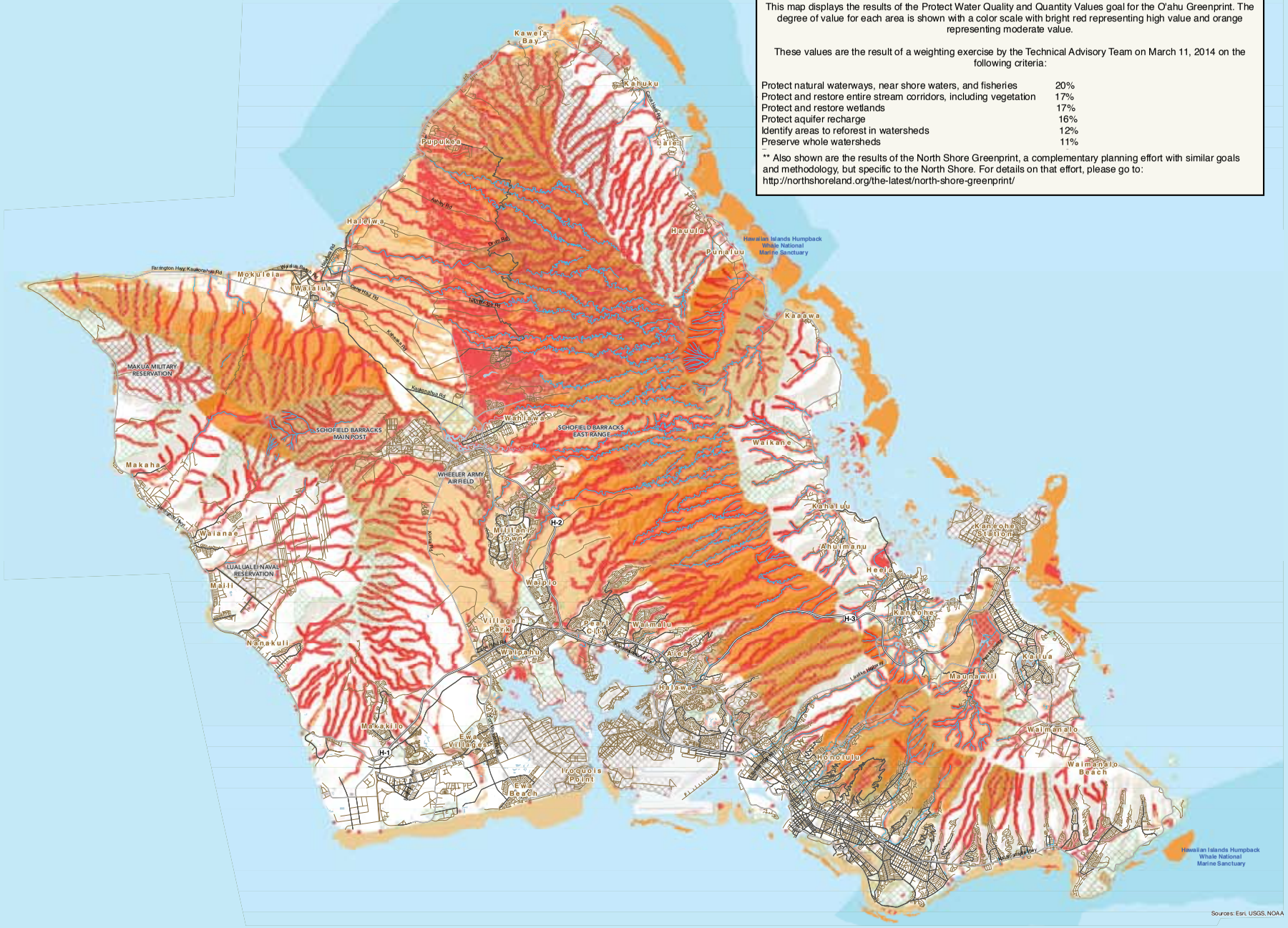
Protect Water Quality and Quantity

This map displays the results of the Protect Water Quality and Quantity Values goal for the O'ahu Greenprint. The degree of value for each area is shown with a color scale with bright red representing high value and orange representing moderate value.

These values are the result of a weighting exercise by the Technical Advisory Team on March 11, 2014 on the following criteria:

Protect natural waterways, near shore waters, and fisheries	20%
Protect and restore entire stream corridors, including vegetation	17%
Protect and restore wetlands	17%
Protect aquifer recharge	16%
Identify areas to reforest in watersheds	12%
Preserve whole watersheds	11%

** Also shown are the results of the North Shore Greenprint, a complementary planning effort with similar goals and methodology, but specific to the North Shore. For details on that effort, please go to: http://northshoreland.org/the-latest/north-shore-greenprint/



ACTION PLAN

THE PROJECT TEAM, with stakeholder input, created a concise and focused action plan for the Greenprint. The Island Leadership Team asked TPL, OHA, and other partners working on O‘ahu to take the following steps:

CONSERVE

1. Protect important land, water, and resources as identified on the Greenprint maps using voluntary land conservation tools (e.g., purchase, conservation easements, donations).
2. Develop a sustainable strategy for updating the Greenprint data. This strategy could include:
   a. Reevaluating the maps yearly to determine whether there is new data to be added and
   b. Doing an updated survey every five to eight years and updating the maps to reflect changes in knowledge/priorities by O‘ahu residents.
3. Explore how the advancement of the Greenprint goals can reduce impacts to O‘ahu from climate change.
4. Use Greenprint data to nominate lands for protection for existing city, state, and federal funding sources and mechanisms.

COLLABORATE

1. Empower partners to utilize the online mapping portal and maps. TPL to offer mapping portal training sessions.
2. Present the Greenprint at relevant forums, such as the Hawai‘i Conservation Conference.
3. TPL to present Greenprint findings to governmental entities, commissions, and other conservation partners such as the City and County of Honolulu, Clean Water and Natural Land Commission, State Legacy Land Conservation Commission, and the Board of Land and Natural Resources Chair.
4. TPL to brief relevant agencies/commissions on how to use the maps through training sessions.
5. TPL and OHA to meet periodically to discuss ways to continue to implement the Greenprint.
6. Continue to develop and maintain healthy relationships with the owners and managers of threatened, privately owned land and resources, and identify willing landowners for voluntary fee simple acquisition or conservation easements.
7. Continue to consult with practitioners and cultural leaders regarding the conservation of lands identified on the Greenprint Preserve Cultural and Historic Places map.
8. Educate and seek more buy-in from political/government leaders regarding Greenprint and voluntary land conservation tools.

9. Offer technical support to community groups so they can use and/or refine Greenprint maps for their communities.
10. Be prepared to respond flexibly to community land conservation initiatives, such as submitting letters of support for appropriate projects that will advance Greenprint goals.

RAISE AWARENESS

Continue to conduct outreach to stakeholders and the public to raise awareness of the Greenprint; communicate the importance of conservation to preserving our unique local heritage on O‘ahu; and ensure proactive community action related to the value of and the need to protect and revitalize critical agricultural, cultural, historic, natural, and recreational lands and places.

1. Develop and deliver outreach tool kit around the Greenprint. The tool kit can include the following:
    a. PowerPoint presentation or video;
    b. Information about the benefits of land conservation, available tools for preserving critical lands, and tax incentives for private landowners;
    c. Information about the work of the Office of Hawaiian Affairs, The Trust for Public Land, and the role of voluntary land conservation on O‘ahu; and
    d. Information about projects completed with willing landowners.
2. Engage specific communities and landowners where there are known land conservation and water protection struggles to educate and determine whether voluntary land conservation is an option.
3. Offer tours of the most threatened areas/sites where permitted by landowners.
4. Use social media to disseminate information related to the O‘ahu Greenprint.
5. Spread the word about what individuals can do to assist in the implementation of the Greenprint, including donating or presenting the Greenprint to community groups.
6. Where feasible, take maps to communities (such as individual ahupua’a or moku) to empower individuals and communities. The Greenprint at this scale may assist when communities review development plans, sustainable community plans, etc. Through this effort each community can collaborate around important lands for protection.

INCREASE FUNDING

1. Actively encourage city, county, and state legislatures to increase funding for conservation.
2. TPL to discuss funding resources with relevant smaller organizations.
3. Discuss and determine appropriate methods for financing conservation projects in the mapped priority areas. These methods may include the following:
    a. Local family and community foundation grants
    b. Local and state dedicated conservation funds (state and county)
    c. Federal grants
    d. Other sources
    e. Tax benefits of voluntary conservation of land

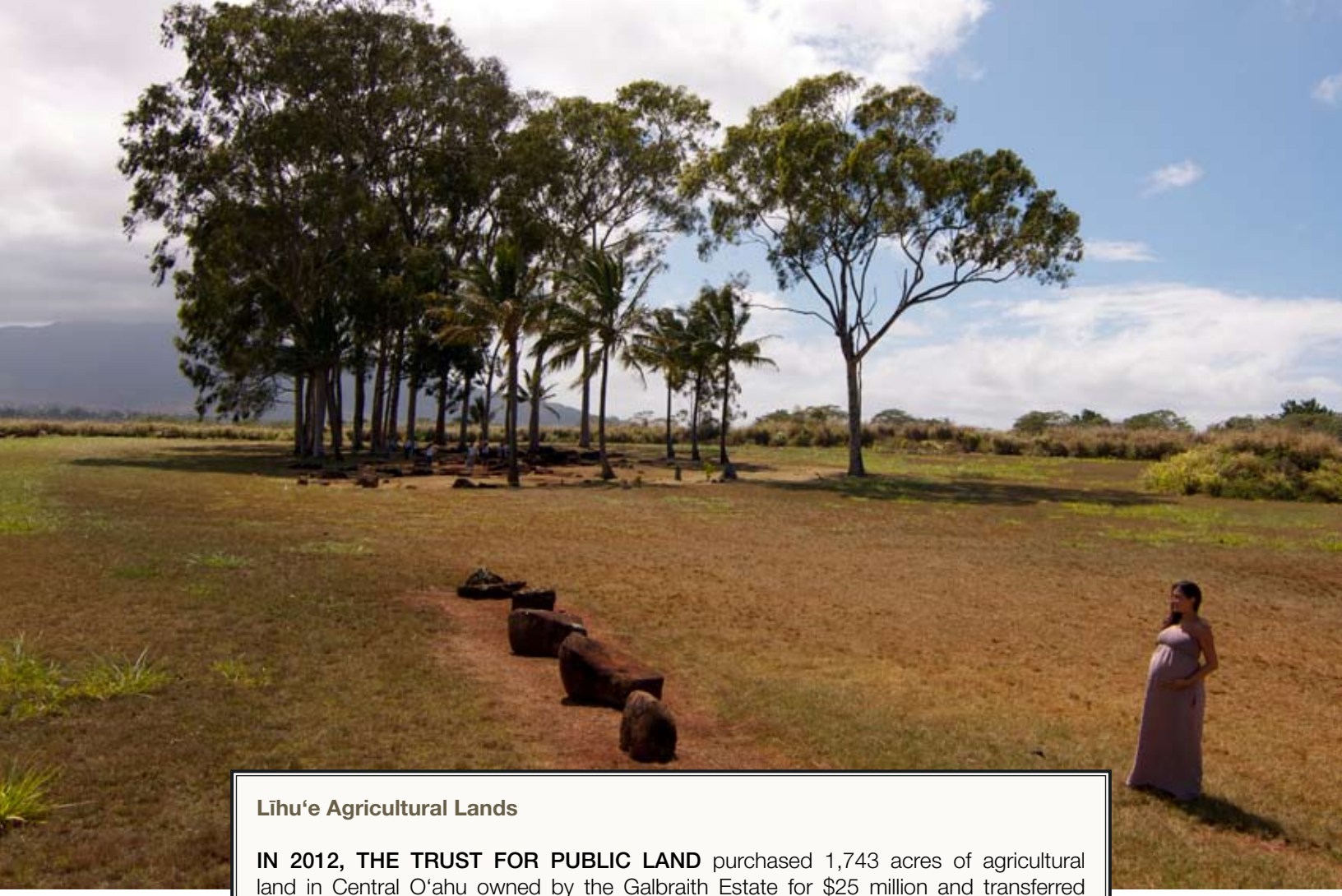
In addition to driving strategic and expanded conservation efforts throughout the island, the Greenprint can inspire residents to get more involved in local decision making about lands, join their local land trust, visit protected lands more often, or volunteer their time to help steward existing conserved land.

PROFILES IN CONSERVATION

THE GREENPRINT PROCESS is not the first time that the Office of Hawaiian Affairs and The Trust for Public Land have partnered on conservation related projects. In 2006 and 2012, OHA and TPL worked together (along with other local, regional, and statewide partners) to preserve more than 3,500 acres of important natural and cultural areas on O‘ahu. The Waimea Valley and Līhu‘e Agricultural Lands projects are just two examples of successful partnerships resulting in the conservation of lands meeting the criteria of multiple land and water protection values outlined in this Greenprint.

Waimea Valley

IN 2006, THE OFFICE OF HAWAIIAN AFFAIRS, The Trust for Public Land, the State of Hawai‘i, and the City and County of Honolulu worked together to protect Waimea Valley on O‘ahu’s North Shore. The 1,875-acre valley is one of the last intact ahupua‘a on O‘ahu and one of the community’s favorite places. Threatened with subdivision and development in 2005, the state, city, and Office of Hawaiian Affairs all contributed funding for the Office of Hawaiian Affairs to purchase the valley. Utilizing U.S. Army Compatible Use Buffer-Zone (ACUB) funding, The Trust for Public Land helped facilitate the purchase and permanent protection of this historic valley that contains a botanical garden with hundreds of rare and endangered plants, one of the most famous waterfalls on the island, and countless Hawaiian cultural sites.



Līhu‘e Agricultural Lands

IN 2012, THE TRUST FOR PUBLIC LAND purchased 1,743 acres of agricultural land in Central O‘ahu owned by the Galbraith Estate for $25 million and transferred approximately 1,200 acres to the State of Hawai‘i Agribusiness Development Corporation and approximately 500 acres to the Office of Hawaiian Affairs. The property was identified in the North Shore Greenprint as having high-value lands for agricultural, cultural, historic, view plane, public access, and water protection. Conservation easements on the land will ensure that the land is used for agriculture and not for development.

The area traditionally known as Līhu‘e once served as a training ground for Hawaiian warriors and chiefs. The area is the rural gateway to O‘ahu’s famed North Shore and is an important recharge area for one of O‘ahu’s largest drinking water aquifers. The approximately 500 acres now owned by the Office of Hawaiian Affairs surround Kūkaniloko (the birthing stones of the ali‘i), one of O‘ahu’s most cherished sacred sites. The land is key to Hawai‘i”s future food security, is located near local markets and transportation corridors, and has an ample supply of well and nearby surface irrigation water. The land is also the “first domino” parcel of agricultural lands located at the edge of the urban growth boundary with beautiful views of the North Shore.

The Trust for Public Land worked with numerous partners to raise the funding: the state legislature in appropriating a $13 million general obligation bond, the U.S. Army Garrison Hawai‘i in raising $4.5 million from the army buffer program, $4 million from the City and County of Honolulu Clean Water & Natural Lands program, $3 million from the Office of Hawaiian Affairs, and $500,000 from a private donor. The Johnson ‘Ohana Charitable Foundation gave $10,000 to support small farmers on the land.

CONCLUSION

IN LIGHT OF THE DEVELOPMENT pressures facing the island today, this Greenprint comes at an important turning point for the island. The people of O‘ahu have spoken, and this Greenprint express their collective desire to protect culturally, historically, or environmentally sensitive areas; increase awareness about resources in need of protection; and strengthen the special relationship residents have with these island landscapes.

APPENDIX A

LIST OF INTERVIEWS CONDUCTED IN OCTOBER AND NOVEMBER 2013

Andres Albano	Senior Vice President, CB Richard Ellis
David Arakawa	Executive Director, Land Use Research Foundation of Hawaii
Guy Archer	President, Hawaiian Trail and Mountain Club
George Atta	Director, City and County of Honolulu Department of Planning and Permitting
Kirk Caldwell	Mayor, City and County of Honolulu
Ted Clement	Executive Director, Hawaiian Islands Land Trust
Stuart Coleman	Surfrider Foundation, Hawai'i Coordinator
Kamana'opono Crabbe	Ka Pouhana/CEO, Office of Hawaiian Affairs
Kihei deSilva	Co-founder and Director, Hālau Mohala 'Ilima
Mapuana deSilva	Kumu Hula, Hālau Mohala 'Ilima
Mitch D'Olier	President and CEO, Harold K.L. Castle Foundation
Gary and Kukui Maunakea Forth	Managing Director and Executive Director, MA'O Organic Farms
Robert Harris	Executive Director, Sierra Club Hawai'i Chapter
Larry Jefts	Farmer, Sugarland Farms
Kevin Kinvig	Hawaiian Islands – Resource Conservationist, USDA-NRCS
Duane Kurisu	Partner, Kurisu & Fergus
Cameron Nekota	Vice President, D.R. Horton
Dean Okimoto	Farmer, Nalo Farms
Blake Oshiro	Deputy Chief of Staff, Office of Governor Neil Abercrombie
Dan Quinn	Director, State Parks, Hawai'i Department of Land and Natural Resources
Toni Robinson	Director, City and County of Honolulu Department of Parks and Recreation
Harry Saunders	President, Castle & Cooke Homes Hawai'i, Inc.
Jonathan Likeke Scheuer	Jonathan Likeke Scheuer Consulting
Jesse Souki	Director, State Office of Planning
Josh Stanbro	Program Director, Environment and Sustainability, Hawai'i Community Foundation
David Tanoue	Manager, Survey & Planning Departments, R. M. Towill Corporation

Finding Balance between Development and Conservation

The O‘ahu Greenprint

APPENDIX B

CURRENT CONDITIONS REPORT

TABLE OF CONTENTS

OVERVIEW

O‘ahu is a study in contrasts with a unique range of urban, rural, and natural landscapes, historical, and cultural resources. It is the third largest of the eight main Hawaiian Islands, with a total land area of approximately 600 square miles and nearly 230 miles of shoreline.[1] Nicknamed the “Gathering Place,” O‘ahu is the most populated and developed island in Hawai‘i. O‘ahu’s urban core, stretching along O‘ahu’s southern coast from Wai‘alae-Kāhala to Pearl City, is home to Hawai‘i’s financial center (downtown Honolulu), its most well-known visitor destination (Waikīkī), and its main commercial harbor and international airport.[2] Beyond the urban core, suburban neighborhoods and rural communities blend with broad expanses of agricultural areas and undeveloped landscapes. The island of O‘ahu was created by two large shield volcanoes, the younger Ko‘olau volcano to the east and the older Wai‘anae volcano to the west. Subsequent extensive erosion has since fashioned these volcanoes into long, narrow, ridge-like mountain ranges, connected by the Schofield Plateau. The highest point of the island is Mount Ka‘ala at just over 4,000 feet.[3] While O‘ahu has no active volcanoes, the island is dotted with extinct craters such as Diamond Head (Lē‘ahi), Koko Head (Kohelepelepe), and Punchbowl (Pūowaina). Honolulu, the capital and the economic center of Hawai‘i, is on the highly urbanized southern coast of O‘ahu.[4] Pearl Harbor (Pu‘uloa) is on the island’s southern coast.

