State of Hawaii
DEPARTMENT OF LAND AND NATURAL RESOURCES
Division of Forestry and Wildlife

February 8, 2008

Chairperson and Members
Board of Land and Natural Resources
State of Hawaii
Honolulu, Hawaii

Land Board Members:

SUBJECT: REQUEST TO CLOSE KAHAUALEA NATURAL AREA RESERVE, ISLAND OF HAWAII, TO THE PUBLIC PURSUANT TO HAR § 13-209-4.5 FOR PUBLIC SAFETY PURPOSES AND AUTHORIZE THE CHAIR TO NEGOTIATE AND SIGN AN AGREEMENT WITH USGS-HVO TO ENSURE EFFECTIVE MONITORING OF THE FLOW

This Board Submittal outlines the status of the lava flow at Kahaualea Natural Area Reserve (NAR), island of Hawaii and requests the Board to ratify the closure of this area to the public, pursuant to HAR § 13-209-4.5 and to authorize the Chair to negotiate and sign and agreement with USGS-HVO to ensure effective monitoring of the lava flow while on State land.

BACKGROUND:

Kīlauea Volcano has been erupting continuously since January 1983. Since July 21, 2007, Kīlauea has been erupting as fissure lava flows from vents on the State lands of Kahaualea NAR. Lava is now erupting from the lower end of the July 21 fissure located at the base of the Kupaianaha shield. Currently, there is no way to predict how long the current activity will continue.

The USGS-HVO website provides updated status reports on the activity of Kīlauea. The January 13, 2008 report provided the following activity summary for the past few months:
"Activity Summary for the past few months: Lava from the 7/21 fissures is probably fed from a shallow magma storage area beneath Pu`u `O`o where it degasses before being erupted. For the first three months, mostly `a`a flows advanced from a 1.6 km (1 miles)-long channel to the northeast. In late October, tube-fed pahoehoe flows developed and, in early November, the east tube produced pahoehoe flows along the south margin that advanced nearly as far to the east as the earlier `a`a flows before stalling. Starting on November 21, Thanksgiving Eve, lava from fissure D bypassed the channel and built a shield over the fissure feeding a channelized lava flow

"to the southeast. Within weeks, lava had partially refilled several ponds in the original 7/21 perched channel which have again been abandoned. Activity is now focused on the TEB and rootless shields to the southeast."

Before the July 21 eruption, public use of Kahaualea was steadily increasing. A hiking trail (known as the Captain's Trail) developed over years of use is widely publicized in visitor publications such as *Hawaii Revealed* and encourages people to use the trail to access Pu'u O'o, the previous eruption source. Over the years, in response to the number of rescues and incidents at Kahaualea, NARS staff have partnered with the Hawaii Fire Department to increase signage and make minor trail improvements to minimize the number of hikers who become lost by going off-trail. In addition, the Department hunting rules provide that the area is open to public hunting seven days a week, year-round.

Due to public safety concerns relating to unprepared visitors attempting to visit an active lava flow and an active volcanic area, the State closed Kahaualea NAR to public access effective July 25, 2007, by legal notice, after discussions with staff from U.S. Geological Survey-Hawaiian Volcano Observatory (USGS-HVO). Since that time, NARS staff has communicated with USGS-HVO staff on a regular basis about the status and condition of the area to confirm that the area continues to pose a safety risk to visitors.

It does not appear that the current eruption is temporary. As a result, the Division requests the Board to ratify the closure initiated July 25, 2007, and to extend it for two years, through July 25, 2009. Should conditions change during the next years so that public access can again be safely restored, the Division will return to the Board to re-open the NAR.

ANALYSIS:

Hawaii Revised Statutes § 195-5 provides that the Department of Land and Natural Resources may make rules governing the use, control and protection of the areas included within the reserve system. Hawaii Administrative Rule § 13-209-4.5 provides:

> The board or its authorized representative, with the approval of the commission, may close or restrict the public use of all or any portion of a natural area reserve for up to two years, when deemed necessary by the commission for the protection of the natural, geological, or cultural resources of the area or the safety and welfare of persons or property, by the posting of appropriate signs indicating the duration, extent, and scope of closure. Closures may be renewed with the approval of the board or its authorized representative and the commission.

The proposed closure is requested for the safety and welfare of the public. The concept of a closure was previously reported to the Natural Area Reserves Commission at its September 10, 2007 meeting, and will be submitted for their approval and determination of necessity at their meeting of February 2-3, 2008.

The Division is seeking approval to close the entire NAR, TMK 311001002 Parcel 2 (16,726 acres), based primarily on information from USGS-HVO. The vent areas and lava channels are

hazardous and conditions can change rapidly including collapse of existing features. Lava flows advancing through vegetation are hazardous and can produce fire and methane explosions that propel chunks of lava and rock several feet in the air. Fume emissions in the area can exceed 2000 tons per day of sulfur dioxide. Downwind exposure to these fumes can be hazardous, and have been known to reach concentrations that can be lethal. Finally, because of previous volcanic activity in Kahaualea in the 1980s and 1990s, the entire NAR is marked by old lava tubes and cracks, now partially covered by vegetation, making the holes and gaps difficult to see and extremely dangerous to anyone venturing off established trails. Based on the current volcanic activity and the known dangers, the Division recommends closing the entire NAR, rather than just a portion.

