

DAVID Y. IGE  
GOVERNOR OF  
HAWAII



**STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES**

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**Testimony of  
SUZANNE D. CASE  
Chairperson**

**Before the Senate Committee on  
ECONOMIC DEVELOPMENT, ENVIRONMENT, AND TECHNOLOGY**

**Wednesday, March 16, 2016  
1:20 PM  
State Capitol, Conference Room 414**

**In consideration of  
HOUSE BILL 2160, HOUSE DRAFT 1  
RELATING TO LIGHT POLLUTION**

House Bill 2160, House Draft 1 proposes to establish a dark night skies protection advisory committee to assist the Department of Business, Economic Development, and Tourism in developing a dark night skies protection strategy. **The Department of Land and Natural Resources (Department) supports this bill.**

Artificial lighting reduces the natural dark sky environment and directly impacts biological resources of the islands by altering wildlife behavior. Marine birds and sea turtles in Hawaii, some of which are endangered or threatened, are particularly sensitive to artificial light, attracting fledgling birds and hatchling turtles, which become disoriented and are frequently injured or killed, impacting their populations. There are many documented cases of night lighting in Hawaii attracting and killing coastal and pelagic birds and turtles every year. Newell's shearwaters and Dark-rumped petrels are particularly vulnerable, and research indicates that artificial night lighting is a major contributor to their respective population declines.

Additionally, dark night skies hold important cultural, astronomical, and tourism-related values, which are all negatively impacted as a result of artificial lighting. Excess artificial lighting also increases energy consumption, which contributes to wasted fossil fuel resources and exacerbates global climate change.

The committee would, among other things, examine issues related to artificial lighting and develop recommendations to reduce the negative impacts of artificial lighting on natural and cultural resources, and examine economic and other tangential impacts.

The Department appreciates the opportunity to provide these comments.

**SUZANNE D. CASE**  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT

**KEKOA KALUHIWA**  
FIRST DEPUTY

**JEFFREY T. PEARSON, P.E.**  
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
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LAND  
STATE PARKS



**DEPARTMENT OF BUSINESS,  
ECONOMIC DEVELOPMENT & TOURISM**

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Statement of  
**LUIS P. SALAVERIA**  
**Director**  
Department of Business, Economic Development & Tourism  
before the  
**SENATE COMMITTEE ON ECONOMIC DEVELOPMENT,  
ENVIRONMENT, AND TECHNOLOGY**

Wednesday, March 16, 2016  
1:20 p.m.  
State Capitol, Conference Room 414

in consideration of  
**HB 2160, HD1**  
**RELATING TO LIGHT POLLUTION.**

Chair Wakai, Vice Chair Slom, and Members of the Committee. The Department of Business, Economic Development and Tourism supports the intent of this bill to establish an advisory committee to assist DBEDT in developing and implementing a statewide dark skies protection strategy.

A Starlight Reserve Committee was originally established (through Act 161, SLH 2009) to develop and help implement a statewide strategy to reduce nighttime light pollution which, in turn, will help preserve Hawaii's dark skies for astronomy, protect endangered species, improve human health, and reduce nighttime energy consumption.

Although this Committee (which terminated on June 30, 2015) was successful in developing and promoting legislation (Act 287, SLH 2012) that addresses appropriate temperature and shielding for State light fixtures, a more comprehensive strategy coordinating State laws with county, federal, military, and private sector lighting practices and regulations is needed to help preserve Hawaii's dark nighttime skies. We believe the proposed Dark Skies Advisory Committee could play a strategic role in achieving this goal.

We support this bill provided that its passage does not replace or adversely impact priorities indicated in our Executive Budget.

Thank you for the opportunity to testify on this measure.



# UNIVERSITY OF HAWAII SYSTEM

## Legislative Testimony

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Testimony Presented Before the  
Senate Committee on Economic Development, Environment, and Technology  
Wednesday, March 16, 2016 at 1:20 p.m.

By  
Robert Bley-Vroman, Chancellor  
And  
Richard Wainscoat, Astronomer  
Roy Gal, Assistant Astronomer/Outreach Coordinator/UH NGO  
University of Hawai'i at Mānoa

### HB 2160 HD1 – RELATING TO LIGHT POLLUTION

Chair Wakai, Vice Chair Slom, and members of the Committee:

The University of Hawai'i strongly supports HB 2160 HD1 which establishes of a dark skies advisory committee. Dark night skies are a tremendously important natural, cultural, scientific, educational, and economic resource for Hawai'i. But the dark night sky is under increased threat from urban lighting.