The climate on O‘ahu is subtropical, with mild temperatures, moderate humidity, and prevailing northeasterly trade winds. Rainfall variation is extreme over short distances, ranging from 280 inches per year near the crest of the Ko‘olau Range to 20 inches per year in the rain-shadowed lowlands of western O‘ahu.[5] As a result, microenvironments range from rain forest to dry grassland with cactus and kiawe (similar to mesquite). Rainfall is seasonal: November through April is relatively wet, and May through October is drier. Storms can occur at any time of the year.[6]

The economy in Hawai‘i is currently expanding. The Hawai‘i Department of Business, Economic Development & Tourism (DBEDT) predicts that there will be an increase in jobs, visitor arrivals and expenditures, and Gross Domestic Product (GDP) through 2016.[7] Furthermore, the population in Hawai‘i is expected to increase 25 percent in the next 30 years from 1.36 million in 2010 to 1.70 million in 2040.[8] The population of Honolulu’s primary urban center is expected to grow from 419,000 in 2000 to 486,000 by 2025, an increase of 67,000 over 25 years.[9] Economic and population growth can mean increased pressure on existing infrastructure, natural, cultural, and marine resources, and water and land use. As the economy continues to grow, O‘ahu residents are committed to finding a balance between development and land conservation.

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[1] City and County of Honolulu, O‘ahu General Plan: Clean Copy (2012), p. 2, accessed September 5, 2013, the Honolulu Department of Planning and Permitting (DPP), http://dev.honoluludpp.org/Portals/0/pdfs/planning/generalplan/PubRevDraft_Part1_Nov2012.pdf.

[2] Ibid.

[3] *Columbia Encyclopedia*, 6th ed., “Oahu,” Columbia University Press, accessed September 5, 2013, http://www.questia.com/read/1E1-Oahu/Oahu.

[4] Ibid.

[5] Stephen Anthony, Charles Hunt, Jr., Anne Brasher, Lisa Miller, and Michael Tomlinson, *Water Quality on the Island of O‘ahu*, 1999–2000 (2004), p. 3, U.S. Geological Society, Circular 1239, accessed September 5, 2013 http://pubs.usgs.gov/circ/2004/1239/pdf/circular1239.pdf.

[6] Ibid.

[7] Hawai‘i Department of Business, Economic Development and Tourism (DBEDT), *Outlook for the Economy, 3rd Quarter 2013,* accessed September 6, 2013, http://dbedt.hawaii.gov/economic/qser/outlook-economy/.

[8] Hawai‘i DBEDT, *Population and Economic Projections for the State of Hawaii to 2040 (*2012), accessed September 6, 2013, http://files.hawaii.gov/dbedt/economic/data_reports/2040-long-range-forecast/2040-long-range-forecast.pdf.

[9] City and County of Honolulu, Primary Urban Center Development Plan (2004), p. 3-21, accessed June 25, 2014, Honolulu Department of Planning and Permitting (DPP), http://www.honoluludpp.org/Portals/0/pdfs/planning/PUC/PrimaryUrbanCenterDP.pdf.

LAND USE ON O‘AHU

Hawai‘i employs a dual system of state and county laws to regulate private land use. At the state level, all land in Hawai‘i is classified as follows: Conservation, Agricultural, Rural, and Urban. Changes to these classified boundaries can be made by ordinance of the County Council for areas of 15 acres or less; otherwise, the State Land Use Commission (LUC) must approve changes by a 6 to 3 vote. Only the LUC can take land out of the Conservation District.

One way that O‘ahu is planning for expected growth is through its development plan process. O‘ahu is divided into eight planning areas, and each area is required to have a Development Plan (DP) or Sustainable Communities Plan (SCP). These plans, together with the O‘ahu General Plan, guide O‘ahu’s population growth and land-use development looking forward for 20 years. Each of these plans reflects the nuanced goals and unique attributes related to growth and natural resources.

The eight geographic regions of the island are as follows: the Primary Urban Center, East Honolulu, Central O‘ahu, Ewa, Wai‘anae, North Shore, Ko‘olau Loa and Ko‘olau Poko.[10] Each land-use plan describes the community’s vision of the future and infrastructure policies and guidelines. The city’s land-use plans establish boundaries of urban growth and sustainable community boundaries that separate urban, agricultural, and conservation lands.[11] The City and County of Honolulu Land Use Ordinance and accompanying zoning maps implement the county’s plans and are the tools to regulate land use on O‘ahu. These ordinances are required to be consistent with, and carry out the purposes of, the General Plan, the development plans, and each other.

HISTORY

Evidence suggests that Polynesians settled in the Hawaiian Islands roughly 2,000 years ago from Tahiti and the Marquesas.[12] Over time, the Hawaiian inhabitants created a complex system of government with a ruling class called ali‘i. Hawaiians managed their resources and organized their society through a land division system of moku (large districts—six on O‘ahu), ahupua‘a (land divisions within a moku often with boundaries similar to those of watersheds), and ‘ili (land sections within an ahupua‘a). On O‘ahu under the rule of ali‘i nui (high chief) Mā‘ilikūkahi, ali‘i of corresponding rank oversaw the management of each moku, ahupua‘a, and ‘ili, and the maka‘āinana (commoners) cultivated the land; raised fish, dogs, pigs, and fowl; and took the produce as needed. Ahupua‘a typically ran from the mountain summits to the outer edge of the ocean reef “thus affording to the chief and his people a fishery residence at the warm seaside, together with the products of the high lands, such as fuel, canoe timber, mountain birds, and the right of way to the same, and all the varied products of the intermediate land as might be suitable to the soil and climate of the different altitudes from sea soil to mountainside or top.”[13] The ahupua‘a system recognizes the interconnected relationship between land-based and marine-based natural resources, focusing on streams as the connecting element between ridge and reef.

The ahupua‘a concept remains an important framework for managing the natural environment and

[10] Ko‘olau Poko Sustainable Communities Plan (2000), p.i, http://www.honoluludpp.org/Portals/0/pdfs/planning/Koolaupoko/KoolaupokoSCP.pdf.
[11] City and County of Honolulu Board of Water Supply, Ko‘olau loa Water Management Plan (2009), p. 30, accessed September 5, 2013, http://www.boardofwatersupply.com/cssweb/display.cfm?sid=1407.
[12] Phil Barnes, *A Concise History of the Hawaiian Islands* (2007), p. 11, Petroglyph Press, Hilo, HI.
[13] City and County of Honolulu, Department of Planning and Permitting, Koolaupoko Sustainable Communities Plan (2000), p. 2-3, accessed September 5, 2013, http://dev.honoluludpp.org/Portals/0/pdfs/planning/Koolaupoko/KoolaupokoSCP.pdf.

fostering community development, adapted to the context of today's community needs and technology.[14] For example, the Sustainable Communities Plan for Ko'olau Loa, created in 1999, includes principles for future land use and development such as "[r]ecognize traditional ahupua'a divisions and distinctions and incorporate the ahupua'a concept as the primary basis for land use planning in Ko'olau Loa."[15] Furthermore, it states that "[i]n keeping with the ahupua'a concept, and to support the anadromous fish life cycle, streams should be protected along their entire length from headwaters to the ocean."[16]

The Ahupua'a System

IN A TYPICAL INTACT AHUPUA'A, the hydrologic cycle begins at the upland forests that capture rain, which percolates into the aquifer and runs toward the ocean in streams that feed 'auwai (irrigation ditches), which run into māla (gardens) and lo'i kalo (wet taro farmlands) and out into fishponds and muliwai (brackish water estuaries). The kalo grown in this traditional watershed is a spiritual and ancestral base of Hawaiian culture. In the creation story of Pahahānaumoku (Earth Mother) and Wākea (Sky Father), Wākea and Ho'ohōkūkalani's first offspring was a premature unformed fetus that they named Hāloanakalaukapalili and buried. From the place where they buried him, the first kalo sprouted. Wākea and Ho'ohōkūkalani named their second offspring after his older sibling, Hāloa. According to tradition, all Hawaiians are descended from Hāloa and have a kuleana (responsibility) to honor and care for their elder siblings the kalo and the 'āina (land) that nourish them. Kalo establishes the familial connection in Hawaiian culture between people and the 'āina, and sets the foundation for the 'āina-based Hawaiian value system. The ahupua'a system demonstrates that Native Hawaiian cultural values are deeply rooted in the natural environment, and these values foster a reciprocal relationship with the land and the sea. This value-and need-based relationship acknowledges the mutual interaction between biological and cultural factors.

O'ahu was sighted by Captain James Cook and the HMS Resolution in January of 1778, and Europeans first visited the island in early 1779 when Captain Charles Clerke (Captain Cook's replacement) landed at Waimea Bay. In 1795, Kamehameha the Great, chief of the Big Island, brought Maui and O'ahu under his dominion, unifying three of the major Hawaiian Islands. King Kamehameha I moved his court from Hawai'i Island to Waikīkī in 1804.[17] The king died in 1819, and the following year Christian missionaries reached the archipelago from New England.[18]

With Kamehameha's death, his eldest son, Liholiho (Kamehameha II), became king. However, Kamehameha's favorite wife, Ka'ahumanu, wielded much power and influence during this time, and it was largely due to her influence that the traditional system of laws or rules, called kapu, came to an end.[19] Soon, the native subsistence economy changed to accommodate foreign needs, bringing grazing animals like cattle, goats, and sheep as well as invasive plant species to the island. The sandalwood and whaling trade severely impacted the environment in Hawai'i, drastically altering forests and reducing native species.[20] Private landownership began in 1845 under the reign of

[14] Ibid.
[15] Ko'olau Loa Sustainable Communities Plan (1999), p. 1-1, http://www.honoluludpp.org/Portals/0/pdfs/planning/Koolauloa/KoolauloaSCP.pdf.
[16] City and County of Honolulu, DPP, Ko'olau Loa Sustainable Communities Plan (1999), p. ES-7, accessed October 15, 2013, http://www.honoluludpp.org/Portals/0/pdfs/planning/Koolauloa/KoolauloaSCP.pdf.
[17] City and County of Honolulu, *This Is Your City and County of Honolulu Government*, accessed September 5, 2013, https://www1.honolulu.gov/cchnl.htm.
[18] Joseph Kenney, "Kahuna Chronicles: An Archaeologist Traces a Sacred Hawaiian Valley from Myth to Modern Times," Natural History (October 2005), accessed on September 5, 2013, http://www.waimeavalleycoalition.org/Kenney_Article.pdf.
[19] Phil Barnes, *A Concise History of the Hawaiian Islands* (2007), p. 31, Petroglyph Press, Hilo, HI.
[20] HawaiiHistory.org, *A Community Learning Center,* accessed September 5, 2013, http://www.Hawaiihistory.org/index.

Kamehameha III with the introduction of a land title and deeds system during the Mahele (land division). The Mahele was followed in 1850 by the Kuleana Act, which established fee simple ownership of land for commoners. Historical land tenants were required to document their claims to specific parcels in order to gain permanent title.[21]

Within 30 years, Westerners owned 80 percent of the private land in Hawai‘i, much of it falling into the hands of a few large landowners.[22] Sugarcane, while not a new crop to Hawai‘i, transformed the landscape of the islands after 1850.[23] Both sugar and pineapple, which began to be grown commercially in the late 1800s, are labor-intensive crops, and large landowners began to import a large and diverse labor force to the islands beginning in the mid-1800s, changing the demographics of the island. A contingent of Americans began pushing for annexation starting in the 1840s.[24] Over the next 50 years, foreign influence eroded the power of the monarchy, eventually resulting in the illegal overthrow of Queen Lili‘uokalani, in 1893. In 1898, President McKinley signed a resolution of annexation, and Hawai‘i became a territory of the United States.[25] Hawai‘i became the 50th state in 1959.[26]

POPULATION AND DEMOGRAPHICS

Estimates of the precontact population of Hawai‘i range between 300,000 and one million in 1778. However, contact with Europeans and foreign diseases caused the Native Hawaiian population to diminish to fewer than 40,000 by the end of the 19th century.[27] In 1831, the population of O‘ahu was recorded at 29,755. By 1950, that number had increased to 353,020.[28] Today, nearly one million residents call O‘ahu home, and the island’s population accounts for 70 percent of Hawai‘i’s total population. Between 2000 and 2010, the population of Hawai‘i increased by 12.3 percent, a rate 3 percent higher than that of the United States as a whole during this period.[29] The population of O‘ahu grew by approximately 1 percent annually between 2000 and 2012.

Table 1. Population Growth between 2000 and 2010

	2000	2010	Percent Change
Hawai‘i	1,211,537	1,360,301	12.28
City and County of Honolulu	876,156	953,207	8.79

Source: U.S. Census Bureau.

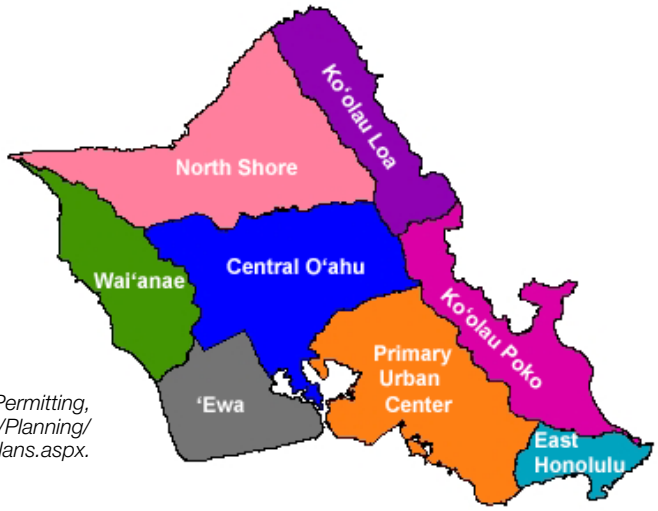
Approximately 75 percent of the resident population of O‘ahu lives on the “town,” or southern side of the island. The General Plan for the City and County of Honolulu directs growth to the Primary Urban Center, Central O‘ahu, and ‘Ewa regions of O‘ahu and limits growth in the urban fringe and

cfm?fuseaction=ig.page&PageID=358.
[21] Ibid.
[22] Phil Barnes, *A Concise History of the Hawaiian Islands* (2007), p. 38, Petroglyph Press, Hilo, HI.
[23] Ibid., p. 36.
[24] Ibid., p. 45.
[25] Ibid., p. 54. This Greenprint simply attempts to summarize past events and provide a general context. It does not take any position on the of said annexation or subsequent political events leading to Hawai‘i’s admission as a state.
[26] Ibid., p. 70.
[27] Kamehameha Schools Research and Evaluation Division, *Population Update 2010*, accessed September 18, 2013, http://www.ksbe.edu/spi/PDFS/Update%20Series/Population_Report_2010.pdf.
[28] DBEDT, *2012 State of Hawaii Data Book*, Section 1, Population, accessed September 5, 2013, http://dbedt.hawaii.gov/economic/databook/db2012/.
[29] U.S. Census Bureau, 2010 Census Briefs, “Population Distribution and Change 2000–2010,” accessed on September 5, 2013, http://www.census.gov/prod/cen2010/briefs/c2010br-01.pdf.

rural areas. For example, the General Plan specifies that agricultural lands along the Windward, North Shore, and Wai‘anae coasts are to be maintained for diversified agriculture. It designates the North Shore as a rural area where physical growth and development will be managed so that “an undesirable spreading of development is prevented” and “population densities are consistent with the character of development and environmental qualities desired for the area.”[30] Furthermore, the East Honolulu Sustainable Community Plan calls for no major developments in the planning area.[31] The Ko‘olau Loa Sustainable Community Plan projects a population increase of less than 1 percent over a 25-year period through 2020.[32] The Sustainable Communities Plans for these rural regions often mention the refrain “keep the country country.”[33, 34]

Conversely, the ‘Ewa Development Plan notes that O‘ahu will need over 88,000 new homes to meet expected population growth between 2005 and 2035 and that ‘Ewa will invariably lose some prime agricultural land in order to ensure that the rural areas are protected against development.[35] In addition, Central O‘ahu calls for 11,000 new housing units between 2000 and 2025. The Primary Urban Center Development Plan examined projected increases in office employment over a 25-year period and described a demand for an additional 1.2 million square feet of floor area principally in Kaka‘ako, Downtown, and other parts of central Honolulu.[36]

Figure 1. Planning Areas of O‘ahu



Source: Honolulu Department of Planning and Permitting, accessed July 1, 2014, http://honoluludpp.org/Planning/DevelopmentSustainableCommunitiesPlans.aspx.

[30] City and County of Honolulu, Department of Planning and Permitting, O‘ahu General Plan (1992, amended 2002), p. 12, accesed September 5, 2013, http://honoluludpp.org/Portals/0/pdfs/planning/generalplan/GPReport.pdf.
[31] City and County of Honolulu, Department of Planning and Permitting, East Honolulu Sustainable Communities Plan (1999), p. 2-12, accessed September 5, 2013. http://www.honoluludpp.org/Portals/0/pdfs/planning/EastHonolulu/EastHonoluluSCP.pdf.
[32] City and County of Honolulu, Department of Planning and Permitting, Ko‘olau Loa Sustainable Communities Plan (1999), p. 2-1, accessed October 15, 2013, http://www.honoluludpp.org/Portals/0/pdfs/planning/Koolauloa/KoolauloaSCP.pdf.
[33] City and County of Honolulu, Department of Planning and Permitting,Wai‘anae Sustainable Communities Plan (1999), p. 1-1, accessed September 5, 2013, http://www.honoluludpp.org/Portals/0/pdfs/planning/Waianae/WaianaeSCP.pdf.
[34] City and County of Honolulu, Department of Planning and Permitting, Ko’olau Loa Sustainable Communities Plan (1999), p. 2-1.
[35] City and County of Honolulu, Department of Planning and Permitting, ‘Ewa Development Plan (2013), p. ES-4, accessed October 15, 2013, http://www4.honolulu.gov/docushare/dsweb/Get/Document-130877/BILL065(12).htm.
[36] City and County of Honolulu, Department of Planning and Permitting, Primary Urban Center Development Plan (1999) p. 3-42, accessed October 15, 2013, http://www.honoluludpp.org/Planning/DevelopmentSustainableCommunitiesPlans/PrimaryUrbanCenter.aspx.

