

QUESTIONS & ANSWERS

NPS Petition to Designate a Water Management Area for Groundwater

I've been hearing a lot about the National Park Service and water issues in Kona. What's going on?

On September 13, 2013, Kaloko-Honokōhau National Historical Park, a unit of the National Park System, formally petitioned the State of Hawaii Commission on Water Resource Management (State Water Commission) to designate the Keauhou Aquifer of North Kona on Hawai'i Island as a state Water Management Area for groundwater. The location of the park and a copy of the petition are available on the park's website: www.nps.gov/kaho

What is the State Water Commission?

The State Water Commission administers the State Water Code, which was adopted by the 1987 Hawai'i State Legislature. The State Water Commission's general mission is to protect and enhance the water resources of the State of Hawai'i through wise and responsible management.

There are a total of seven members on the State Water Commission. Two are ex-officio (by virtue of office) members and five are appointed by the Governor from lists submitted by a nominating committee, and are subject to confirmation by the State Senate.

The Hawai'i Supreme Court has held that "*the constitution designates the Commission as the primary guardian of public rights under the [state water resources] trust.*"

What is the National Park Service?

The National Park Service is a federal agency. The Organic Act of 1916 established the National Park Service. "...to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations." It is the National Park Service's duty to preserve and protect the land it manages – this includes water resources.

What is Kaloko-Honokōhau National Historical Park and why does it care about water resources?

In 1974, a Federal Advisory Commission comprised of concerned and passionate Native Hawaiians detailed the unique and special resources of an area in North Kona in the "Spirit Report." They were impressed by the unique and precious natural and cultural resources of this area and transmitted their findings and recommendations to the U.S. Congress, recommending that Congress designate this area as a National Park to preserve and protect the land, water, and resources in perpetuity.

As a result of the Spirit Report and the Federal Advisory Commission's recommendation, Kaloko-Honokōhau National Historical Park was established as a unit of the National Park System in 1978 with a mission to provide a center for the preservation, interpretation, and perpetuation of traditional Native Hawaiian activities and culture, and to demonstrate historic land use patterns as well as to provide a needed resource for the education, enjoyment, and appreciation of such traditional Native Hawaiian activities and culture by local residents and visitors. More information about the Advisory Commission, the establishment of the park, and the Spirit Report can be accessed by watching this video: <https://www.youtube.com/watch?v=tsqe0eDK-NY>.

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The park's enabling legislation also states that the park may and will enter into agreements with other governmental entities and private landowners to establish adequate controls on air and water quality and the scenic and esthetic values of the surrounding land and water areas. It was also directed that in consulting with and entering into any such agreements, the park shall to the maximum extent feasible utilize the traditional Native Hawaiian ahupua'a concept of land and water management: www.nps.gov/kaho/parkmgmt/index.htm.

Because the park was established for the reasons detailed above, it is the park's responsibility and mission to find ways to protect the biocultural resources including the quantity and quality of fresh water following makua to makai for future generations.

What is the Keauhou Aquifer System?

An aquifer is a geological formation that can store and transmit water to wells, springs, streams, etc. The Keauhou Aquifer System, and all other aquifer systems in Hawai'i, was delineated by the State Water Commission for general planning purposes. The administrative boundaries of these water management units are based upon surface geologic and topographic features. The Keauhou Aquifer System encompasses several ahupua'a, and extends approximately from Makalawena to Keauhou and up to the summit of Hualalai on the island of Hawai'i. This aquifer system is vulnerable to both saltwater intrusion and contamination from the surface.

What is a state Water Management Area?

Water Management Areas are geographic areas that have been designated pursuant to the State Water Code as requiring management of the ground or surface water resource. In these management units, the State Water Commission establishes administrative control over the withdrawals and diversions of ground and surface waters as a first step toward ensuring reasonable-beneficial use of the water resources in the public interest.

How does a state Water Management Area ensure water is managed in the public's interest?

Unlike land, water in Hawai'i is not privately owned; by legal precedent and state Constitutional provisions, water is held to be a Public Trust – that is, the state government manages the use of water to ensure its use is in the public's interest.

What are Public Trust uses of water?