Maunakea observatory has one of the darkest skies in the world, thanks to over 25 years of careful lighting on the Island of Hawai'i. The sky at Haleakalā observatory is less dark, partly due to less stringent lighting rules on Maui, and also due to its proximity to Honolulu.

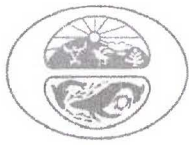
Dark skies are vitally important for Hawai'i's two major astronomical observatories. These are among the best astronomical sites on the planet. If the sky is allowed to become bright over these observatories, the telescopes will lose their ability to see faint objects. On Haleakalā, the University of Hawai'i is engaged in a NASA sponsored effort to search the sky for dangerous asteroids. The aim is to find any dangerous asteroid that may hit Earth early enough that it can be deflected before impact. This search relies heavily on the dark night sky, and it would be significantly weakened if the sky on Maui becomes any brighter.

The advisory committee described in this bill will bring together representatives from the state, the counties and the public, and will a valuable forum for exchanging information regarding nighttime lighting and for preservation of the dark night sky.

Light Emitting Diodes are rapidly being introduced to replace older forms of lighting. These offer some energy benefits, but their blue light is harmful to astronomy and to endangered species such as birds and turtles. The committee described in this bill will be able to provide excellent advice on limiting blue light, thereby preventing costly mistakes. Kua'i is a prime example of a location where many expensive light

replacements have had to be done because of the impact of unshielded lights on endangered birds.

Light travels great distances, and lighting is not simply a county matter. It is important to form this state committee to address lighting issues across the state, and the preservation of dark skies across all of Hawai'i.



Conservation Council  
for Hawai'i

*Hawai'i's voice for wildlife*  
Kō Hawai'i / leo no nā holoholona lōhiu

Testimony Submitted to the Senate Committee on Economic Development,  
Environment, and Technology

Hearing: Wednesday, March 16, 2016 1:20 pm  
Conference Room 414

In Support of HB 2160 HD 1 Relating to Light Pollution

Chair Wakai, Vice Chair Slom, and Members of the Committee.

Aloha. Conservation Council for Hawai'i supports HB 2160 HD 1, which establishes a dark night skies protection advisory committee to assist DBEDT in the development of a statewide dark night skies protection strategy to preserve dark night skies and reduce light pollution.

Artificial lighting negatively affects wildlife, including nesting green sea turtles and hatchlings (a threatened species), nesting endangered hawksbill sea turtles and their hatchlings. Lights in coastal areas may discourage female sea turtles from nesting on certain beaches, causing them to turn away seeking another beach and expending unnecessary energy to do so. Artificial lights also disorient hatchlings as they scramble to the ocean. The lights may cause hatchlings to head mauka toward the bright lights instead of makai, making them vulnerable to predators.

Artificial lights also disorient adult seabirds returning to their nests from the sea at night after a day of hunting, and fledging seabirds on their first flight to the sea from mauka nests. Each year, I see dead wedge-tailed shearwaters on the Honolulu side of the Wilson and Pali Tunnels. There are probably dead birds along the H-3 as well. These birds are probably disoriented by the bright tunnel lights and fallout after colliding with vegetation or manmade structures, such as the tunnels.

We recommend that wildlife biologists familiar with the impacts of lights on sea turtles and seabirds sit on the task force.

As an aside, the lights at convenience stores and gas stations in Honolulu are particularly bright and annoying.

Please support HB 2160 HD 1. Mahalo nui loa for the opportunity to testify.

Marjorie Ziegler

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March 11, 2016

Senator Glenn Wakai, Chair  
Senator Sam Slom, Vice Chair  
House Committee on Economic Development,  
Environment, and Technology

**Comments and Proposed Amendments regarding HB 2160, HD1 Relating to Light Pollution. (Establishes a Dark Night Skies Protection Advisory Committee to assist DBEDT in the development of a Statewide Dark Night Skies Protection Strategy to preserve dark night skies and reduce light pollution.)**

**EET Hearing: Wednesday, March 16, 2016, 1:20 p.m., Conf. Room 414**

The Land Use Research Foundation of Hawaii (LURF) is a private, non-profit research and trade association whose members include major Hawaii landowners, developers and a utility company. LURF's mission is to advocate for reasonable, rational and equitable land use planning, legislation and regulations that encourage well-planned economic growth and development, while safeguarding Hawaii's significant natural and cultural resources, and public health and safety.