Table 2. O‘ahu Population by Development/Sustainable Communities Plan Area

Plan Area	Population (2000)	Population (2010)	Percent of Population (2010)	Percent Proposed Distribution of 2025 Islandwide Population
Primary Urban Center	419,422	418,664	45.9%	46%
‘Ewa	68,696	94,504	10.4%	13.0%
Central O‘ahu	148,208	158,965	17.4%	17.0%
East Honolulu	46,735	49,914	5.4%	5.3%
Ko‘olau Poko	117,910	114,209	12.5%	11.6%
Ko‘olau Loa	14,546	14,156	1.6%	1.4%
North Shore	18,380	17, 724	1.9%	1.7%
Wai‘anae	42,259	44,490	4.9%	4.0%

Sources: O‘ahu General Plan p.12 and U.S. Census Bureau Data.

O‘ahu is an ethnically diverse island. According to the 2010 census, the breakdown of race by percentage of the total population is as follows: 43.9 percent Asian, 20.8 percent white, 9.5 percent Native Hawaiian and Other Pacific Islander, and 2.0 percent black.[37] In 2010, the median age on O‘ahu was 37.8,[38] just slightly higher than the United States median of 37.2.[39] However, Honolulu’s median age dropped between 2010 and 2012 by 0.6 years, the largest decrease among the most populous U.S. counties.[40] The DBEDT attributes the decline to international migration.[41] The Census Bureau estimates the county’s net international migration was 7,670 from 2011 to 2012, while domestic migration declined by 3,471.[42] A high percentage of the new residents from abroad are younger, falling into the 20-to-34 age bracket, which increased by nearly 19,000 over the two-year period.[43]

GOVERNMENT

The City and County of Honolulu encompasses the entire island of O‘ahu. The county also includes hundreds of islets and reefs extending 2,000 miles from just beyond Ni‘ihau to Kure Atoll but excluding Midway Island.[44] None of these islands have permanent residents.[45] The county seat is located in Honolulu with county departments providing services throughout O‘ahu. The county is administered jointly by a mayor-council form of government with elected officials serving four-year terms. Elected in November 2012, Kirk Caldwell is the current mayor of the city and county.

Local participation in government is encouraged through the Neighborhood Board system, a

[37] U.S. Census Bureau, *Honolulu County Profile of General Population and Housing Characteristics: 2010*.
[38] Ibid.
[39] U.S. Census Bureau, 2010 Census Briefs, “Age and Sex Composition: 2010,” accessed September 5, 2013, http://www.census.gov/prod/cen2010/briefs/c2010br-03.pdf.
[40] Mike Macias, “What Aging Population? 5 Areas Getting Younger,” *Governing the States and Localities*, accessed on September 5, 2013, http://www.governing.com/blogs/by-the-numbers/gov-areas-becoming-younger-census-population-estimates.html.
[41] Ibid.
[42] Ibid.
[43] Ibid.
[44] City and County of Honolulu, *This Is Your City and County of Honolulu Government*, accessed September 5, 2013, http://www1.honolulu.gov/cchnl.htm#city.
[45] Ibid.

network of elected neighborhood boards created to facilitate communication and interaction between O'ahu communities and the city government.[46] Boards sponsor forums to hear from political candidates, businesses, organizations, and area residents regarding issues that affect their regions. They also make recommendations to city departments, the Honolulu City Council, the Hawai'i State Legislature, and federal agencies regarding land-use proposals, environmental concerns, and social issues.

ECONOMY

The island maintains a relatively diversified workforce. The UH Economic Research Organization (UHERO) reports that Hawai'i's tourism industry is the largest sector of Hawai'i's economy, providing 22 percent of its gross domestic product in 2010.[47] With the largest city and airport in the Hawaiian Islands, Honolulu is the gateway to the state's large tourism industry, which brings millions of visitors and contributes $10 billion annually to the local economy. According to the DBEDT, a record high number of visitors arrived in Hawai'i in 2012. There were 7,867,143 visitors to Hawai'i who spent at least one night there in 2012, a 10 percent increase from 2011.[48] The island of O'ahu accommodates more than 200,000 visitors daily, and Waikīkī attracts 72,000 visitors on any given day.[49] According to DBEDT, 23 percent of the workforce is in the service industry. Only 1.6 percent of the population is engaged in agriculture, forestry, mining, fishing, and hunting.[50] However, marine-related industries, including fishing, aquaculture, tourism, recreation, and shipping, provide approximately 15 percent of Hawai'i's workforce.[51]

The federal government is Hawai'i's second-largest industry. The federal defense industry spends nearly $14.7 billion annually and accounts for 16.5 percent of Hawai'i's total workforce. [52] Military expenditures translate to local spending by servicemen and women, goods and services provided by local vendors in procurement contracts, research grants, and construction projects undertaken by local contractors.

In 2000, almost 78 percent of O'ahu's total jobs were located in the Primary Urban Center (PUC) of Honolulu. The city's 2025 projections show that the number of jobs in the PUC development area will increase by 20 percent. However, jobs in other areas are predicted to increase by even greater numbers. For example, jobs in 'Ewa are projected to increase by over 200 percent. The PUC's share of O'ahu employment is set to decline to about 70 percent by 2025 while remaining the center of economic activity in the state.

Hawai'i's unemployment rate dropped to 4.4 percent during the first half of 2014 from 6.2 percent in 2012. This rate is lower than the national rate of 6.3 percent.[53] The civilian labor force added 10,600

[46] City and County of Honolulu, Neighborhood Commission Office, *O'ahu's Neighborhood Board System*, https://www1.honolulu.gov/nco/office.htm.
[47] Eugene Tian, James Mak and PingSun Leung, University of Hawaii Economic Research Organization (UHERO), The Direct and Indirect Contributions of Tourism to Regional GDP: Hawai'i, (2011) p.15, accessed on September 2, 2014, http://www.uhero.hawaii.edu/RePEc/hae/wpaper/WP_2011-5.pdf.
[48] DBEDT, press release, "State of Hawaii Data Book 2012 Now Available on the Internet" (August 15, 2013), accessed September 5, 2013, http://dbedt.hawaii.gov/blog/state-of-hawaii-data-book-2012-now-available-on-the-internet/.
[49] The Chamber of Commerce of Hawaii, "About Hawai'i 'the Aloha State,'" accessed September 5, 2013, http://cocHawaii.com/Hawaii-information.asp.
[50] DBEDT, *2012 Data Book,* Table 12.14., accessed September 2, 2014, http://files.hawaii.gov/dbedt/economic/databook/2012-individual/12/121412.pdf.
[51] State of Hawaii, Office of Planning, Hawai'i Ocean Resources Management Plan (2013), p. 2, accessed September 6, 2013, http://planning.hawaii.gov/czm/ocean-resources-management-plan-ormp/.
[52] Hawai'i Chamber of Commerce*, Impact of Military and Defense Activities*, accessed September 5, 2013, http://cochawaii.com/militarys-economic-impact.asp.
[53] U.S. Bureau of Labor Statistics, "Economy at a Glance," accessed July 2, 2014, http://www.bls.gov/eag/eag.us.htm.

jobs as compared to the same quarter in 2013, a 1.6 percent increase. The federal government lost 900 jobs; however, the state government added 4,150 jobs as compared to the same quarter in 2013.[54]

REAL ESTATE

Hawai'i has the highest median home value in the country, making home ownership very expensive. Hawai'i has a high proportion of married couples living with others and, at 54.4 percent, a low rate of home ownership relative to the United States average of 63.9 percent.[55] According to a one-year American Community Survey (ACS) for 2012, there were 308,072 households on O'ahu with an average household size of 3.05 people.[56] The rate of housing units in multiunit structures, such as apartments, is more than 40 percent in Hawai'i while the national rate is just 25.9 percent.[57] The U.S. Department of Housing and Urban Development reports that the median cost of renting a two-bedroom apartment in Hawai'i is $1,671 a month, 71 percent more than the national average of $977.[58]

Between 1985 and 2011, the median price of a single-family home on O'ahu increased by 262.5 percent. According to the Honolulu Board of Realtors, the median single-family home sold for $575,000 in 2011.[59] In 2011, the median price of a condo was $300,000.[60] The median price of both a single-family home and a condo decreased slightly in 2011 from the previous year.[61] In July 2013, the median single-family home sold for $647,500 while the median price of a condo was $345,500.[62] On O'ahu, the largest landowners include the state government (including the State Department of Hawaiian Home Lands), the county, Kamehameha Schools, and Castle & Cooke.[63] Kamehameha Schools maintains strategic plans for managing its cultural, natural, and agricultural resources through its Land Assets Division.[64] In 2005, the Hawai'i legislature passed the Legacy Land Act and created a dedicated funding source for the newly named Legacy Land Conservation Fund (LLCF), allocating 10 percent of all state conveyance taxes (taxes imposed on the transfer of all commercial and residential real estate) to land conservation projects in Hawai'i.[65] In 2006, O'ahu voters passed a charter amendment setting aside 0.5 percent (half a percent) of county real property taxes for land conservation on O'ahu.

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[54] DBEDT, Labor Force & Jobs, 2nd Quarter 2014, accessed July 2, 2014, http://dbedt.hawaii.gov/economic/qser/labor-force/.
[55] U.S. Census Bureau, 2012 ACS 1-year estimates, *Selected Housing Characteristics in the United States,* accessed September 19, 2013, http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_1YR_DP04&prodType=table.
[56] U.S. Census Bureau, 2012 ACS 1-year estimates, *Selected Social Characteristics in the United States,* accessed September 19, 2013, http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_12_1YR_DP02&prodType=table.
[57] D. McIntyre, M. Sauter, C. Stockdale, "States with the highest (and lowest) homeownership" (October 12, 2011),Nbcnews.com, accessed September 5, 2013, http://www.nbcnews.com/id/44822131/ns/business-real_estate/t/states-highest-lowest-homeownership/.
[58] Kery Murakami, "Living Hawaii: Why Is the Price of Paradise So High?" *Civil Beat* (September 4, 2013), accessed September 5, 2013, http://www.civilbeat.com/articles/2013/09/04/19815-living-hawaii-why-is-the-price-of-paradise-so-high.
[59] Honolulu Board of Realtors, Oahu Historical Sales Data, accessed on September 5, 2013, http://www.hicentral.com/property-information/oahu-historical-sales-data.html.
[60] Ibid.
[61] Ibid.
[62] Honolulu Board of Realtors, *Honolulu Home and Condominium Sales Continue to Rise in July, According to Honolulu Board of Realtors* (August 7, 2013), accessed September 5, 2013, http://www.hicentral.com/property-information/market-press-releases/572-july.html.
[63] DBEDT, *2012 Data book,* Section 6, accessed September 2, 2014, http://dbedt.Hawai'i.gov/economic/databook/db2012/.
[64] Overviews of the Kamehameha Schools plans can be found at http://www.ksbe.edu/land/.
[65] State of Hawaii, Department of Land and Natural Resources, *Report to the Twenty-Seventh Legislature*, Regular Session of 2013, accessed December 23, 2013, http://files.hawaii.gov/dlnr/reports-to-the-legislature/2013/FW13-Legacy-Land-Report-FY12.pdf.

LAND USE AND NATURAL RESOURCES

O‘ahu is the third-largest, third-oldest, and most densely populated of the main eight Hawaiian Islands.[66] A coastal plain surrounds much of O‘ahu, while the lofty remnants of two ancient volcanic mountain ranges, the Wai‘anae in the west and the Ko‘olau in the east, straddle the coasts.[67] Although a fertile saddle lies between the ranges, roughly 45 percent of O‘ahu’s land area has a slope of 20 percent or greater. [68] Mild temperatures characterize the island’s subtropical climate. Rainfall varies across the island with the windward side generally home to moist catchments and leeward to dry rain shadows.

The State of Hawai‘i zoning classification for land use on O‘ahu in 1999 was about 40 percent conservation, 34 percent agriculture, and 26 percent urban.[69] In 1998, 98,663 acres (25.7 percent) were classified as developed.[70] Before 1950, urban and industrial development concentrated in Honolulu and Wahiawā, on the coastal plain near Pearl Harbor and at several military bases. O‘ahu is home to some of the world’s most endangered tropical dryland forests—the island contains less than 0.2 percent native dry forest (1.7 km^2) with less than 30 percent protected in reserves (0.5 km^2).[71] Forty-five percent of the 68 native tree and shrub species identified in the dry forest region are threatened. Land development, fire, grazing, and nonnative plant species invasion threaten to continue the degradation and fragmentation of Hawai‘i’s dryland forests.

Hawai‘i boasts 1,052 miles of coastline, and thus a healthy ocean environment is essential to the quality of life in Hawai‘i.[72] It was recently estimated that Hawai‘i’s coral reefs provided direct economic benefits of $360 million per year, when considering recreational, amenity, fishery, and biodiversity values.[73]

AGRICULTURE

At the turn of the 20th century, much of Hawai‘i’s agricultural lands were used for sugarcane and pineapple production. Sugar requires significant water, and millions of gallons of stream water were diverted daily for irrigation, leading to community controversies over water rights and ongoing legal battles. More recently, sugarcane and pineapple plantations in Central O‘ahu have been converted to diversified-crop agriculture and suburban use (in the south).[74] Nevertheless, the Central O‘ahu Sustainable Communities Plan envisions protecting and promoting diversified agriculture to encourage the continuation of a viable pineapple industry.[75] Today, O‘ahu has about 122,927 acres in the State Agricultural District (32 percent of the island).[76] However, approximately 85 to 90 percent of Hawai‘i’s food is imported.[77] Since the 1970s, Hawai‘i has become less self-sufficient in eggs, milk, livestock, hogs, and pigs but remains self-sufficient in some vegetable and fruit

[66] Frederick L. Klasner and Clinton D. Mikami, *Land Use on the Island of O‘ahu, Hawai‘i, 1998* (2003), p. 2-4, U.S. Geological Society, Water-Resources Investigations Report 02-4301.
[67] Ibid.
[68] Ibid.
[69] Ibid., p. 4.
[70] Ibid., p. 1.
[71] Stepanie Pau, *Tropical Dry Forests of the Pacific: Hawai‘i,* accessed September 5, 2013, http://www.geog.ucla.edu/tdfpacific/hawaii.html.
[72] State of Hawai‘i, Office of Planning, *Hawai‘i Ocean Resources Management Plan (*2013), p. 2.
[73] Ibid.
[74] Ibid.
[75] City and County of Honolulu, Department of Planning and Permitting, Central O‘ahu Sustainable Communities Plan, p. 1-2, accessed September 5, 2013, http://www.honoluludpp.org/Portals/0/pdfs/planning/CentralOahu/CentralOahuSCP.pdf.
[76] City and County of Honolulu, Department of Planning and Permitting, *O‘ahu Agriculture: Situation, Outlook and Issues* (2011), accessed December 23, 2013, http://www.honoluludpp.org/Portals/0/pdfs/planning/generalplan/GPUpdate/TrendReports/Agriculture.pdf.
[77] Hawai‘i Department of Business, Economic Development & Tourism, in cooperation with the Department of Agriculture, *Increased Food Security and Food Self-Sufficiency Strategy* (2012), p. ii.

crops.[78] Enacted as Article XI, Section 3, of the Constitution of the State of Hawai'i in 1978, the State is required to conserve and protect agricultural lands, promote diversified agriculture, increase agricultural self-sufficiency, and assure the availability of agriculturally suitable lands.[79] The City and County of Honolulu is currently working to identify and map potential Important Agricultural Lands (IAL) within its jurisdiction in consultation and cooperation with landowners, Hawai'i Department of Agriculture, agricultural-interest groups, and the United States Department of Agriculture in order to protect certain land from being converted to other land use designations.