The Hawai'i Supreme Court has specified that Public Trust uses of water include the domestic needs of the general public, environmental protection, traditional and customary uses of Native Hawaiians, and the rights to water of the Department of Hawaiian Home Lands. Public Trust uses of water are to have priority over private commercial uses of water.

How does one designate a Water Management Area for groundwater?

A Water Management Area can be established by petition and designation or by recommendation of the chairperson of the State Water Commission. In order to designate a state Water Management Area by petition, someone (person, organization, governmental agency, etc.) must file a petition with the State Water Commission.

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What is a petition to designate a state Water Management Area?

A petition for designation is an administrative document that describes why it is important for the State Water Commission to identify an area for active management of water resources. All areas designated since passage of the State Water Code have occurred in response to a petition. In at least one case, on the island of Moloka'i, the petition was literally a document with the signatures of residents.

When is a state Water Management Area designated?

The State Water Code requires the State Water Commission to designate a Water Management Area when a resource is or may be threatened. As additional guidance for groundwater, the Water Code lists eight supplemental criteria that if met, must lead to designation.

What is the process of designation?

If, after receiving a petition, the chairperson of the State Water Commission decides to continue the process, the Water Commission must hold a public hearing near the area proposed for designation. The State Water Commission may conduct scientific investigations, and then issue Findings of Fact and a decision on whether or not to designate.

What other state Water Management Areas exist?

There are ten other state Water Management Areas for groundwater in Hawai'i: all but one of the aquifer systems on the Island of O'ahu, all of the Island of Moloka'i, and the 'Iao Aquifer System on Maui.

Why did the National Park Service file a petition?

The National Park Service filed a petition to seek the state's assistance in protecting non-consumptive Public Trust uses of fresh groundwater in and around Kaloko-Honokōhau National Historical Park. These uses include water for fish and wildlife and Native Hawaiian traditional and customary practices. The National Park Service filed the petition because our mission requires us to proactively manage to prevent impairment of the resources we are entrusted to protect.

Community input is needed to identify areas outside of the park where groundwater discharge should be preserved for the benefit of future generations. The National Park Service believes that the management framework that is put in place in designated areas would provide the public the opportunity to play an active role in this determination.

What standing or grounds does the park have to file a petition for a Water Management Area?

The National Park Service is a landowner within the Keauhou Aquifer System. The National Park Service's mission requires park management to prevent impairment of resources and the park's mission and the park's enabling legislation also mandate that we preserve and protect park resources and ensure high water quality. To this end, the park decided it was necessary to ask the State of Hawai'i to designate the Keauhou Aquifer System as a state Water Management Area for groundwater.

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The National Park contains three traditional Hawaiian fishponds, over 185 anchialine pools, and 596 acres of marine, intertidal and coral reef habitat. These resources provide habitat for rare native and culturally important fish and wildlife, including species protected under the Endangered Species Act. These precious park resources, as well as traditional and customary practices, are dependent on the continued flow of ample, fresh water from mauka to makai.

Others in the area with an interest in Public Trust uses of water, such as individuals and families who exercise traditional and customary Native Hawaiian practices related to water, may also have standing to file a petition.

What difference does it make if less fresh water goes into the ocean and fishponds?

Freshwater discharge supports fisheries, tourism, biocultural landscapes, subsistence, and Public Trust uses of water by supporting the ecosystems on which these activities rely. These resources are both legally protected and essential to the lives and livelihoods of all residents of Kona.

What Hawaiian cultural practices could be affected by reduced water quality and quantity in the park?

Cultural practitioners and visitors to the park can collect near shore resources and fish. We are also working towards restoring Kaloko Fishpond to a functioning traditional fishpond. We have not conducted formal surveys about how people use resources in the park because there are prohibitions about the National Park Service conducting surveys, and we try to be respectful of visitors while they conduct their practices.

Overall, the gathering of near shore resources such as *limu*, *ōpae* and fish, for subsistence, cultural, and religious purposes, and the harvesting of fish such as *‘ama ‘ama* from Kaloko Fishpond, could be impacted by changes in salinity or the amount of freshwater discharge. Similar impacts can be expected along the Kona Coast without additional protections.

How long has the National Park Service been studying the water resources of Kaloko-Honokōhau?