The Division requests the Board to ratify the closure initiated July 25, 2007 and to extend it for a term of two years, through July 25, 2009, with the possibility of renewal should the current volcanic conditions continue. Should the current conditions change before July 25, 2009, so that public access can be safely accommodated, the Division will return to the Board to remove the closure. The exact duration of the closure is currently uncertain, as it is entirely dependent on the volcanic activity. The Division is concerned about posting a specific date on signage, based upon a belief that visitor publication will then re-publicize that date as a date upon which the NAR will be re-opened, building expectations and creating management problems if the closure needs to be extended. After further discussion with the Attorney General's office and the Division of Conservation and Resources Enforcement (DOCARE), the Division will install signage indicating that the area is *Closed until further notice*, that the area is *Closed through July 25, 2009 with the possibility of continuation depending on conditions*, or other appropriate language indicating the duration of the closure.

Hawaii Revised Statutes § 195-4 authorizes the Department to "cooperate or contract with any federal, state, or county governmental agency, quasi-governmental agency, private organization, or individual in carrying out" the purposes of HRS Chapter 195, establishing the natural area reserves system. USGS-HVO is the lead agency for research on the volcanoes of Hawaii, the maintenance of accurate data and visual information, and communication with emergency response officials on lava hazards. The study and monitoring of this volcanic eruption is of high importance to public safety, both immediately and over the long-term, to understand volcanic processes. The development of a Memorandum of Understanding, or similar document, with USGS-HVO would enhance effective monitoring and management of the current eruption while on State land. Authorizing the Chairperson to negotiate and sign such an agreement would streamline its implementation.

RECOMMENDATION:

That the Board

1) ratify the closure initiated July 25, 2007 and extend it for a term of two years, through July 25, 2009, and
2) authorize the Chairperson to negotiate and sign an agreement with USGS-Hawaiian Volcano Observatory to monitor and study the lava flow on State lands in the vicinity of the current eruption site.

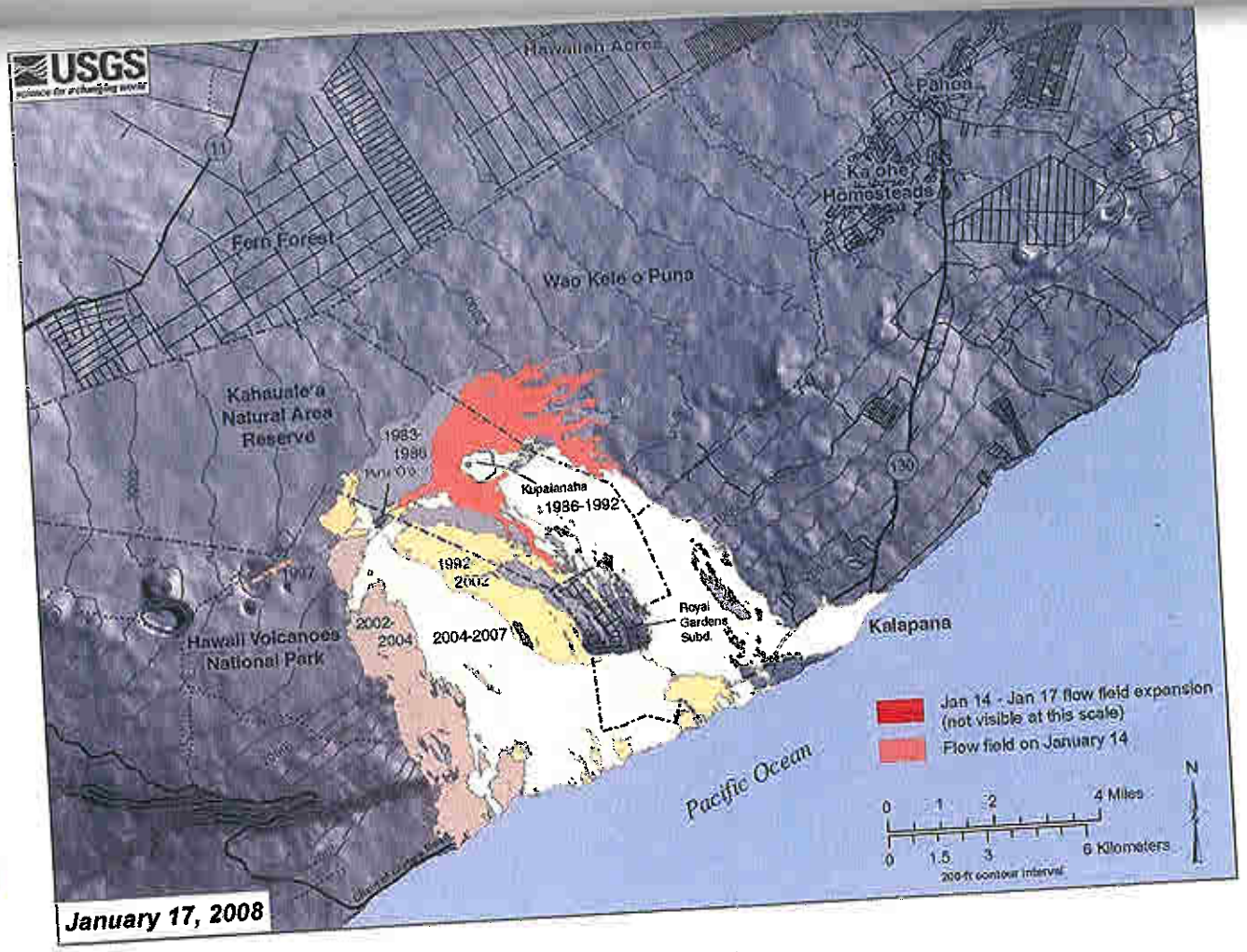
Respectfully submitted,

PAUL J. CONRY
Administrator

APPROVED FOR SUBMITTAL:

LAURA H. THIELEN, Chairperson

Attachment: Map of proposed closure area



January 17, 2008