Amid controversy, companies in Hawai'i are increasingly cultivating GMO crops.[80] The dispute over the use of GMO crops is unsettled, and bills to ban GMOs on the Big Island and Kaua'i have been approved by their respective county councils.[81,82] In December 2013, Hawai'i island mayor Bill Kenoi signed into law a measure that prohibits biotech companies from growing any new genetically modified crops on the island.[83]

ENERGY

Renewable energy is becoming an increasingly important land use on O'ahu. Currently, about 5 percent of Hawai'i's total energy is from renewable sources. In 2008, 78 percent of the remaining fossil fuel sources were imported from foreign countries and 22 percent from domestic sources.[84] Hawai'i intends to generate 20 percent of electricity from renewable resources by the end of 2020.[85]

WATER

Public water supplies in O'ahu are provided entirely by groundwater, whereas streams provide irrigation water and aquatic habitat.[86] Municipal groundwater use constitutes 80.5 percent of the total water use on the island while military use is 14.2 percent, and agriculture, irrigation, and other uses take up the remainder.[87] On O'ahu, the Board of Water Supply (BWS) provides municipal water. [88] Based on population estimates, BWS forecasts a 33 percent increase in municipal potable water demand for O'ahu averaging from 154.7 million gallons per day (mgd) in 2000 to 206 mgd in 2030.[89] Most of this increase is predicted to occur in 'Ewa, PUC, Central O'ahu, Wai'anae, and East Honolulu. Water conservation reduced the per capita demand by 6 percent in 2000 from 1990 levels.[90] Per capita demand ranges from a low of 142 gallons per capita per day (gpcd) in Ko'olauloa

[78] Ibid., p. 3.
[79] State of Hawai'i, Office of Agriculture, accessed December 23, 2013, http://hdoa.hawaii.gov/chairpersons-office/new-agriculture-initiatives/important-ag-lands-ial/.
[80] Adam Skolnick, "GMOs Are Tearing a Tropical Paradise Apart," Salon.com (September 4, 2013), accessed September 5, 2013, http://www.salon.com/2013/09/04/a_battle_in_paradise_how_gmos_are_tearing_a_tropical_utopia_apart/.
[81] Sophie Cocke, "Apocalyptic Talk Takes over Hawaii GMO Debate," *Huffington Post* (September 5, 2013), accessed September 5, 2013, http://www.huffingtonpost.com/2013/09/05/hawaii-gmo-debate_n_3875044.html.
[82] Gabriela Aoun, "Kauai GMO Bill Vetoed by Mayor" *Huffington Post* (October 31, 2013), accessed November 12, 2013, http://www.huffingtonpost.com/2013/10/31/kauai-gmo-bill-vetoed_n_4185120.html.
[83] Christopher D'Angelo, "Hawaiian Islands Take More Steps to Limit Spread of GMO Crops," *Reuters* (December 6, 2013), accessed December 23, 2013, http://www.reuters.com/article/2013/12/07/usa-gmos-hawaii-idUSL2N0JL1RL20131207.
[84] State of Hawai'i, Hawai'i 2050 Sustainability Plan (2008), p. 65.
[85] Ibid.
[86] Stephen Anthony, Charles Hunt, Jr., Ann Brasher, Lisa Miller, and Michael Tomlinson, *Water Quality on the Island of O'ahu,1999–2000* (2004), p. 2, U.S. Geological Society, Circular 1239, accessed September 19, 2013, http://pubs.usgs.gov/circ/2004/1239/pdf/circular1239.pdf.
[87] City and County of Honolulu, Board of Water Supply (BWS), Koo Lau Loa Watershed Management Plan, p. 33, accessed September 19, 2013, http://www.boardofwatersupply.com/cssweb/display.cfm?sid=1407.
[88] City and County of Honolulu, Board of Water Supply, About Us, accessed September 5, 2013, http://www.hbws.org/cssweb/display.cfm?sid=1065. The BWS is a semiautonomous agency governed by a seven-member board of directors. Five are appointed by the mayor and approved by the City Council, and two are the director of the State Department of Transportation and the chief engineer of the City Department of Facility Maintenance.
[89] City and County of Honolulu, O'ahu Water Management Plan Overview (2012), p. 1-1, accessed September 5, 2013, http://www.boardofwatersupply.com/files/01_KPWMP%20Ch%201_OWMP%20Update_FINAL_2012.pdf.
[90] City and County of Honolulu, Board of Water Supply, Ko'olau Poko Watershed Management Plan (2012), p. 1-19, accessed September 5, 2013, http://www.boardofwatersupply.com/files/01_KPWMP%20Ch%201_OWMP%20Update_FINAL_2012.pdf.

to 224 gpcd in Waiʻanae due to a drier climate and larger agriculture water use from the municipal system. Overall, while there is enough water on Oʻahu to meet existing and predicted demand in the region, water conservation, protection of water sources and watersheds, and adaptation to climate change will be key to long-term sustainability. [91]

ENDANGERED SPECIES

The Hawaiian Islands hold more than 30 percent of the nation's threatened and endangered species.[92] On Oʻahu, there are 51 listed endangered species, as designated under the U.S. Endangered Species Act, 4 threatened, and 1 proposed for listing as endangered. In addition to their intrinsic value, native wildlife and their habitats contribute millions of dollars in goods and services to the residents of Hawaiʻi. A University of Hawaiʻi study of the valuation of ecosystem services estimated the economic value of the Koʻolau Mountains to be between $7.4 and $14 billion.[93]

Table 4. Examples of Threatened and Endangered Species

	Common Name	Hawaiian Name	Federal Status
Mammals	Hawaiian hoary bat	*ʻōpeʻapeʻa*	Endangered
	Hawaiian monk seal	*ʻīlioholoikauaua*	Endangered
Birds	Hawaiian duck	*Koloa maoli*	Endangered
	Newell's shearwater	*ʻAʻo*	Threatened
	Black-necked stilt	*Aeʻo*	Endangered
Reptiles	Green sea turtle	*Honu*	Threatened

Some of the greatest threats to native wildlife and habitats include insufficient acreage of wetland habitat for waterbirds; wildfire; recreational use of offshore islets; feral pig disturbance of forested habitat and rare plants; predation by introduced animals; stream diversions, dams, or channelizations; pollution; and introduction of invasive species.[94]

RECREATION

The island of Oʻahu has a complex and varied network of county, state, and federal parks and open space. These parks include community parks, nature preserves, golf courses, campgrounds, and beach parks. More than 100 world-renowned beaches ring Honolulu.[95] The Koʻolau Mountain Range provides a wealth of hiking, hunting, and camping opportunities.[96]

From 2003 to 2005, half of adults in Hawaiʻi did not meet the recommendations for daily physical activity.[97] However, counties with greater recreation opportunities had higher rates of physical activity, lower health care expenditures, and lower obesity rates.[98] Unfortunately, older and more intensely

[91] *Koʻolau Poko Watershed Management Plan*, 1-40, accessed September 2, 2014, http://www.boardofwatersupply.com/cssweb/display.cfm?sid=2124.
[92] C. Mitchell, C. Ogura, D. W. Meadows, A. Kane, L. Strommer, S. Fretz, D. Leonard, and A. McClung, *Hawaii's Comprehensive Wildlife Conservation Strategy*, (October 2005), p. 3-13, State of Hawaiʻi Department of Land and Natural Resources, accessed September 5, 2013, http://www.state.hi.us/dlnr/dofaw/cwcs/files/NAAT%20final%20CWCS/Chapters/CHAPTER%206%20oahu%20NAAT%20final%20!.pdf.
[93] Ibid., p. 1-4.
[94] Ibid., chapter 6, "Oʻahu."
[95] Chamber of Commerce of Hawaii, "About Hawaiʻi 'the Aloha State,'" accessed September 5, 2013, http://cocHawaii.com/Hawaii-information.asp.
[96] City and County of Honolulu, Department of Planning and Permitting, East Honolulu Development Plan (1999), p. 2-12, accessed September 5, 2013, http://www.honoluludpp.org/Portals/0/pdfs/planning/EastHonolulu/EastHonoluluSCP.pdf.
[97] Ibid.
[98] Hawaiʻi Department of Land and Natural Resources, State Comprehensive Outdoor Recreation Plan (SCORP) 2008.

developed parts of the Primary Urban Center lack sufficient parks, recreation facilities, and open space, reducing recreation opportunities for their residents. Particularly impacted are Makiki, Nu'uanu, Downtown, Liliha, and Kalihi-Pālama.[99] In 2005, only 29 percent of middle school students and 30 percent of high school students in Hawai'i met the daily recommendations for daily physical activity.[100]

EXISTING PARKS AND TRAILS

The City and County of Honolulu manages 288 named parks on approximately 5,147 acres of land.[101] The Department of Land and Natural Resources (DLNR) manages nearly 1.3 million acres of state lands, beaches, and coastal waters as well as 750 miles of coastline.[102] The department's jurisdiction includes state parks; historical sites; forests and forest reserves; aquatic life and its sanctuaries; public fishing areas; boating, ocean recreation, and coastal programs; wildlife and its sanctuaries; game management areas; public hunting areas; and natural area reserves.[103] Honolulu has a vibrant bike culture and currently ranks 14th among the country's largest cities for bicycle commuting.[104] O'ahu has 129 bicycle facilities, covering 132 miles including 46 miles of paths, 51 miles of lanes, and 36 miles of routes. The PUC hosts the highest number of existing bikeway miles (at 37.7).[105] Proposed for O'ahu are 559 miles of new bikeways.[106]

Hawai'i's state park system is composed of 53 state parks encompassing approximately 25,000 acres on the five major islands. These parks offer varied outdoor recreation and heritage opportunities. The park environments range from landscaped grounds with developed facilities to wildland areas with trails and primitive facilities. There are 20 state parks, recreation areas, monuments, waysides, and state-recognized historic areas on O'ahu.

State Parks on O'ahu

Ahupua'a 'O Kahana State Park
'Aiea Bay State Recreation Area
Diamond Head State Monument
He'eia State Park
'Iolani Palace State Monument
Ka'ena Point State Park (Keawa'ula)
Ka'ena Point State Park (Mokulē'ia)
Ka Iwi State Scenic Shoreline (Makapu'u Lookout)
Keaīwa Heiau State Recreation Area
Kūkaniloko Birthstones State Historic Site
Lā'ie Point State Wayside
Mālaekahana State Recreation Area
Nu'uanu Pali State Wayside
Pu'u O Mahuka Heiau State Historic Site
Pu'u 'Ualaka'a State Wayside
Royal Mausoleum State Monument

Update, (2009), p. 9, accessed September 2, 2014, http://state.hi.us/dlnr/reports/scorp/SCORP08-1.pdf.
[99] City and County of Honolulu, Department of Planning and Permitting, Primary Urban Center Development Plan (2004), p. 3-21, accessed September 5, 2013, http://www.honoluludpp.org/Portals/0/pdfs/planning/PUC/PrimaryUrbanCenterDP.pdf.
[100] Hawai'i Department of Land and Natural Resources, State Comprehensive Outdoor Recreation Plan (SCORP), p. 9 (2009).
[101] City and County of Honolulu, Department of Parks and Recreation, *About Us*, accessed September 5, 2013, http://www1.honolulu.gov/parks/aboutus.htm.
[102] Hawai'i Department of Land and Natural Resources, *About Us*, accessed September 5, 2013 from http://dlnr.hawaii.gov/about-dlnr/.
[103] Ibid.
[104] City and County of Honolulu, Department of Transportation Services, O'ahu Bike Plan, p. ES-1, accessed December 23, 2013, http://www1.honolulu.gov/dts/oahubikeplanaugust2012.pdf.
[105] Ibid.
[106] Ibid., p. 5-4.

Sand Island State Recreation Area
Ulupō Heiau State Historic Site
Wa‘ahila Ridge State Recreation Area
Wahiawā Freshwater State Recreation Area

The DLNR manages forest reserves and natural areas within the State Land Use Conservation District. The department’s jurisdiction encompasses Natural Area Reserves that protect and preserve representative examples of the island’s unique native ecosystems.[107] The DLNR’s Division of Forestry and Wildlife manages the Forest Reserve System to protect mountainous areas that contain watersheds and serve as wildlife refuges and recreational areas.[108]

Forest Reserve System
‘Ewa Forest Reserve
Hau‘ula Forest Reserve
Honolulu Forest Reserve
Kaipapa‘u Forest Reserve
Kāne‘ohe Forest Reserve
Kuaokalā Forest Reserve
Kuli‘ou‘ou Forest Reserve
Makua Forest Reserve
Mokulē‘ia Forest Reserve
Nānakuli Forest Reserve
Pūpūkea-Paumalū Forest Reserve
Round Top Forest Reserve
Waiāhole Forest Reserve
Wai‘anae Kai Forest Reserve

Natural Area Reserve
Pāhole Natural Area Reserve
Mount Ka‘ala Natural Area Reserve
Ka‘ena Natural Area Reserve

State Na Ala Hele Trail System
Na Ala Hele is the State of Hawai‘i Trail and Access Program, established in 1988 in response to public concern about the loss of trail access and the threat to historic trails from development.[109] The program engages in trail management and regulatory issues due to recreational activities and emerging legal issues.

[107] North Shore Sustainable Communities Plan (2011), pp. 3-7, 3-8, accessed September 2, 2014, http://www.honoluludpp.org/Planning/DevelopmentSustainableCommunitiesPlans/NorthShorePlan.aspx.
[108] Department of Land and Natural Resources, Division of Forestry and Wildlife, State of Hawai‘i Forest Reserve System, *About FRS*, accessed September 5, 2013, http://www.state.hi.us/dlnr/dofaw/frs/page1.htm.
[109] Department of Land and Natural Resources, Division of Forestry and Wildlife, *Na Hala Hele, Trail & Access System*, accessed September 5, 2013, http://Hawai‘itrails.eHawai‘i.gov/info.php.

RELEVANT PLANNING DOCUMENTS

Development and Sustainable Community Plans

- Central O‘ahu Sustainable Communities Plan (2002)
- East Honolulu Sustainable Communities Plan (1999)
- ‘Ewa Development Plan (2013)
- Ko’olau Loa Sustainable Communities Plan (1999)
- Ko‘olau Poko Sustainable Communities Plan (2000)
- North Shore Sustainable Communities Plan (2011)
- Primary Urban Center Development Plan (2004)
- Wai‘anae Sustainable Communities Plan (2010)

Watershed Management Plans

- City and County of Honolulu, Board of Water Supply, O‘ahu Water Management Plan (2012)
- City and County of Honolulu Board of Water Supply, Ko‘olau Loa Watershed Management Plan (2009)
- City and County of Honolulu, Board of Water Supply, Board of Water Supply, Ko‘olau Poko Watershed Management Plan (2012)

Other Plans and Reports

- City and County of Honolulu, Department of Planning and Permitting, O‘ahu General Plan (1992 and Draft Revision 2012)
- C. Mitchell, C. Ogura, D. W. Meadows, A. Kane, L. Strommer, S. Fretz, D. Leonard, and A. McClung, Hawai‘i’s Comprehensive Wildlife Conservation Strategy (2005), State of Hawai‘i Department of Land and Natural Resources
- State of Hawai‘i, Office of Planning, Hawai‘i Ocean Resources Management Plan (2013)
- State of Hawai‘i, Office of Planning, Low Impact Development: A Practitioner’s Guide (2006)
- Frederick L. Klasner and Clinton D. Mikami, Land Use on the Island of O‘ahu, Hawai‘i (1998)
- Kamehameha Schools Research and Evaluation Division, Population Update 2010
- Stepanie Pau, Tropical Dry Forests of the Pacific: Hawai‘i, accessed September 5, 2013, http://www.geog.ucla.edu/tdfpacific/hawaii.html
- Stephen Anthony, Charles Hunt, Jr., Anne Brasher, Lisa Miller, and Michael Tomlinson, Water Quality on the Island of O‘ahu, 1999–2000 (U.S. Geological Society, 2004), Circular 1239
- Department of Land and Natural Resources, The Rain Follows the Forest: A Plan to Replenish Hawai‘i’s Source of Water (2011)
- Department of Hawaiian Home Lands, O‘ahu Island Plan (Draft, 2013)
- City and County of Honolulu, Department of Transportation Services, O‘ahu Bike Plan: A Bicycle Master Plan (2012)
- Hawai‘i Department of Business, Economic Development & Tourism, in cooperation with the Department of Agriculture, Increased Food Security and Food Self-Sufficiency Strategy (2012)
- Kamehameha Schools, Strategic Agricultural, Cultural Resources Management, Natural Resource Management Plans, overviews available online
- Hawai‘i 2050 Sustainability Task Force, Hawai‘i 2050 Sustainability Plan (2008)

Finding Balance between Development and Conservation

The O‘ahu Greenprint

APPENDIX C

COMMUNITY OUTREACH SUMMARY REPORT

PREPARED FOR:
TRUST FOR PUBLIC LAND
OFFICE OF HAWAIIAN AFFAIRS

PREPARED BY:
TOWNSCAPE, INC.

OCTOBER 2013
(REVISED MARCH 4, 2014)

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INTRODUCTION

The Trust for Public Land (TPL) and the Office of Hawaiian Affairs (OHA) are engaging in an O‘ahu Greenprint, a strategic plan that identifies community priorities for protecting Hawai‘i’s landscapes. In order to understand the community’s conservation priorities, TPL and OHA hosted a booth at several community events in a “SpeakOut” style format, where information on conservation and greenprinting was shared with event participants and feedback was solicited on specific questions through several methods. Informative materials and interactive formats were designed jointly by TPL, OHA, and their consultant, Townscape, Inc.

The O‘ahu Greenprint team attended twelve events from May through December 2013. These events were selected, in part, based on their location in most of the City’s eight planning districts (Central O‘ahu, East Honolulu, ‘Ewa, Ko‘olaupoko, North Shore, Primary Urban Center [PUC], and Wai‘anae) to get representation from the entire island. The North Shore planning district was excluded because a Greenprint was already completed for that area and no event was attended in Ko‘olauloa because no appropriate event was identified within the outreach period.

The Greenprint team selected those events that were expected to draw a large crowd. Where there were no large events in a particular district during the time frame allotted for community outreach, smaller events were substituted (e.g., Wai‘anae Farmers Market). Please see Table 1 for a listing of all of the Community Outreach Events attended.

Participants were asked several questions to gain an understanding of the types of land that were the most important to them to protect. These questions included the following:

- What do you value most about O‘ahu? What are your top three most important types of land to preserve for existing and future generations?
- Are there places that should remain as they are but are currently at risk of changing (i.e., threatened)? If so, where are they?
- Why/how are they being threatened?
- What do you want O‘ahu to look like in 25 years?

Feedback was collected through four methods:

- Survey questionnaires (hard copy and on-line);
- Mapping of participants’ most important place to protect;
- “Dot voting” for their top three most important conservation values; and
- Drawing pictures of favorite outdoor activities.

Many participants completed the three activities geared for the adults: dot vote, mapping, and questionnaire, but many only completed one or two activities. The questionnaire and mapping were offered as activities at all of the events but the dot vote was only offered when space was available. Children primarily participated in the drawing exercise but a few also participated in the dot vote or questionnaire as well. On-line participants only had access to the questionnaire.

Table 1 Community Outreach Events

	Event	City Development Plan Area	Date(s)	Number of Questionnaires Completed
1	*Hawai‘i Book and Music Festival	Primary Urban Center (PUC)	May 18-19, 2013	223
2	Maunalua Bay Independence Day Festival	East Honolulu	Jul 4, 2013	23
3	*Hawai‘i Conservation Conference	PUC	Jul 9-12, 2013	117
4	*†Prince Lot Hula Festival	PUC	Jul 20, 2013	47
5	*O‘ahu Greenprint Island Leadership Team Meeting	PUC	Jul 30, 2013	18
6	Wahiawā Pineapple Festival	Central O‘ahu	Aug 17, 2013	58
7	*†Council on Native Hawaiian Advancement Conference	PUC	Sep 3-5, 2013	6
8	Wai‘anae Farmers Market	Wai‘anae	Sep 7, 2013	12
9	Windward Ho‘olaule‘a	Ko‘olaupoko	Sep 28, 2013	111
10	†PA‘I Kaka‘ako Art and Music Festival	PUC	Nov 9, 2013	63
11	†Makahiki Maoli Festival	PUC	Nov 16, 2013	31
12	†Hali‘i Kalikimaka	Ko‘olaupoko	Dec 20, 2013	75
	TOTAL			**910**

*Some events, although held in the PUC, were selected to draw attendance from across O‘ahu. In some cases, those events attracted participants from off-island, out-of-state, and even foreign countries.
†Some events were specifically selected because they were expected to draw a large number of attendees of Hawaiian ancestry.

Feedback provided in the questionnaires were recorded verbatim in a spreadsheet and all questionnaires were numbered for future reference. A total of 910 questionnaires were completed, 784 at the SpeakOuts and 126 on-line. It was estimated that about 65% of people who visited the SpeakOut booths filled out a questionnaire. Therefore, the project team estimates that about 1,200 people visited the booths and participated in one or more of the activities or simply found out more about the O‘ahu Greenprint. Adding in those who participated on-line, the O‘ahu Greenprint team reached more than 1,300 people through this public engagement effort.