The NPS has been funding research to better understand water resources and the cultural and natural resources that depend upon fresh water in Kaloko-Honokōhau for over 20 years.

How are groundwater levels and salinity monitored in Kaloko-Honokōhau National Historical Park?

In 1996, three shallow observation wells were drilled in the Park in collaboration with the U.S. Geological Survey. Water levels and water quality in the shallow coastal portion of the Keauhou Aquifer System can be measured through these wells. Anyone with a valid research permit may access the wells.

The U.S. Geological Survey has accessed these wells many times since 1996 and their data is available online through the National Water Information System at <http://waterdata.usgs.gov/nwis>. All of the data on this website for the Park's three observation wells were provided by the NPS to the Commission on Water Resource Management in January, 2013.

In 2007, the NPS began a program to continuously measure groundwater levels and salinity in the Park's observation wells using automated recording instruments. Continuous data

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collected under this program from 2007 to January, 2012 were processed for quality assurance/quality control by the U.S. Geological Survey and provided by the NPS to the Commission in January, 2013. These data are available online at <https://irma.nps.gov/App/Reference/Profile/2193295>. The NPS continues to collaborate with the U.S. Geological Survey to process and distribute monitoring data from the Park's observation wells.

The NPS has also implemented an anchialine pool monitoring protocol to assess the status and trends over time in the abundance of anchialine pool fauna; the protocol includes the collection of salinity and other water-quality data and these data are available online at <https://irma.nps.gov/App/Reference/Profile/2192753>.

What is sustainable yield?

Sustainable yield is a maximum allowable pumping rate. The State Water Code defines sustainable yield as “*the maximum rate at which water may be withdrawn from a water source without impairing the utility or quality of the water source as determined by the Commission*” (HRS §174C-3). Staff of the State Water Commission determine this number and approve pumping wells until this upper limit has been reached.

Why is sustainable yield important in the designation of a Water Management Area?

The State Water Code requires the State Water Commission to consider whether authorized planned use may cause withdrawals to reach 90% of the sustainable yield as one of eight criteria that must be considered in designating a Water Management Area for groundwater (HRS §174C-44).

The sustainable yield is also important in designating the Keauhou Aquifer System because the method used to calculate the sustainable yield ignores actual well locations and does not explicitly consider the impacts of reducing groundwater discharge on traditional and customary Native Hawaiian rights and practices and other public trust resources along the Kona Coast.

What is the sustainable yield for the Keauhou Aquifer?

In 1990, the State Water Commission set the sustainable yield for the Keauhou Aquifer System at 38 million gallons per day based upon the estimate that groundwater recharge to the aquifer system was 87 million gallons per day. The aquifer system is recharged mainly by rainfall that has percolated through the ground. If pumping is limited to the sustainable yield in the Keauhou Aquifer System, over half of groundwater recharge will continue to flow to the coast to minimize saltwater intrusion if wells are equally distributed within the aquifer system.

What is current water use in the Keauhou Aquifer System?

The most recent estimate provided by the State Water Commission indicates that groundwater withdrawals from the aquifer system average about 14 million gallons per day, or about 37% of the sustainable yield. According to the Hawai'i County Department of Water Supply, water consumption in North Kona is 1000 gallons per day per single-family residential unit – 2.5 times higher than other areas of the county.

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What is future water demand in the Keauhou Aquifer System?

There is a wide range of estimates of future water demand for the Keauhou Aquifer System. One estimate that future demand for groundwater will exceed 400% of the current sustainable yield under already approved zoning comes from the 2010 Hawai'i County Water Use and Development Plan update, which was approved by the State Water Commission in December 2011. However, the 2010 Water Use and Development Plan also estimated that by 2025, water demand in the Keauhou Aquifer System might be as low as 17 million gallons per day based on population growth. The National Park Service petition (Appendix C) estimates that proposed development just around the park will increase water demand in the immediate future to 33 million gallons per day, or 87% of the sustainable yield.