CONSERVATION VALUES

The survey questionnaire asked participants to rank their most important conservation values by assigning them a 1, 2, or 3, with a "1" being the most important value. Methodology #1: Each response was assigned points in reverse order. In other words, if a participant assigned a conservation value as "1," meaning that it was the most important, then that value was given a "3" in the spreadsheet. The number of points for each value was then added together. Some participants indicated their top three conservation values with an "X" instead of ranking them with a 1, 2, or a 3. Conservation values marked with an "X" were not included in the scoring for this methodology. The value with the most points was considered the most important by the community in general.

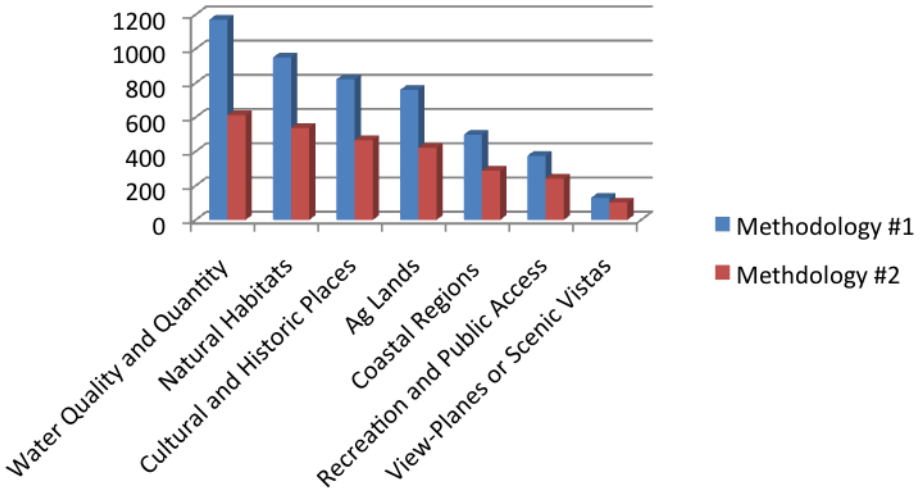
Methodology #2: About 12% of completed surveys (105 surveys) identified the top three conservation values with an "X" and did not rank them with a "1," "2," or "3.". In order to count those "votes" in the overall rankings, a second analysis of the responses was done where all votes were counted as a "1" regardless of the rank or "X" a participant may have assigned it. The conservation values that had the most "mentions" were then considered the most important to the community as a whole.

Table 2 Conservation Values Rankings (Questionnaire)

Conservation Value	Methodology #1		Methodology #2	
	Number of Points	Rank	Number of Points	Rank
Water quality and quantity	1,170	1	612	1
Natural habitats	949	2	538	2
Cultural and historic places	822	3	466	3
Agricultural lands	760	4	422	4
Coastal regions	498	5	288	5
Recreation and public access	375	6	242	6
Viewplanes or viewsheds	129	7	102	7

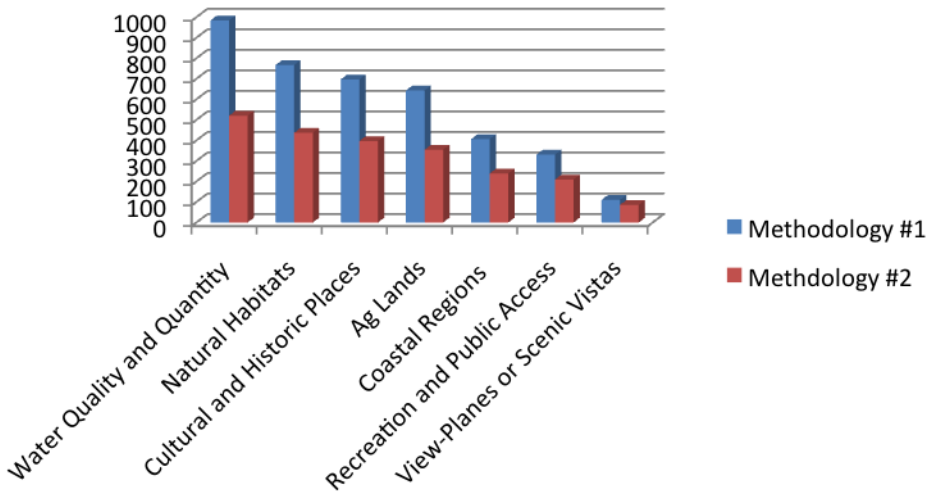
When comparing the two methodologies for analyzing the questionnaire results, the ranking of conservation values did not change. Water quality and quantity, natural habitats, agricultural lands, and cultural and historic places were always the top four values, in that order.

Figure 1 Conservation Values Rankings (Questionnaire)



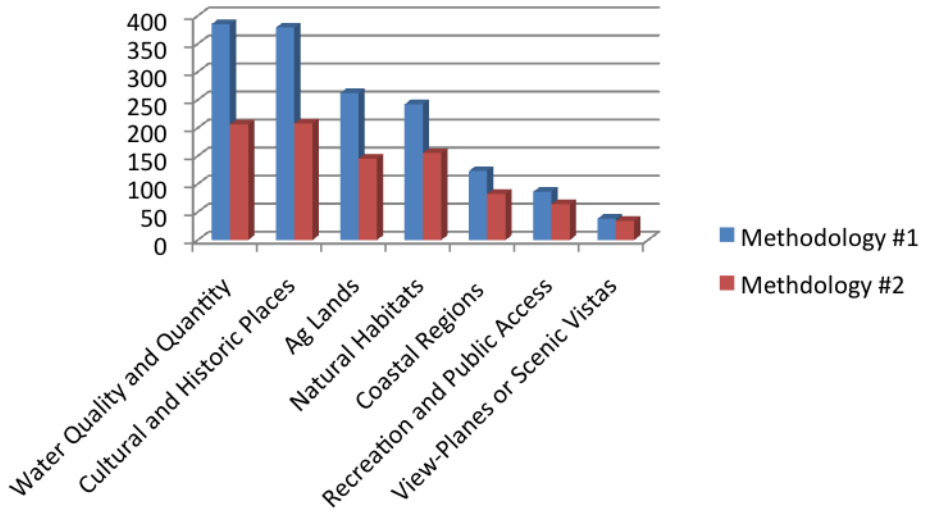
The rankings presented above reflect the results from all of the questionnaires received. It is interesting to note that when the questionnaire results were narrowed to only the O'ahu residents who ranked the conservation values (757 participants), the rankings matched those for the complete set of results.

Figure 2 Conservation Values Rankings (O'ahu Residents Only)



However, when the results were narrowed to reflect the 296 participants who identified themselves as Native Hawaiian (regardless of residency), the rankings changed. The same conservation values ranked in the top four, but depending on the methodology, the highest ranking value was either Water Quality and Quantity or Cultural and Historic Places. Agricultural Lands also took over Natural Habitats for the number three rank.

Figure 3 Conservation Values Ranking (Native Hawaiian Participants)



The "Dot Vote" exercise was meant to complement the questionnaire survey and provide participants with an easy and visual way of indicating their top three conservation values. Each participant was provided three dots to vote for their top three conservation values. The number of dots pasted to each value was counted and the conservation value with the most dots was considered the most important.

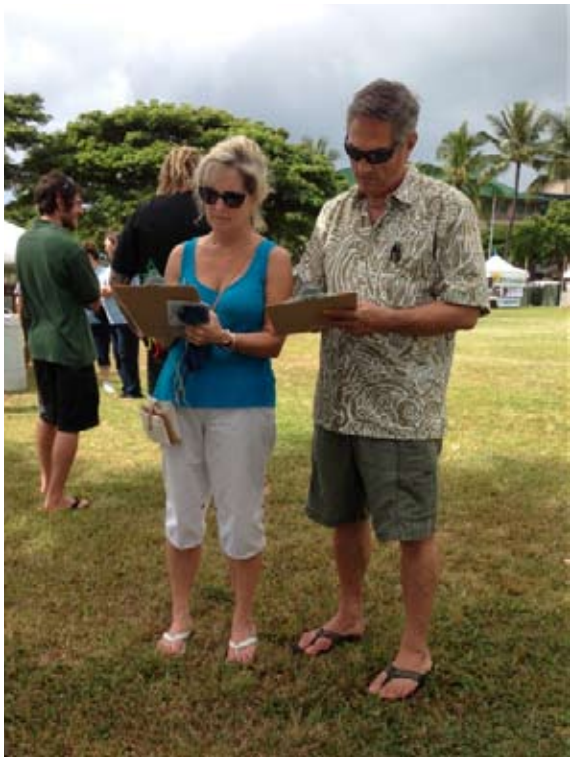
Table 3 Conservation Value Rankings (Dot Vote)

Conservation Value	Number of Votes	Rank
Water quality and quantity	192	1
Agricultural lands	158	2
Natural habitats	141	3
Cultural and historic places	118	4
Coastal regions	76	5
Recreation and public access	76	5
Viewplanes or viewsheds	31	7

Both the overall questionnaire results and the dot vote showed that "water quality and quantity" was the number one value. "Natural habitats" was ranked second in the overall questionnaire results but switched places with third-ranked "agricultural lands" in the dot vote. For both the questionnaire and the dot vote, the top four values were consistently water quality and quantity, natural habitats, cultural and historic places, and agricultural lands. This is interesting to note, as not everyone who completed the questionnaire also participated in the dot vote and vice versa, yet both methods resulted in a similar prioritization of values.

THREATENED PLACES

Through the questionnaire, participants shared places throughout the island that they felt are threatened. Many of these places are current agricultural lands, forests, and coastlines. Hawaiian cultural and traditional agricultural sites such as loʻi, fishponds, and places necessary for cultural and religious practices were also mentioned. While most of the questionnaire responses referred to general types of land (e.g., agricultural lands, beach access) or locations (e.g., Windward side), many participants identified more specific places. These locations are listed in Tables 8-15 in the appendix and are grouped by City planning district. Places are listed only once in the table, even if identified by multiple participants. If further reference is needed, please refer back to the spreadsheet and original survey forms.



VISION FOR O‘AHU

Participants were asked what they would like O‘ahu to look like in 25 years, i.e., what would they want it to be for their children and grandchildren. People wanted to see O‘ahu as a more sustainable place where development is contained to certain areas. Many wrote of more green, open spaces, “keeping the country, country,” and protected cultural sites. If O‘ahu is not as it is now, it would hopefully at least supply more of its own food and have access to lands for agricultural use and recreation. There were also a number of wishes to reduce traffic and have integrated transportation networks including sidewalks and bikeways.

A few quotes from the community are provided here:

“I want my child to live in a home where she can have a quality of life that includes the existing natural land and resources. O‘ahu is a unique living experience for its beautiful environment on land and sea. I would love her to share the experience of ohana and connection to culture and nature; to see the beauty of our mountains, the green of our lands, the open range of fields and trees and the joy of an unchanged climate that reflect the days of old Hawai‘i.”

“I would like O‘ahu to have a balance between preserving its history and culture and its natural environment. It is also important for it to strive to be as energy independent and agriculturally sustainable as possible.”

“A place where everybody (resident and tourist) feels a kuleana to mālama ‘āina and aloha ‘āina; where all remaining fishponds and lo‘i kalo are in full production, where kids are safe to swim in streams; where Native Hawaiians feel at home wherever they are in Hawai‘i; where protecting of Hawaiian cultural sites is of highest priority to all including the state and county [and] federal government.”

“I’d like to see organized growth. In Honolulu, it should continue as a thriving, bustling city but clean and energy efficient. Beautiful street lamps, sparkling lights. And also, a balance of beautiful lush, green mountains and amazing waterfalls. Keep the Windward side lush and tropical. Keep the North Shore beautiful and authentic. But clean up the urban area. Embrace the modern and the ancient. They can exist together.”

“Sustainable! We’ll have working fishponds, lo‘i, and farms and no one would go hungry, just like ancient Hawai‘i. We’ll have places to meet and wala‘au, hula, kanikapila, hoe wa‘a, mahi ‘ai, and lawai‘a. We will mālama the ‘āina, kai, and ‘ohana. Mahalo!.”

“A model of green energy and sustainable living that honors and promotes the spirit and traditions of the people of Hawai‘i.”

“Resilient communities with thriving native ecosystems managed in balance with local agricultural, cultural and recreational use of the lands, streams and sea.”

“Vibrant urban areas served by transit that connect distinct communities surrounded by open, green space that is preserved and protected for future generations but allows sustainable gathering and recreation.”

"I want to see more communities engaging in conservation and resource management which will ultimately help bring more presence of community environmental stewardship."

"Lush, green and healthy—a place where native plants flourish. Clean and clear fresh water in the mountains; clean and unpolluted oceans."

"Water running in streams, access to lands to grow food, available to new farmers. MORE LOI on Oahu - choke loi, which needs LAND and WATER."

"A healthy balance of green land, blue sky and water, natural "authentic" earth colors popping out in between development which houses where we work, play, educate and live. This palette would extend to all areas of the island and within each district. All districts have ag is some size and shape. All districts have celebrated cultural sites, all districts have affordable housing, all districts have parks and open space with access to mountain and sea."

MAP YOUR GREENPRINT

Participants were asked to identify "the one place on O'ahu that you would want to protect for the future" by placing a dot on a map. Most of the participants had a difficult time selecting just one place and wanted to "put one giant dot over the entire island." This mapping exercise identified special places throughout O'ahu, many coastal and some even offshore. Upper watersheds and urbanized areas were also identified.

DEMOGRAPHICS

Survey participants were asked to provide demographic information about themselves. In general, most of the people who participated in the survey were residents of O'ahu (93%), and many identified themselves at least partially either "White" (30%) or "Asian" (25%). Two-hundred ninety-six respondents (26%) identified themselves as at least partially "Native Hawaiian." Of the participants that indicated their age and gender, the average age of respondents was 45 years old and over half (59%) were female.

PLACE OF RESIDENCE

Residence was determined by zip code. Of the 762 respondents who provided a valid zip code, the majority (93%) were residents of O'ahu.

Table 4 Demographics of Respondents: Place of Residence

Place of Residence	Number of Responses	Percentage
O'ahu	707	93%
State of Hawai'i (other than O'ahu)	28	4%
US Mainland	23	3%
US Territory	2	0%
Outside of USA	2	0%
Total number of Responses	**762**	**100%**

Table 5 Participation by Development Plan Area

Development Plan Area	Number of Participants	% of Participants	Population (CY 2000)	% of Population (2000 Census)
Central O'ahu	95	13%	148,186	17%
East Honolulu	58	8%	46,735	5%
'Ewa	40	6%	68,718	8%
Ko'olauloa	12	2%	14,546	2%
Ko'olaupoko	184	26%	17,999	13%
North Shore	16	2%	18,380	2%
Primary Urban Center	271	38%	418,333	48%
Wai'anae	31	4%	42,259	5%
TOTAL	**707**		**876,156**	

NOTE: This table includes only those participants from the island of O'ahu. Not all of the participants provided a valid zip code on the questionnaire.

Participation in the survey was fairly representative of O'ahu's population in regard to where they live, with the proportion of participants from each City Development Plan area roughly matching population figures from the year 2000, the most recent year that data is available, but Ko'olaupoko was over-sampled and the PUC was under-sampled.

Figure 4 Questionnaire Participation by City Development Plan Area

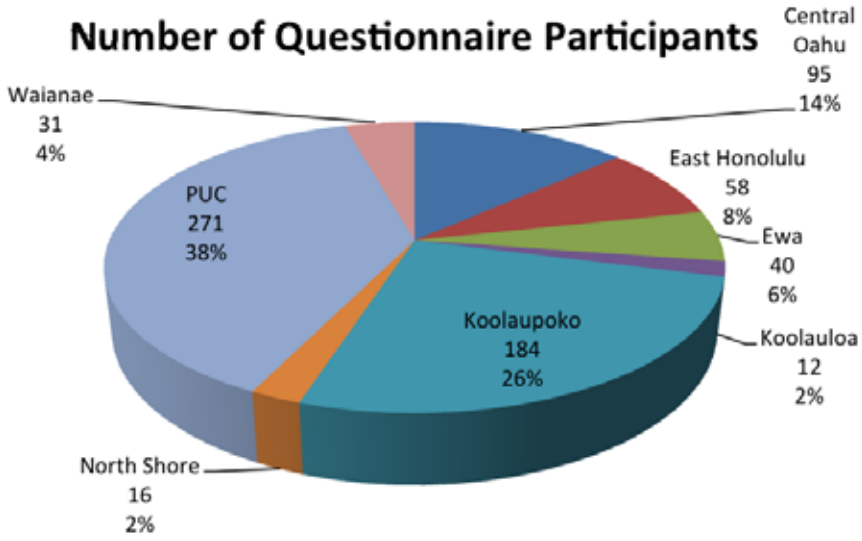
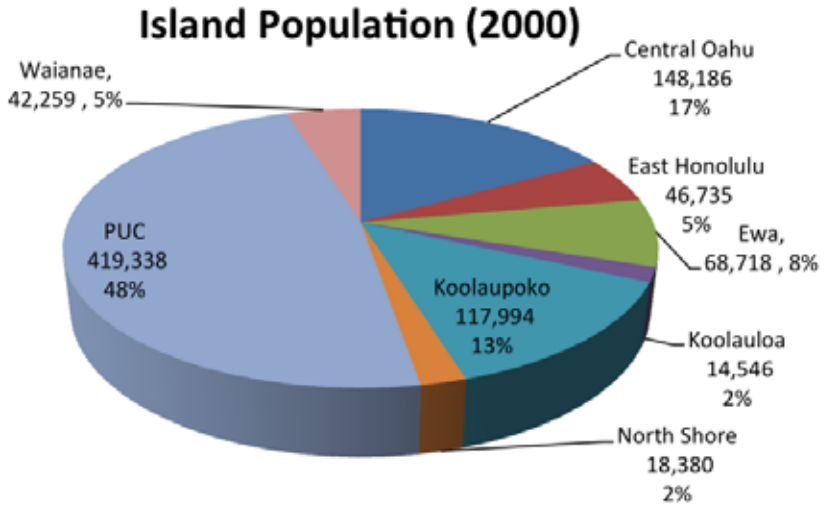


Figure 5 Population by City Development Plan Area (CY 2000)



AGE

Seven-hundred one respondents provided their age on the survey questionnaire. The average age of respondents was 45 years old. The youngest respondent was eight years old and the oldest was 86 years old.

ETHNICITY OR RACE

Survey participants were asked to identify the ethnicity or race that they identify with and were allowed to select as many choices as they wanted. Two-hundred one of the 812 respondents who identified an ethnicity (25%) identified themselves as being of more than one ethnicity/race. Many of the respondents identified themselves as at least partially "White" or "Asian," but a significant number of respondents (36%) identified themselves as "Native Hawaiian." This is likely due in part to the Greenprint Team's focus on gaining feedback from the Hawaiian community and holding SpeakOuts at events that were likely to draw Hawaiian attendees.

Table 6 Ethnicity of Participants

Ethnicity/Race	Number of Responses	Percentage
Native Hawaiian	296	26%
Other Pacific Islander	52	6%
Hispanic or Latino	55	5%
Native American	29	3%
White	335	30%
Black	17	2%
Asian	287	25%
Other	60	5%
Total number of respondents that indicated ethnicity/race	**812**	

NOTE: The number of responses do not add up to the total number of respondents that indicated ethnicity/race because respondents were allowed to indicate more than one ethnicity/race. The percentages indicate the number of participants who identified with a particular ethnicity/race, of the 812 who responded.

GENDER

Of the 709 respondents that provided their gender, more than half (59%) were female.

Table 7 Gender of Participants

Gender	Number of Responses	Percentage
Male	288	41%
Female	421	59%

APPENDIX A: THREATENED PLACES

Through the questionnaire, participants shared places throughout the island that they felt are threatened. Specific locations that were identified are listed in Tables 8-15 and are grouped by City planning district. Places are listed only once in the table, even if identified by multiple participants. If further reference is needed, please refer back to the spreadsheet and original survey forms.

Table 8 Threatened Places in Central Oʻahu

Threatened Places	Threat
Prime ag land	• Large land owners and developers in conjunction with state and local governments prioritize growth and windfall gains over food security • Privatization and lack of public access to beach • Conversion to other uses, housing development • Agricultural lands being sold (Kunia) without proper planning for long term. Buy local stay local? Where and what are they growing? GMO plants without rules or proper regulations on cross contaminating other crops.
Aiea	Proposed zip line
Hawaiʻi's Plantation Village in Waipahu	HPV cannot continue without city/state funding. City is insisting HPV be self-sustaining." Not gonna happen"
Fields that pueo nest in	Development
Sandalwood forest of Wahiawā	Development
Rainforest area, Honouliuli	• Climate • Development and displacement
Kīpapa Gulch	Possible development
Koa Ridge	• Pollution • Traffic and development
Kolekole Pass (from "Map your Greenprint")	Unsure of military's use
Pōhakea Pass, Kunia-Lihue area	SHPO, State, and City allowing C&C Farm lands to desecrate cultural and burial sites without 106 protection
Mililani	Development
Kūkaniloko	• Development • Overuse and abuse
Wahiawā Plains (old Dole Plantation sites)	Possible conversion to fee simple/residential
Pearl Harbor fishponds	Neglect

Table 9 Threatened Places in East Honolulu

Threatened Places	Threat
"The Great Lawn," i.e., Hawai'i Kai along Kalaniana'ole	• Proposed strip mall, Foodland • Commercial development
Hanauma Bay	Tourists
Public coastal access in Diamond Head/Hawai'i Kai	Privatization and lack of public access to beach
Ka Iwi coast – mauka section	• Development: retail, housing, hotels, vacation cabins • Overpopulation and overdevelopment
Ka Iwi shoreline	Possible development with homes or resorts
Kalauha'iha'i Fishpond	Being sold and developed/destroyed
Kamilonui Valley – one of the few agricultural areas in East O'ahu	• Lease rate changes by KSBE • Ag lands/nurseries leases were renegotiated but they have a termination date • History shows land owner views area as pricey Real Estate - eight years ago the landowner with a developer and some agents 'worked' the valley farmers over in an attempt to collect lease rights in support of paving over the land for more high end homes... ugh!! • Encroachment of houses • Potential of great profit at the public expense • In recent years, proposals to develop a new housing development have been floated • Retail
Kānewai spring in Kuli'ou'ou	The parcel of Kānewai Spring is zoned residential and is presently being prepped for sale. This treasure should be a public resource not another Mcmansion. Most prospective owners are unaware of the pond's [Kānewai Fishpond] high cultural and hydrological values and instead view it as a water feature.
Kānewai Fishpond	Being sold and developed/destroyed
Maunalua Bay	• Invasive limu • Strip malls • Too many people • Dirt/runoff
Paikō Lagoon	• Too many people • Dirt/runoff
Paikō Ridge	• Military use • Culturally inappropriate use • Being sold and developed/destroyed/no access
Wailupe Valley (end of Hao Street)	• Military use • Culturally inappropriate use • Being sold and developed/destroyed/no access
Kaiwi lookout	Thoughts of building development
Makapu'u	Too much fishing
Makapu'u rock climbing area accessed from the Makapu'u overlook opposite the lighthouse	Areas are closed by fences, signs, guards, and fines.
Kaupo – Baby Makapu'u	Homelessness/tourists
Back of Banyans (Back Roads)	New home development
Waimānalo Ag Lands	Development
Waimānalo Beach Park, Sandy Beach	Development Busloads of tourists driven to see turtles, dolphins, seals Need lauhala groves to reestablish Overcrowded with homeless Overuse Rubbish
Waimānalo, Sherwoods	• Change to a multipurp ose area for sports • Tourism/expansion

Table 10 Threatened Places in ʻEwa

Threatened Places	Threat
ʻEwa Beach near Iroquois Avenue	Redesign/construction causing erosion
ʻEwa Beach/Town	More buildings being built, looks like the mainland #2
ʻEwa plain	• Water being diverted • Development
Hau Bush	New housing development restricting beach access to public and destroying Hawaiian/cultural sites.
Honouliuli	By Housing Development, Shopping Centers, etc
Hoʻopili	• Residential construction • Urban sprawl • Development
ʻEwa Plantation Village	Development
Ag lands: Kapolei, between Kapolei and Waipahu, ʻEwa Beach, Kunia	• Large land owners and developers in conjunction with state and local governments prioritize growth and windfall gains over food security Residential development • Suburbanization
Oʻahu railway in ʻEwa	
Kalaeloa coastal dry area	Development and neglect of area
Kapolei	• It is becoming built up too quickly. Preserve the beautiful open land that is left behind on this island • By Housing Development, Shopping Centers, etc.
Kapolei fields	Condo development
Makakilo	Housing, over-population

Table 11 Threatened Places in Koʻolauloa

Threatened Places	Threat
Punaluʻu	Development
Hauʻula	Development
Kaʻaʻawa	Development
Kaʻaʻawa beaches and roads	Too much traffic and weather conditions are eroding the roads and beaches
Kahana	Development
Gunstock Ranch - Malaekahana	Mass development by Envision Lāʻie/ Mormon Church, Turtle Bay
Lāʻie	• Development • Traffic
Waiapuka	Overuse and abuse
Kahuku	• Development • Traffic • Public access taken away from land • Military use • Culturally inappropriate use • Hawaiian Electric Company's Wind energy development
Kahuku Airbase (between Kahuku Village and Kuilima)	
Kuilima/Kawela Bay	• Turtle Bay expansion – too many things, not enough space. • Commercial development
Turtle Bay	• Resort expansion • Encroachment on coastal areas for marine wildlife
Kualoa to Sunset	• Development • High-end homes and hotels
Kāneʻohe to North Shore	Development: too many condos close to the coast line and houses being built too close to each other; Turtle Bay
Anahulu Bridge	• Urbanization • Multi-story buildings

Table 12 Threatened Places in Koʻolaupoko

Threatened Places	Threat
Kualoa	• Overpopulation and overdevelopment • Too much industrial activity and pollution
Hakipuʻu makai loʻi	Sale
Hakipuʻu – Hawaiian burials	Development
Kahaluʻu ag lands	Subdivision and gentlemen's estates
Heʻeia	Development
Kāneʻohe	Development, too many homes
Streams and lakes around Kāneʻohe	Too much building around them
Kāneʻohe beaches	• Shoreline erosion, overuse • Pollution; lots of plastic bits washed ashore
Kāneʻohe taro patch	Too much industrial activity and pollution
Haʻikū Valley and Haʻikū Stairs	Residents want to close the trail and the trails and treasures would be lost. This is a unique valley and stairway with tons of history. Public access to the stairs so that this treasure is open to all and the local residents would not subject to the illegal trespassing.
Hoʼomaluhia in Kaneohe	Pollution
Olomana Valley	Development
Maunawili Valley	Development pressures
Kailua	Development, too many buildings
Kailua beaches	• Shoreline erosion, overuse • Commercial development
Kawainui Marsh	Development, planned tourist attraction
Mōkapu	Overpopulation and overdevelopment
Bellows	• Development • No access provided • Military use • Culturally inappropriate use
Waimānalo ag lands	Developers have been lobbying for the zoning to be changed from agriculture to residential
Waimānalo Park	Chance of people not caring to mālama ka ʻāina on the shore for school children
Waimānalo coastline	Beach erosion
Upper watersheds in Koʻolau mountains	• Climate change • Invasive species
H-3 Freeway	Lots of invasive trees moving up the valley and hillsides

Table 13 Threatened Places in North Shore

Threatened Places	Threat
Dole Pineapple lands	Land is up for sale; Future housing
River between Wahiawā and Waialua (with beautiful trees and bridge leading to Waialua)	Smells bad like something is rotting
Wahiawā to Haleʻiwa along Highway	• Home tract development • Tourism (from Dole Cannery) • Traffic
All the old ag land in Kunia all the way up to North Shore including Mokulēʻia	Acquire Monsanto land before it become sterile
Kaʻena Point	• Emphasis on protecting albatross had negative effect on native pueo • Overuse of sand dunes by off-road trucks • Invasive species
Dillingham Ranch area	Gentleman Ranch developed
Mokulēʻia	• Development • Busloads of tourists driven out to see turtles, dolphins, seals
Mokulēʻia Rock Climbing areas	Areas closed by fences, signs, guards, & fines
Waialua	Tourism development
Haleʻiwa	• Hotels and condos; over-run with visitors • No legal protection for structures • Need lauhala groves to re-establish
Laniakea Beach	People hunting turtles
Waimea	Housing development, overpopulated
Pūpūkea	Vacation Rentals, Tourists
Waialeʻe	Vacation Rentals, Tourist, Turtle Bay Resort
Turtle Bay	Too much building over natural areas
North Shore Shorelines	• Excessive traffic with tour buses dropping off people on the side of the road. • Lack of proper roads • Expensive homes limiting beach access • Erosion
North Shore	• Development is creating runoff into streams and the ocean • Tourism • Prime agricultural lands currently for sale • Proposed expansion of Turtle Bay Resort • Reluctance of County and State agencies to add public parks and related infrastructure.

Table 14 Threatened Places in the Primary Urban Center

Threatened Places	Threat
Pālolo valley rock climbing area by Pālolo valley stream; Ka‘au Crater	Access is restricted since it is encircled by private property with no clear public access to public land
Waikīkī shoreline and views	• Threat of redevelopment • Higher buildings, more crowding, overpopulation • Erosion • Access • Deteriorating • Trash and pollution
Waikīkī Natatorium	Government infighting
Kaimana Beach reefs	Spearfishing, collecting
Ala Moana YMCA	Commercial area at risk of being rebuilt/redeveloped
Ala Moana Beach	• Dolphin tours • Trash and pollution • Development plans for the nearby areas
Kaka‘ako	• Too many buildings, high rises • Unplanned development • Decisions based on profit, money • Building up Kaka‘ako water front without supporting roads causing more traffic! • Government wants to lease it to Japanese light show for commercial use.
“Kewalos”	• Development • Taking away parking for surfers
Irwin park	Keep it a park
Wa‘ahila Ridge	Hiking and biking
Mānoa Valley trails	Overuse
Liliha	Hi-rise development
Nu‘uanu Valley (higher valley)	Housing development
Kalihi Valley: Undeveloped portions behind Ho’oulu ‘āina Nature Preserve, on the left side of Likelike (when heading to Kāne‘ohe); ancient Kalihi ahupua‘a	• The water availability to the ahupua‘a of Kalihi is so minimal due to invasives and water diversions caused by the state. We need to bring water back by establishing more ahupua‘a practices in the uplands and makai to stop the threat of disappearing species, availability, etc. • Development, trash, invasive species
Moanalua Valley	Housing development
Moanalua Gardens (river)	Trash
Kamananui	They are old pineapple and sugar cane lands that will be developed for houses if left to the developers
Mokauea Island/Fishing Village	Development, trash, invasive species
Coastal Areas	• Threat of redevelopment • Higher buildings • More crowding • Erosion • Access
Watershed areas above Pearl Harbor	Petitions by land owners to rezone land from ag to urban

Table 15 Threatened Places in Waiʻanae

Threatened Places	Threat
Kaʻena Point Keaau Beach Part to Kaʻena Pt. and from Kaʻena Point to Mokulēʻia	• Overrun by 4-wheelers for too long (I was one). It's way past time to close the point to vehicles. 4-wheeling creates erosion that ruins the land and the ocean affecting fishing cycles and reef damages • Endangered native coastal trees • Off-road vehicles, erosion • Developers are requesting to rezone the large estates into 5-acre luxury lots
Kaneikapualena (Kamaileʻunu)	Kaneikapualena needs to be restored at least to the condition it was in c. 2000 the ala loa, according to pathmaui.org, faces a proposal that it be rerouted. It isn't appropriate/pono for any place to be developed at all before what it meant, how it was used, etc. is understood
Kahanahāiki	Invasive species, pigs
Keawaʻula cultural sites	Sites destroyed by hikers
Mākua	• Development • No access provided • Military use • Culturally inappropriate use • (Cultural sites) Beach users not aware of restrictions, lack of enforcement, military
Mākaha	• Overdevelopment • Roads • Busloads of tourists driven to see turtles, dolphins, seals • Bringing the road in will endanger the land and travelers
Mākaha - heiau	Development, urbanization
Pōkaʻi Bay	• Need lauhala groves to reestablish • Breaker wall has been neglected
Waiʻanae	• Overdevelopment • Crown lands - there is no viable stewardship of the land for proper management.
Lualualei - open land	Development
Waimanālo Waste Landfill	Drainage contaminants seeping into the Kahe Point reef
Waiʻanae mountains - upper watersheds	• Climate change • Invasive species, pigs
Ag areas	Developers are very interested in Waiʻanae ag areas
Coastal areas on the Leeward side, Beach parks; that 1/2 mile zone fronting the shore break	• Development threatens some of the last coastal areas of Oʻahu • Residentially challenged people • Poor water and sewer infrastructure • Poor beach park design/planning • Dolphin tours

Finding Balance between Development and Conservation

The O‘ahu Greenprint

APPENDIX D

ISLAND LEADERSHIP TEAM MEETING SUMMARIES

ISLAND LEADERSHIP TEAM MEETING 1 SUMMARY

JULY 30, 2013, 6:00–8:00 P.M. | KAHILI PĀLAMA PUBLIC LIBRARY

Meeting Participants

Karen Ah Mai, Ala Wai Watershed Association
Anamalia Ancheta, Wahiawā Hawaiian Civic Club
Rebecka Arbin, State Office of Planning-Coastal Zone Management
Leo Asuncion, State Office of Planning-Coastal Zone Management
Morris Atta, Honolulu Authority for Rapid Transportation
Nick Belluzzo, State Historic Preservation Division
Alvin Char, interested citizen
Carleton Ching, Castle & Cooke
Pat Chung, Mālama Mānoa
Ted Clement, Hawaiian Islands Land Trust
Leimana Damate, ʻAha Moku Advisory Committee
Rae DeCoito, Mālama Maunalua
John DeLay, University of Hawaiʻi, Honolulu Community College, Geography
Malia Doo, Wahiawā Hawaiian Civic Club
Myah Ely, Wahiawā Hawaiian Civic Club
Stanton Enomoto, Pacific Islands Climate Change Cooperative
Summer Faria, Wahiawā Hawaiian Civic Club
Kiersten Faulkner, Historic Hawaiʻi Foundation
Scott Glenn, Hawaiʻi State Environmental Council
Mike Gushard, State of Hawaiʻi Historic Preservation Division
Shawn Hamamotao, Office of Mayor Kirk Caldwell
Kelley Hart, The Trust for Public Land
Sherri Hiraoka, Townscape, Inc.
Steve Hoag, Hawaiʻi Reserves, Inc. (HRI)
Ilima Ho-Lastimosa, Gods Country Waimānalo
Lea Hong, The Trust for Public Land
Josiah Hoʻohuli, Homestead Nanakuli
Charley Ice, Hawaiʻi Department of Land and Natural Resources, Water Commission
Mary Ikagawa, Koʻolau Mountains Watershed Partnership
Katherine Jones, The Trust for Public Land
Laura Kaakua, The Trust for Public Land
Camille Kalama, Native Hawaiian Legal Corporation (NHLC)
Jo-Lin Kalimapau, Wahiawā Hawaiian Civic Club
Koa Kaulukukui, Office of Hawaiian Affairs (OHA)
Amelia Kelly, Wahiawā Hawaiian Civic Club, Na Wahine ʻO Kunia
Randy Kennedy, Hawaiʻi Conservation Alliance, Department of Land and Natural Resources
Ann Marie Kirk, Livable Hawaiʻi Kai Hui
Herb Lee, Pacific American Foundation
Dorothy Letts, Koʻolauloa Neighborhood Board
Meg Lin, Mālama Mānoa
Ron Lockwood, Neighborhood Board #8 (McCully)
Alapaki Luke, Kahana farmer, Honolulu Community College
Kaleo Manuel, Department of Hawaiian Homelands
Cathy Mattoon, Koʻolauloa Hawaiian Civic Club
Creighton Mattoon, Keep the Country Country
Kukui Maunakea-Forth, MAʻO Organic Farms
Sandy Mitani, Oʻahu RC&D
Nathalie Morison, State Office of Planning—Coastal Zone Management
Lenora Ohye, Department of Land and Natural Resources, Commission on Water Resource Management
Vicki Pakiele, Wahiawā Hawaiian Civic Club
Benton K. Pang, U.S. Fish and Wildlife Service
Makana Paris, Prince Kuhio Hawaiian Civic Club
Donovan Preza, Unifersity of Hawaʻi, Geography
Cynthia Rezentes, Mohala I Ka Wai
Derrick Ribilla, Hawaiʻi Department of Land and Natural Resources, Land Division
Paul Richards, Waimanalo Hawaiian Homes Association
Kim Rivera, Wahiawā Hawaiian Civic Club
Kahale Saito, Honolulu Community College
Pauline Sato, Mālama Learning Center
Matt Kapaliku Schirman, Hui Ku Maoli Ola
Molly Schmidt, Department of Land and Natural Resources, Legacy Land Conservation Program
Shirley Swinney, Kapolei Hawaiian Homestead Association
Marti Townsend, The Outdoor Circle
Leslie Uptain, The Trust for Public Land
Barry Usagawa, Honolulu wwWater Supply
Dean Uyeno, Hawaiʻi Department of Land and Natural Resources, Commission on Water Resource Management
Sheila Valdez, Wahiawā Hawaiian Civic Club
Neena Wang, Hawaiʻi's Thousand Friends
Kehau Watson, Aha Moku Council, Kona Moku representative
Jan Yoshioka, Kākoʻo ʻŌiwi
Peter Yuh, U.S. Army Garrison, Hawaiʻi

AT THE START OF THE MEETING, Lea Hong and Laura Kaakua did an oli (chant) asking for guidance and positive growth. Wahiawā Hawaiian Civic Club members then passed around makana (gifts) of pa'akai (Hawaiian salt) from Kūkaniloko, and Aunty Malia Doo, the club's Pelekikena (president), sang a song about sharing Aloha to start the meeting off right.