Overall, Hawai'i County Zoning, the Hawai'i County General Plan Land Use Pattern Allocation Guide, the 2008 Kona Community Development Plan, and the 2010 Hawai'i County Water Use and Development Plan all indicate that water demand and urban development will continue to increase in North Kona. The authors of the "Spirit Report" foresaw this situation nearly forty years ago and their vision continues direct the National Park Service to engage the state and the county to enact water quality and quantity protections.

Why did you file NOW? Water use in the Keauhou Aquifer System is way below the sustainable yield and there is no evidence of resource damage – isn't your petition premature?

Large-scale pumping and desalination are proposed within the four ahupua'a where the National Park is located, and limiting pumping to the sustainable yield will not necessarily protect Public Trust resources from saltwater intrusion. The location and depth of pumping wells relative to sensitive cultural and natural resources and future water demand must also be considered.

The latest science also shows that rainfall is declining, drought will be more severe in leeward areas, and sea level is rising – all factors that will affect both Public Trust uses of water and the availability of water for future development.

Water must be reserved for non-consumptive uses, including traditional and customary rights and practices before being allocated to other consumptive uses. It is a proactive approach that will provide everyone greater certainty about where and how much water is available for consumptive uses.

Waiting for adverse effects of water withdrawals to be observed within the park is contradictory to the Organic Act and other laws, rules, and National Park Service policies. Waiting until resources are impaired or until candidate-endangered species become listed as endangered due to habitat degradation, for example, is not a sustainable approach to resource management. The National Park Service is legally mandated to proactively PREVENT impairment. Waiting to see negative impacts and then working to address these impacts is not an option for the National Park Service.

Is the National Park Service trying to stop development and economic growth?

No, the National Park Service is not trying to stop development or economic growth. The National Park Service is obligated to analyze environmental review documents for projects that have the potential to negatively impact or impair nationally significant resources. The National Park Service believes it is possible to have smart, sustainable development with best management

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practices in place that allows for economic growth while protecting the environment and Public Trust uses of water in and around the park.

Will designation of a state Water Management Area impact development, the economy, and tourism?

In a designated Water Management Area, entities desiring to withdraw groundwater will have to apply to the State Water Commission for water use permits. These permit applications are open to public comment and may require a public hearing. These processes can take time and cost additional money for applicants. However, significant economic development has continued on the islands of O‘ahu and Maui after major drinking water sources were designated. Based on the experiences of O‘ahu and Maui, the National Park Service does not believe designation will limit economic growth, but instead allow it to continue in a sustainable manner.

The National Park Service believes that economic growth and water conservation are mutually-reinforcing goals – a sustainable freshwater supply provides safe drinking water and supports fisheries, tourism, biocultural landscapes and subsistence. Protection of Public Trust resources and uses are also consistent with many of the reasons tourists visit and spend money in this area.

Why should the state manage according to the National Park Service’s proactive management policy?

Actually, the Hawai‘i Supreme Court has directed the State Water Commission to apply the precautionary principle in water management, so that when “*there are present or potential threats of serious damage, lack of full scientific certainty should not be a basis for postponing effective measures to prevent environmental degradation.*”

We believe a state Water Management Area will help to prevent impacts before they occur, and will guide development in a sustainable manner. We believe that by acting now, there will also be more opportunities for the State Water Commission and all stakeholders to balance our duty to protect the environment and Native Hawaiian traditional and customary practices with the continued need for water for new homes and businesses in North Kona.

Can a Water Management Area be designated before pumping reaches 90% of the sustainable yield?

Yes, in fact, the entire island of Molokai was designated as a Water Management Area by the State Water Commission in 1992, in spite of a finding that “*none of the eight criteria support designation of the entire island of Molokai as a ground-water management area.*”

The State Water Code requires the State Water Commission to consider whether authorized planned use may cause groundwater withdrawals to reach 90% of the sustainable yield as one of eight criteria that must be considered designating a Water Management Area for groundwater (HRS §174C-44). However, as observed by the Hawai‘i Supreme Court, the Commission has broad discretion to designate Water Management Areas regardless of how many or how few of the criteria are applicable. The Water Code states that “*when it can be reasonably determined ... that the water resources in an area may be threatened by existing or proposed withdrawals or diversions of water*” the State Water Commission shall designate an area a Water Management Area [HRS §174C-41(a)]. The National Park Service petition satisfies this legal standard.