Koa Kaulukukui from the Office of Hawaiian Affairs (OHA) made welcoming remarks, thanked participants for attending, and explained that OHA has partnered with The Trust for Public Land (TPL) to launch a Greenprint for O'ahu. Lea Hong from TPL said a few words about TPL and explained how the organization is involved and then led introductions by all participants.

Kelley Hart from TPL then presented a brief overview of the Greenprint process, using the North Shore Greenprint as an example. After acknowledging members of the North Shore Greenprint steering committee and Technical Advisory Team (TAT) in the room, she outlined the process of development of the Greenprint on the North Shore and in general. The process begins by engaging in a community conversation to set and refine project objectives and conservation goals. This conversation includes engaging in community outreach, conducting strategic interviews, participating in SpeakOuts, and completing a statistically significant poll. With this information, the Geographic Information Systems (GIS) team translates the data into a GIS model with criteria weighted according to community goals and maps that reflect community priorities. Finally, stakeholders create a plan for realizing their Greenprint through action planning. Kelley noted that the goal is to complete the O'ahu Greenprint by the end of summer 2014.

Kelley then discussed the role of the Island Leadership Team (ILT) in the O'ahu Greenprint process. The ILT members serve as liaisons, identify and review conservation goals, provide guidance to the TAT, and contribute to the development of the action plan. Kelley noted that if members of the ILT would like to make a presentation on the O'ahu Greenprint to organizations that they are a member of, she could provide talking points and a video (to be completed in the fall). Sherri Hiraoka from Townscape then reiterated the objectives for community outreach and described how the information gleaned from these communications will be used in the Greenprint process. She described the SpeakOut concept and reported on the SpeakOut events that had already occurred and future potential events. She asked the ILT to let her know if there are any additional opportunities for SpeakOuts on O'ahu in the coming months, particularly for Ko'olauloa, Ko'olaupoko, and Wai'anae.

Kelley Hart then divided participants into six groups of approximately 10 participants in each group. Sherri, Laura, Kelley, Katherine, Koa, and Lea acted as facilitators. Participants spent about 15 minutes providing their thoughts on two different but related topics. They first answered the following questions:

1. What would you like this project to accomplish?
2. What should its objectives be?
    a. Are these the right set of objectives?
    b. What does success mean?

Participants answered these questions and reviewed the following DRAFT objectives:

1. Establish the value residents place on cultural, recreational, and natural resources.
2. Identify critical lands for protection and a means for protecting them.
3. Strengthen and coordinate existing conservation networks throughout the state.
4. Promote conservation that is more strategic and responsive to residents' needs.
5. Increase community awareness around:

a. The value and need to protect Hawaiian cultural sites.
b. The imperative for a balanced approach to growth.
c. The tools for preserving critical lands.

NOTE: Refined objectives will be presented at the next ILT meeting, and a full list of the changes suggested by the participants is available for review by contacting Katherine Jones at Katherine.Jones@tpl.org.

Participants then completed the sentence "I would like to use land conservation in order to . . ." Responses from the brainstorming session around what land conservation can be used to accomplish are provided below. The values and goals that came out of these discussions included the following:

- **Protect fresh water quantity and quality**
  Protect our natural waterways and streams
  Preserve and restore stream corridors all the way to the conservation districts to form connected greenways
  Preserve whole watersheds
  Protect stream, riparian areas (swimmable Ala Wai), and vegetation along streams
  Protect aquifer recharge
- **Protect coast/ocean**
  Protect nearshore waters and fisheries
- **Protect and restore working lands**
  Identify lands to grow more taro
  Protect existing farmlands to grow food (and for community values)
- **Protect cultural sites**
  Protect traditional Hawaiian areas where cultural activities take place
  Preserve significant cultural, archaeological, and historic landscapes and sites
  Protect sacred sites (e.g., Kamehameha III home in Nu'uanu)
  Connect indigenous people—provide areas for gathering and for spiritual activities
- **Protect historic sites**
  Preserve significant cultural, archaeological, and historic landscapes and sites
- **Maintain healthy mauka to makai connection**
  Working ahupua'a
  Protect the few undeveloped/intact ahupua'a that are left
  Minimize fragmentation = protect systems
  Protect symbiotic relationship with land, ocean, and submerged land
- **Protect native habitats**
  Protect the karst system (lava tube aquifers that carry water from mountains to streams to ocean)
  Reforestation of ahupua'a system
  Protect dryland forest where medicinal herbs grow
  Protect areas where the number of endangered species could increase
  Identify and protect land for endangered species to migrate to because of climate change
  Provide wild and natural green areas; native plants and animals; and biodiversity
  Protect vegetation along streams
  Protect natural "wild" places versus landscaped areas
  Protect spawning habitat
- **Protect access to mountains and oceans**

- **Promote sustainability**
  Use our land and water in sustainable ways
  Protect the health and well-being of people
  Protect and promote sustainable use ecosystems (reciprocal relationship with healthy ecosystems and communities)
  Increase our ability to be more resilient, where resilient means making use of what you have to survive
- **Use local knowledge**
  Use traditional knowledge/families
  Reflect values of the community
- **Act with future generations in mind**
  Give future generations a Hawai‘i that they deserve
  Ensure that resources are there for future generations
  Consider that traditional comprehension in Hawai‘i is that we are responsible for the next seven generations
  Preserve resources for the future
- **Use traditional understanding of land connection and management**
  Restore healthy balance from mountains to ocean
  Apply ahupua‘a principles to modern conservation of land and water
  Conservation: traditional management—indigenize conservation in Hawai‘i
  Connect people to land
  Reconnect people with place
- **Prepare for climate change**
  Increase community resilience against changing environment
  Work within the context of global warming and its effects
- **Action Plan ideas**
  Protect and retain rural open space designations (keep the country, country). Stick to general plan and other (state) land conservation methods. Preserve designated conservation land (no roads or tunnels through it)
  Do mitigation banking to generate revenue to purchase more lands
  Promote and enhance ecosystem-based management across government agencies and large landowners
  Do education and awareness building. Discuss the value of:
    reforestation to work toward holistic ecosystem
    restoring working ahupua‘a
    biocultural resources

Lea asked participants to fill out the Surveys and Community Outreach Ideas and Volunteer Opportunities form. The meeting adjourned with thanks given to the ILT for participating in the process.

ISLAND LEADERSHIP TEAM MEETING 2 SUMMARY

OCTOBER 30, 2013, 6:00–8:00 P.M. | MO'ILI'ILI COMMUNITY CENTER

Meeting Participants

Karen Ah Mai, Ala Wai Watershed Association
Rebecka Arbin, State Office of Planning- Coastal Zone Management
Sam Aruch, Hawai'i Conservation Alliance/Natural Resource Data Solutions
Leo Asuncion, State Office of Planning- Coastal Zone Management
Chuck Balcher, Washington Intermediate School SSC
Lori Buchanan, Moloka'i/Maui Invasive Species Committee
Stuart Coleman, Surfrider Foundation
Chris Dacus, City and County of Honolulu
Bob Damate, 'Aha Moku
Leimana Damate, 'Aha Moku
Stanton Enomoto, Pacific Islands Climate Change Cooperative
Patrick Grady, Pacific Islands Climate Change Cooperative
Kelley Hart, The Trust for Public Land
Bob Heuer, The Trust for Public Land
Sherri Hiraoka, Townscape, Inc.
Lea Hong, The Trust for Public Land
Charley Ice, Hawai'i Department of Land and Natural Resources, Water Commission,
Elmer Kaai, Honua Consulting
Laura Kaakua, The Trust for Public Land
Koa Kaulukukui, Office of Hawaiian Affairs
Greg Knudsen, Hawai'i Kai Neighborhood Board
Katherine Jones, The Trust for Public Land
Ron Lockwood, Neighborhood Board #8
Alapaki Luke, Kahana Valley and Honolulu Community College
Tesha Malama, Hawai'i Community Development Authority
Albie Miles, MA'O Organic Farms, University of Hawai'i, West O'ahu
Nathalie Morison, Office of Planning- Coastal Zone Management
Kaimo Muhlestein, Office of Hawaiian Affairs
Kamoa Quitevis, Office of Hawaiian Affairs
Leimaile Quitevis, 'āina Arts & Photography
Cynthia Rezentes, Mohala IKa Wai
Pohai Ryan, Office of Representative Faye Hanohano
Kahale Saito, Honolulu Community College
Kathy Sokugawa, City and County of Honolulu, Department of Planning and Permitting
Jared Underwood, U.S. Fish and Wildlife Service
Leslie Uptain, The Trust for Public Land
Barry Usagawa, Honolulu Board of Water Supply
Earl Yamamoto, Department of Agriculture

AT THE START OF THE MEETING, Lea Hong, Laura Kaakua, Kamoa Quitevis, and Leimaile Quitevis offered an oli (chant) asking for guidance and positive growth. Staff from the Office of Hawaiian Affairs (OHA) and The Trust for Public Land (TPL) then introduced themselves.

Koa Kaulukukui from OHA made welcoming remarks, thanked participants for attending, explained that OHA has partnered with TPL to launch a Greenprint for O'ahu, and described past conservation transactions involving TPL and OHA to set context about the purpose of the Greenprint. Kamoa Quitevis of OHA spoke about OHA's Kipuka database, which emphasizes traditional knowledge about land in Hawai'i and may be augmented with the Greenprint.

Lea Hong then led a round-robin of introductions with all participants before showing a short video about the Greenprint and encouraging everyone to take the community survey. (A link to the video and survey are available at www.oha.org/greenprint.)

Lea described the concept, process, and timeline for the Greenprint. Lea described the role of the Island Leadership Team (ILT) and clarified that the ILT is made up of people who come to the meetings but are not required to be on the ILT. She asked those who do not want to be part of the team to let her know. She encouraged ILT meeting participants to share the Greenprint with their community groups and organizations and ask their members to fill out surveys.

Laura Kaakua reviewed the latest version of the mission and objectives of the Greenprint with participants (already reflecting input from first ILT meeting and then responses over email).

Participants provided suggestions and questions related to the mission statement and objectives, including the following:

- What is the definition of agriculture?
- Put more emphasis on restoration.
- Show that the acquisition is totally voluntary.
- What is the definition of "critical land"?
- Add "subsistence agriculture."
- Mission statement: A simpler mission might reflect Hawaiian feeling in Western terms better.
- Remove the word "dynamic" from mission statement.
- The parenthesis is repetitive; use one or the other.
- What is the definition of "culture"?

Laura explained that after these comments are taken into account, everyone will receive an updated copy of the mission statement and objectives.
Bob Heuer, associate GIS director at TPL, presented on the methodology/process for mapping. He explained that he had engaged a technical advisory team of local experts to help identify the best data and guide development of maps. TAT members included the following:

- Sam Aruch, Hawai'i Conservation Alliance
- Nick Belluzzo, State Historic Preservation Division
- Craig Clouet, Hawai'i Geographic Coordinating Council
- Chris Dacus, City and County of Honolulu
- Scott Derrickson, State Land Use Commission
- Patrick Grady, Pacific Islands Climate Change Collaborative
- Jason Jeremiah, Kamehameha Schools
- Robert O'Conner, NOAA
- Donovan Preza, UH Geography
- Kamoa Quitevas, OHA
- Jared Underwood, U.S. Fish and Wildlife Service
- Barry Usagawa, Honolulu Board of Water Supply

The team will bring draft maps to the next ILT meeting for review and comment.

Comments related to mapping included the following:

- Clearly articulate why you are asking people for this information (particularly related to cultural resources) to help with discussions.
- How do you map and protect the resources at the same time? Can you generalize the area, and keep it confidential. Include additional expertise on TAT related to cultural resources or find a way to reach those who have this information.
- Will this process mean that lands become closed to practitioners?
- Can OHA and TPL assure the practitioners that they will not be cut off from their cultural practices? Include "access" in the objectives.
- OHA should partner with 'Aha Moku. They already have the practitioners with resource knowledge. They will share their mana'o.

Representatives from TPL and OHA responded to these comments and questions individually, highlighting the fact that TPL's motto is "land for people" and emphasizing that how the cultural data will be shared (and the level of detail) is still under discussion.

After the mapping discussion, Kelley and Sherri described community engagement undertaken for the Greenprint. Sherri described Townscape's role in the Greenprint—to engage in SpeakOuts and compile and process public input. Sherri described the nine SpeakOuts across the island and noted that people visited their booth and talked story, gave input through dots on a map, or filled out questionnaires. She then went through the conservation values as expressed by the more than 650 questionnaires received so far. Kelley and Sherri presented the draft community findings of land conservation values and asked participants to split into three teams for discussion.

Questions for Discussion:

– Is there anything missing from the list of community findings of land conservation values?
– Which values can and should be mapped? Which values can't be mapped?

After the discussion, Koa thanked participants for coming and let them know that the team would summarize these changes and rework the draft community findings of land conservation goals and send it out for ILT review over email. She asked participants to provide their email address if they had not already. She asked if anyone would like to be on a subcommittee to work on the topic of a telephone poll. Finally, she let them know that we'll meet with them again in a few months and will send a save the date. She said that in the meantime the mapping team will be getting started collecting data and reiterated that the questionnaires will be accepted until December 31.

ISLAND LEADERSHIP TEAM MEETING 3 SUMMARY

MARCH 27, 2014 6:00–8:00 P.M. | OFFICE OF HAWAIIAN AFFAIRS BOARD ROOM

Participants

Karen Ah Mai, Ala Wai Watershed Association
Tina Aiu, Hawaiian Islands Land Trust
Guy Archer, Hawaiian Trial and Mountain Club
Leo Asuncion, State Office of Planning- Coastal Zone Management
Stuart Coleman, Surfrider Foundation
Stanton Enomoto, Pacific Islands Climate Change Cooperative
Kiersten Faulkner, Historic Hawai'i Foundation
Kelley Hart, The Trust for Public Land
Bob Heuer, The Trust for Public Land
Lea Hong, The Trust for Public Land
Laura Kaakua, The Trust for Public Land
Randy Kennedy, Hawai'i Conservation Alliance, Department of Land and Natural Resources
Ann Marie Kirk, Livable Hawai'i Kai Hui
Lenore Ohye, Hawai'i Department of Land and Natural Resources, Commission on Water Resource Management
Duane Okamoto, O'ahu Resource Conservation & Development Council
Brad Punu, Energy Excelerator
Kamoa Quitevis, Office of Hawaiian Affairs
Pauline Sato, Mālama Learning Center
Molly Schmidt, Department of Land and Natural Resources, Legacy Land Conservation Program
Kathy Sokugawa, City and County of Honolulu, Department of Planning and Permitting
Leslie Uptain, The Trust for Public Land
Earl Yamamoto, Department of Agriculture

Summary

After an opening pule, Kamoa Quitevis welcomed participants and led a round-robin of introductions. Lea Hong reviewed the project background, which included a reminder about the project mission statement and objectives and what has been accomplished to date. She described the community engagement process: reviewing current plans, convening this group, collecting surveys from more than 900 people (through online and handwritten submissions), and engaging more than 1,200 people through SpeakOuts, interviews, and the online survey. Lea also talked about the next steps for this meeting: getting feedback on draft maps, then developing an action plan, an online mapping site, and a final project report.

Next Bob Heuer reviewed the mapping process for the O'ahu Greenprint. He explained that with guidance from the Technical Advisory Team (TAT) of local, regional, and state experts, The Trust for Public Land staff translated community values that have been identified as important (confirmed at the last Island Leadership Team meeting) into mapping results. He thanked the TAT for the many hours contributed toward helping to develop these maps. The TAT advisors are Sam Aruch, Hawai'i Conservation Alliance; Nick Belluzzo, State Historic Preservation Division; Craig Clouet, Hawai'i Geographic Coordinating Council; Chris Dacus, City of Honolulu Parks and Recreation; Scott Derrickson, State Land Use Commission; Patrick Grady, Pacific Islands Climate Change Cooperative; Rob O'Conner, NOAA; Kamoa Quitevas, OHA; Jared Underwood, U.S. Fish and Wildlife Service; and Barry Usagawa, Honolulu Board of Water Supply.

Bob presented each of the draft community value maps, and Kamoa provided additional context and a more detailed description of the cultural lands map methodology (see below). For each of the maps, Bob referred to a data table that explains the data sets and relative importance that the TAT assigned to the data sets to create each draft map (see attached). What follows are the major concerns and suggested improvements voiced by participants. (Bob's description of each map and the questions seeking clarification are not included in these notes.) Over the next four to six weeks, the project conveners—with assistance from the TAT, as applicable—will consider each of these.

- **In general:** Remove overlays (e.g., for military land, already protected land, etc., that cover up the mapping results) so people can see the priority results all across the study area. There may be instances in the future when the military will release land, and it would be good to get ready for that. Knowing where the priority lands are could also inform National Environmental Policy Act (NEPA) discussion on some of these lands.
- **Protect agricultural lands:** [no major concerns or modifications requested]
- **Preserve cultural and historic places:**
  - Concern about scale—there are many small but very significant areas that should still show up in results.
  - Ka Iwi coastline should show cultural priority.
  - Trails data is incomplete. More data is needed. OHA is working on this.
  - Fishponds: Also include springs and streams that feed fishponds.
- **Protect coastal regions:** Surprised there is not more high priority on this map—would like to see the definition of "pristine" be not as stringent so that more priority lands will appear.
- **Protect natural habitats:**
  - ILT members may want to add other natural habitat layers/places to this map.
  - Anchialine needs to be added (Division of Aquatic Resources may have the data).
  - Need to explain what karst is for readers/viewers.
- **Increase recreation and public access opportunities:** Important to note that a beach park is not necessarily a public right of way.
- **Protect water quality and quantity:** Look for other water supplies, such as drinking water supplies for private and military uses, and then show those source areas on the map, too.
- **Preserve and enhance view planes:** There are other principles to reflect besides the three that have been mapped to date. Follow up with Kathy to learn about the other view plane principles that are reflected in the regulations and see about incorporating them into the view plane analysis.

There was a lengthy discussion about the cultural and historic places map so more detail is provided here on that topic. Kamoa discussed the cultural lands map and the methodology used for creating it. He reiterated that one concern that the ILT and TAT shared is striking a balance between providing important information and protecting sensitive, confidential data. To accomplish this goal, the TAT decided to blend data points so that there is no specific identifier at any one point. He noted that much of the archaeological and sacred site information came primarily from the State Historic Preservation Office with updates provided by OHA. In creating the maps, the TAT decided to remove data points that did not make sense for the Greenprint (such as the runway from Pearl Harbor). Kamoa engaged with the ILT regarding ways to update databases (such as trail information) using public input.

Next, Kelley Hart presented the concept of bringing the conservation values together in one map. She said a single map can capture combined values and recognizes that we have limited resources to purchase/conserve land. A single combined map would show the places where protecting land means protecting many values in one place. She explained that when all of the community value maps are combined into one map, there are a variety of options, such as having all of the values equally weighted or putting more emphasis on some values. Kelley shared results from the community survey across O'ahu (of 910 self-selecting respondents) to provide an example of what a weighting among community values could look like. (For more information about the survey results, please contact Laura Kaakua at The Trust for Public Land for a copy of the full analysis.)

Community Conservation Values Ranked from survey

Community Conservation Values	Public	Native Hawaiian
Protect Agricultural Lands	16%	17%
Protect Cultural and Historic Places	17%	25%
Protect Costal Regions	11%	8%
Protect Natural Habitats	20%	16%
Increase Recreation and Public Access Opportunities	8%	6%
Preserve and Enhance View Planes	3%	3%
Protect Water Quality and Quantity	25%	25%

Kelley explained that although there was a difference in ranking for the top three values between Native Hawaiians and all respondents (called Public above), when we translated these rankings into two maps and compared them, the differences were far less significant. The map that showed results from all respondents combined had nearly all of the same high-priority lands identified. (For a PDF of those two maps, please contact Laura Kaakua at The Trust for Public Land.)

Then meeting participants discussed the idea of having a combined map. These were the comments:

- How do you deal with contiguity when you bring together the different value maps? For example, will it break up a trail? Is there a technical solution so you can keep some of the resources intact as you apply the "more bang for your buck approach"?
- Be sure to keep/show/share all seven maps. One map could be too limiting for some groups that want to access the Greenprint results.
- Maps could be equally weighted. We took a vote on this just to get a sense of what the group was thinking, and 13 out of 16 thought this was a good approach. Some of the reservations are that it could be too confusing or too muddled to bring that many community values together.
- Could equally weight the top four goals (would be giving some deference to the 900+ community survey results).
- Reservations about having a tiered ranking with water quality on top because water quality lands are already largely protected.
- Survey results aren't the "end all be all" since they are not statistically significant.
- Note: Some members of the group seemed reluctant to impose their own weighting. They felt that if TPL and OHA are going to use the results, they would rather see TPL and OHA select the weighting. But another community member pointed out the benefit of having a map that shows the community's combined priorities (instead of those of their organization) is that they could use the map that shows the combined thinking of the community and then compare with their own priorities. Could also overlay the "combined thinking" map with any one of the community value maps.
- Focus on the resources that are most urgently in need of protection. What are those? Some ideas from the group: Consider climate change, human health hazards, and food/energy security (the lands needed to enable O'ahu to produce more of its own food and more of its own energy).

Owing to time constraints, the meeting adjourned without a final decision about a combined map, but The Trust for Public Land and OHA staff said that each of these ideas will be considered and this discussion can be revisited at the next Island Leadership Team meeting. Laura Kaakua thanked participants for attending, explained that there will be follow-up with a meeting summary and other materials, and asked everyone to look out for an email announcing another meeting in about two months.

ISLAND LEADERSHIP TEAM MEETING 4 SUMMARY

JUNE 3, 2014 5:30–8:00 P.M. | OFFICE OF HAWAIIAN AFFAIRS BOARD ROOM

Participants

Karen Ah Mai, Ala Wai Watershed Association
Ruby Edwards, Hawai'i Office of Planning
Kiersten Faulkner, Historic Hawai'i Foundation
Kelley Hart, The Trust for Public Land
David Henkin, Earthjustice Legal Defense Fund
Bob Heuer, The Trust for Public Land
Charley Ice, Hawai'i Department of Land and Natural Resources, Water Commission, Water Commission
Pearl Johnson, League of Conservation Voters
Elmer Kaai, Honua Consulting
Laura Kaakua, The Trust for Public Land
Koa Kaulukukui, Office of Hawaiian Affairs
Katrena Kennedy, interested citizen
Randy Kennedy, Department of Land and Natural Resources
Ron Lockwood, Neighborhood Board #8 (McCully)
Alapaki Luke, Kahana Valley, HCC
Blake McElheny, North Shore Community Land Trust
Duane Okamoto, O'ahu Resource Conservation & Development Council
Steve Rafferty, The Trust for Public Land
Cynthia Rezentes, Mohala I Ka Wai
Kahale Saito, Honolulu Community College
Aulii Silva, Leeward Community College
Kathy Sokugawa, City and County of Honolulu, Department of Planning and Permitting
Marti Townsend, The Outdoor Circle
Barry Usagawa, Honolulu Board of Water Supply
Trisha Kehaulani Watson, Aha Moku Council: Kona Moku representative
Donna Wong, Hawai'i's Thousand Friends
Earl Yamamoto, Hawai'i Department of Agriculture

Summary

Koa Kaulukukui welcomed participants and led a round-robin of introductions. Laura Kaakua reviewed the project mission/objectives and accomplishments to date, which included a brief description of the community engagement process. She also introduced the agenda for this meeting: reviewing changes to the Greenprint maps; providing a demonstration of the online mapping site capabilities; getting feedback from this group on a composite map; and gathering suggestions for the Greenprint action plan. Laura also asked participants to let her know if, after seeing the online mapping site demonstration, they would like access to it (since it will likely be password protected).

Next Bob Heuer described the mapping process for the O'ahu Greenprint. He explained that with guidance from the Technical Advisory Team (TAT) of local, regional, and state experts, The Trust for Public Land staff translated community values that have been identified as important (confirmed at the last Island Leadership Team (ILT) meeting) into mapping results, except that the Office of Hawaiian Affairs (OHA) did the bulk of the work related to the cultural lands map. Bob went over the changes made since the last meeting. Then Bob provided a demonstration of the North Shore Greenprint live online mapping site to illustrate the capabilities that the O'ahu Greenprint site will have.

Participants had several questions and comments about the maps and the online mapping site:

- Who controls the site and who updates it? Bob: TPL can host it and can update it, funding permitting. Koa: It has not yet been decided who will host the site. OHA may end up hosting the site. This is under discussion now.
- Who will have access? Bob: There could be a public version and a password-protected version since the parcel data combined with the Greenprint results are typically considered sensitive information and therefore not typically made available to the public.
- Suggestion: Be sure to include a data dictionary that lets everyone know the date the data was

collected so that site users will know how current or out-of-date the data is.

- Suggestion: Include some language (disclaimer) about the fact that the maps are just a first cut at presenting possible opportunities and that results have to be verified with on-the-ground knowledge. Bob reminded the group that the maps are only as good as the data that informs them and that TPL, with help from TAT, collected the most current data available, but some of that data is old; and it's important that the due diligence follow the maps.
- Suggestion: Be sure to include explanations on assumptions made in the compiling of the data (TPL will double-check that the data table does that).
- Correction requested: There is an error in the display of the boundaries of the military coverage near/at the Pearl Harbor annex, and the military lands are much larger than what is displayed on the maps. Bob said he would look into this.

Next Kelley Hart presented the concept of bringing the conservation values together in one map to present the Greenprint to the public in written and verbal form, e.g., in a brochure. She explained that it can be difficult to present seven different maps when you have very limited time or limited pages to work with and your audience is the general public, so the goal is to develop one composite map that can be used for those situations. Kelley presented a handout with three scenarios that were brainstormed at the last ILT meeting, this time including a map of each of those scenarios. (She also referred to the meeting summary, handouts of which were provided at this meeting.) Then Bob gave a brief explanation on the difference between the three scenarios. Kelley also provided some background information on the survey, results of which were used to inform two of the scenarios. The discussion that followed included these topics and ideas:

There was discussion at the outset about the purpose and audience of that combined map, and Kelley clarified that we're talking about a map that can be used in a public facing brochure. Kathy Sokugawa later helped to clarify that we can think about it as the executive summary for the project. And she reminded participants that there will be a separate, nuanced website and a longer report.

Participants offered a few pros and cons for the scenario maps that TPL staff presented. (See attached handout from the meeting that shows each of the scenarios.) TPL staff noted that they developed the scenarios based on discussion at the last ILT meeting. One additional idea for a new scenario that involved a modifying Scenario B to eliminate the water quality value from the composite map (because surface freshwater sources already have regulatory protections) and adding another value or two (beyond the top four). But another participant explained that that presents problems since some parts of the island rely on groundwater for drinking water that is not already on land with regulatory protections.

Participants offered the following suggestions to TPL and OHA to keep in mind for the brochure and the composite map:

- Would like to see brighter colors—the brighter the better. Consider changing the colors: Could we have different colors for different community values?
- Map needs to be big enough to be readable.
- Talk about threats/urgency. (There was some discussion about the idea of trying to map urgency and some of the issues that make that difficult—subjectivity, appearance of attacking development community, etc.)
- There must be clear explanation to accompany any combined map. Talk about how the different values were overlaid to create the composite. May need to depict this visually. Some favored a map that shows all values layered together (as in layering transparencies on an old projector) rather than only showing where there is value overlap.

- Explain that the overall map does not necessarily show where all individual community values can be found on the landscape, but rather it's a combination of values across the whole island.
- Consider having at least one additional value map—it could be a map that shows the four values combined. Another suggestion was having it be the agriculture map (as was done for the North Shore Community Greenprint).

At the end of this discussion, a vote was taken. Everyone present was asked to vote for or against each of the three scenarios. Scenario A received 13 yes and 8 no votes. Scenario B received 8 yes votes and 3 no votes. Scenario C received 5 yes and 5 no votes. Note: There was only 1 abstention in the first vote, but many in the second and third votes. The first scenario received the most support (yes votes), so Kelley announced that Scenario A (all values equally weighted) will be the combined map. She pointed out that there was a vote on this scenario at the last meeting as well (before we could see a map of what it looked like), and it received 13/15 votes.

Next participants provided suggestions related to an action plan for the Greenprint. Kelley asked participants to review the action plan handout (see attached) during the meeting and offer written suggestions that TPL and OHA can consider for inclusion in an action plan for the Greenprint. After participants spent about 10 minutes reviewing the handout on their own, Kelley invited them to share ideas with the group. What follows is the list of objectives (developed during the first two Island Leadership Team meetings by members present at those meetings) and the action plan ideas discussed for each.

1. Establish the relative priority of values residents place on land and resources from the mountains into the ocean, including cultural, recreational, natural, historic, agricultural, subsistence, and other values.

No ideas were shared verbally during the group discussion, but several people offered written suggestions on the action plan handout:

- As water and natural habitat were ranked as the highest priority, this should be reflected in action. These priority values may not need protection by "legal means" such as acquisition or zoning but may need protection by management. For example, DLNR's Rain Follows the Forest program. [Comment by Randy Kennedy: May need to follow up to get clarification on what he is recommending for this action plan.] Rain Follows the Forest is a State initiative to provide funding for management of forests (i.e., fencing) to increase their watershed and habitat protection values.
- Further refine, caveat each data layer; develop a sustainable strategy for updating the data.
- Engage specific communities where you know there are land conservation and ocean protection struggles (e.g., Wai‘anae).
- Do an updated survey every five to eight years and update the maps to reflect changes in knowledge/priorities by O‘ahu residents.
- Make data available to general community through library websites.

2. Identify which important land and water resources are most threatened or most in need of protection or restoration and develop strategies to protect them and the associated values that make them important.

No ideas were shared verbally during the group discussion, but several people offered written suggestions on the action plan handout:

- Identify lands that are most at threat. For example, look at lands for sale, developers' long-range plans, and other landowner plans to identify threats.
- This [objective] requires local prioritization; Hawai'i lives in communities and protects its own, respects others. We may accept taking turns but not being overshadowed.
- Engage specific communities where you know there are land conservation and ocean protection struggles (e.g., Wai'anae).
- Overlay lands for sale or owned by land development companies.
- Tsunamis and their impact on areas mapped. How to protect? Hundred-year floodplains and their impact.
- Have a tour of the most threatened areas/sites.

3. Strengthen and coordinate existing conservation networks island-wide.

Ideas shared during the group discussion:

- Seek more buy-in with landowners and politicians. Conservation community needs to get better at involving them. Consider reaching out to Urban Land Institute chapter.
- Regarding action item 3(d) on the handout, use information gathered to nominate lands for protection for existing city funding sources and mechanisms.
- Encourage cities and counties to increase funding.
- Offer technical support to community groups so they can use and/or refine maps for their communities.
- Use in schools: Engage public and private schools to incorporate into curricula and research projects.
- Handwritten ideas not discussed during the meeting:
- Utilize Ko'olau and Wai'anae Watershed Partnerships.
- "Policy issues rise and fall, with initiatives arising in so many communities and priority issues. Energy will coalesce in seemingly random ways, so the networking is a key tool of public consciousness."
- "Develop "live," "real time" contact lists to share with others, either by geographic area of interest or by topic or systems (like water conservation). Email group lists with attribute data. Maybe a Facebook page?"
- Engage with local community conservation groups.
- Work with public and private colleges to offer courses/degrees in conservation fields.
- Work with DOE to upgrade science, Hawaiian, social studies, and math coursework.

4. Promote long-term conservation, restoration, and stewardship (aloha 'āina) that is strategic and responsive to community needs and values.

Ideas shared during the group discussion:

- Same as ideas verbalized during meeting for #3.
- Ask city to increase funding for protection and conservation of lands.
- OHA to explore creating additional funding for conservation.
- OHA/TPL to support (letters of support) smaller organizations trying to advance Greenprint goals.
- OHA/TPL could outreach to smaller organizations regarding various funding resources to leverage. For example, provide a directory of funding sources for them.
- Provide technical support to community groups to help communities create their own maps for places in their community.
- Handwritten ideas not discussed during the meeting:

- "There is a groundswell of community energy around these ideas as building blocks of a more viable future than a protected present. Local initiatives need support."
- Assist in funding cleanups to increase their impact and generate public awareness.
- Assist in providing tools, equipment, and storage for restoration projects.

5. Increase community awareness of and ensure proactive community action related to the value of and need to protect and revitalize Hawaiian cultural sites, places, landscapes, and historic properties; the importance of other conservation values such as agricultural, natural, and recreational values; the importance of creating synergy between all conservation values; the imperative for a balanced approach to growth; and the tools for preserving critical lands.

Ideas shared during the group discussion:

- Develop a webpage or other forum where residents can nominate a place that they think is most threatened or in need of protection. The benefit is you can capture data not captured in this survey and keep the data growing/expanding.
- TPL/OHA to brief all agencies/commissions on how to use the maps (e.g., share map with LUC). Do training sessions on how to use mapping with land-use commission, BLNR, HCDA, etc.
- Do electronic marketing to get word out at rollout.
- Consider ideas in #4 for application here as well.
- Handwritten ideas not discussed during the meeting:
- "Be prepared to respond flexibly to community initiatives."
- Continue holding booths at related events to help validate the values. Ideas: Farm fair? Green building conference? Farmers markets?
- Give out annual awards to individuals or organizations that promoted/advanced the mission. Get maximum media coverage.
- "What can the common man" do to participate? Join TPL? Contribute $5?"
- Create K–12 educational curriculum for teachers to implement in the classroom.
- Provide funding for hands-on work projects to increase impact.
- Provide equipment, tools, and storage for projects.

6. Acknowledge and honor important resources that can't be mapped.

Ideas shared during the group discussion:

- Mapping can objectify resources and places and is therefore a limiting exercise. Hawaiian perspective accommodates more subjectivity as the spirit of values transcends geographic categorization and all resources should get attention. Acknowledge this at the outset in materials related to the Greenprint.
- Handwritten ideas not discussed during the meeting:
- Engage specific communities where you know there are land conservation and ocean protection struggles (e.g., Waiʻanae)
- "Give examples of moʻolelo reflected in landscapes to show how personal experience of an area makes it valuable to people."
- Greenprint materials should be designed so that they can be reproduced clearly in black and white to share in all groups and lower costs.

7. Additional action step ideas

Ideas shared during the group discussion:

- Take maps to community level (such as individual ahupua'a or moku) to empower individuals and communities. The Greenprint at this scale may assist when they review development plans, sustainable community plans, etc. Each community to see what they have, unify around what to protect.
- Handwritten ideas not discussed during the meeting:
- Were military base lands included in prioritization? "I didn't see red spots on areas where installations are situated."
- "I'm concerned about the unintended consequences of this mapping project—that is, areas not red are "greenlighted" for development. A lot of caution is needed in presenting these maps. Sometimes people don't know how much we value something until it is threatened. There is a focus on preserving—and I would like to see more focus on enhancement and restoration. Similar to the approach used when designating critical habitat for endangered species. It seems that this might have been here in terms of beach access; I hope it is done for all areas of interest."
- At the conclusion of the meeting both Laura and Koa offered brief remarks. Laura thanked everyone for sharing ideas. She explained that the project is not over, as the maps and action plan will continue to be refined based on feedback from community members. She said that she will be in touch about next steps, and she asked participants who haven't looked at the maps yet to please do so and let us know if they have additional feedback (poster maps were on display before and after the meeting). Koa mentioned that the composite map is just one of many aspects of this project and that she is most excited about the dynamic mapping site and how web users can experience the maps for each value, which we will be sharing with those who are interested.

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OHA