In fact, water use in designated areas is about 43% of the sustainable yield on O‘ahu, and

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about 3% of the sustainable yield on Molokai. It is our understanding that out of the 35 designated aquifer systems in the State of Hawaii, the Iao Aquifer System on Maui is the only system where the state waited until pumping was greater than 90% of the sustainable yield to designate – only about 1 million gallons per day were available for new uses. We are aware that this situation has contributed to the prolonged process for permitting new water uses in the Iao Aquifer, and we believe that planning now, when water in the Keauhou Aquifer System is abundant, will allow the state to accommodate public trust uses of water, water for important public projects, private commercial uses, and the early incorporation of reuse and efficiency measures that benefit all.

Recent data indicates that the sustainable yield might be much higher – would this satisfy the National Park Service’s concerns?

A 2011 U.S. Geological Survey study estimated that average groundwater recharge to the Keauhou Aquifer System between 1916 and 1983 was 75% higher than previously estimated (<http://pubs.usgs.gov/sir/2011/5078/>). However, the same report also found that groundwater recharge was 25% less than previously estimated under drought conditions. The Commission has asked the Survey to update this information using the most recent rainfall data from the University of Hawai‘i. The State Water Commission staff will then recalculate the sustainable yield and publish it in the 2014 Water Resources Protection Plan.

A higher sustainable yield would not satisfy the National Park Service’s concerns because the basic equation used to calculate sustainable yield does not consider actual well distribution, drought, and the water needed to preserve coastal fisheries and wildlife. Therefore, adverse impacts such as saltwater intrusion and species extinction can occur at pumping rates far below the sustainable yield. Saltwater intrusion, or increased salinity in the water, has already occurred in the Keauhou Aquifer System – in the Kahalu‘u wellfield where pumping was only about 15% of the sustainable yield when chlorides exceeded the recommended level for drinking water. This uncertainty is why we believe the time to designate is now.

Applying the precautionary principle as described by the Hawai‘i Supreme Court suggests that the State Water Commission should adopt the most conservative recharge number, such as the recharge that would be available under drought conditions, to recalculate sustainable yield as a starting point for ensuring that the freshwater supply is secure for future generations.

Where can I learn more about development in the area surrounding the Park?

The Kona Community Development Plan (“Mapping the Future: Kona Community Development Plan Volume 1”) is a guide to planned regional development: <http://www.hawaiicountycdp.info/north-and-south-kona-cdp>. Appendix C of the National Park Service petition summarizes the water demand for proposed development around the park. The park’s 1994 General Management Plan provides a guide to future development within the park: www.nps.gov/kaho/parkmgmt/planning.htm.

Does Kona Water Round Table offer any opportunities for taking action on water management?

Yes. The Kona Water Roundtable is an informal public forum to discuss scientific information on the status and use of water resources in Kona and it provides an excellent opportunity for sharing new information. If a state Water Management Area is designated, the Roundtable could continue to help stakeholders and decision-makers make informed decisions on

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water use permits and future well locations.

Are there any other options that could satisfy the National Park Service's water resource concerns?

The National Park Service is not aware of any other legal or administrative tools to regulate the location of water withdrawals and to prevent adverse impacts in undesignated areas. At this time, the National Park Service believes that Public Trust responsibilities to protect and preserve traditional and customary Native Hawaiian rights and practices, and the plants and wildlife protected under the Endangered Species Act, cannot be delegated to ad-hoc groups, and that neither the county nor the state can manage or allocate groundwater to ensure the protection of these public trust uses in an area that has not been officially designated a Water Management Area. With that noted, the National Park Service remains open to considering other options during the time that the Commission is waiting to make its decision.

Where can I find more information about water in Kaloko-Honokōhau National Historical Park?

A comprehensive list of studies supporting the National Park Service petition for designation of the Keauhou Aquifer System as Water Management Area is included in the references section of the petition itself. Since filing the petition in September 2013, the National Park Service has posted a table with links to data and reports on the park website. These documents include wide-ranging lists of scientific studies and data that support the legal standard that water resources in North Kona are threatened by existing and proposed groundwater withdrawals. Both of these documents are available at www.nps.gov/kaho/index.htm.