LURF supports the intent of this measure; provides the following **comments; and respectfully requests an amendment to HB 2160, HD1, to specifically include on the Dark Night Skies Protection Advisory Committee (Proposed Committee) representatives from Hawaii's largest industries that would be directly affected by, and could provide valuable input for the statewide dark night skies protection strategy – tourism, the military, business and shopping centers, agriculture and construction industries.**

**HB 2160.** This measure requires the Department of Business, and Economic Development, and Tourism (DBEDT) to develop a statewide dark night skies protection strategy to preserve dark night skies and reduce light pollution, and proposes to establish the Proposed Committee to assist DBEDT. The current bill specifically identifies Proposed Committee members that can provide very valuable input.

However, the bill does not specifically include representatives from Hawaii's largest industries and operations that would be directly affected by the statewide dark night skies protection strategy, and who could provide valuable input – tourism, the military, business and shopping centers, agriculture and construction (in Honolulu, nighttime Rail construction will become more prevalent in coming years).

**LURF's Comments and Position.** LURF supports the purpose of HB 2160, HD1, which is to develop and help implement a statewide coordinated strategy to preserve the dark night skies in Hawaii, by reduce nighttime light pollution which, in turn, will help preserve Hawaii's dark skies for astronomy, to protect endangered species, address human health concerns relating to "shift work," and reduce nighttime energy consumption.

LURF also agrees with the prior testimony of DBEDT Director Luis Salaveria, which recognizes that coordination with other major stakeholders is needed to develop the statewide Light Pollution strategy: "*a more comprehensive strategy coordinating State laws with county, federal, military, and private sector lighting practices and regulations is needed to help preserve Hawaii's dark nighttime skies. We believe the proposed Dark Skies Advisory Committee could play a strategic role in achieving this goal.*" (emphasis added)

**Conclusion.** LURF supports the intent and purpose of HB 2160, HD1, however, LURF cannot fully support this measure in its current form. LURF respectfully recommends that this bill be **amended** to expand the Proposed Committee by specifically naming representatives from Hawaii's largest industries and operations that would be directly affected by the statewide dark night skies protection strategy and that could provide valuable input – tourism, the military, business and shopping centers, agriculture and construction.

Thank you for the opportunity to present our comments regarding this measure.

**Testimony Related to  
House Bill 2160 HD1  
RELATING TO LIGHT POLLUTION**

**Presented before the  
Senate Committee on Economic Development, Environment and Technology**

**The Twenty-Eighth Legislature**

**March 16, 2016**

**by**

**Richard J. Wainscoat**

Chair Wakai, Vice-Chair Slom and members of the Committee. My name is Richard Wainscoat and I am submitting this testimony as an individual in strong support of the establishment of a committee to address light pollution problems in Hawaii.

Dark night skies are a tremendously important natural, cultural, scientific, educational and economic resource for Hawaii. But the dark night sky is under increased threat from urban lighting.

Dark skies are vitally important for Hawaii's two major astronomical observatories – Maunakea on the Island of Hawaii, and Haleakala on Maui. These are among the best astronomical sites on the planet. If the sky is allowed to become bright over these observatories, the telescopes will lose their ability to see faint objects.

The advisory committee described in this bill will bring together representatives from the state, the counties and the public, and is a valuable forum for exchanging information regarding nighttime lighting.

A similar committee (for which I was the Chair), called the Starlight Reserve Committee, operated until 2015. The committee dealt with issues such as energy preservation, endangered species, astronomy, public safety and quality of life. All of these are long-term issues.

Lighting is presently undergoing a major transformation. There is a widespread change from traditional forms of lighting, such as incandescent, fluorescent, and high intensity discharge lamps to solid state lighting (light emitting diodes, or LEDs). LEDs offer lower maintenance costs and energy savings. It is particularly important that the light pollution advisory committee enabled by this bill meets and provides advice during this transition period. LED lights have



**Testimony Related to House Bill 2160 HD1**  
**Senate Committee on Economic Development, Environment and Technology**  
**March 16, 2016**  
**Page 2**

higher amounts of blue light, and this blue light is very harmful to astronomy, endangered species, and may also be harmful to human health. Therefore, careful limits on the amount of blue light from LEDs should be put in place.

Light travels tremendous distances at night. For example, Haleakala observatory is affected by lighting in Honolulu. Light does not obey county boundaries — it is important to form a state level committee to address lighting issues and preservation of dark skies across all of Hawaii.

**Testimony of  
JOHN-CARL WATSON**

**Before the Senate Committees on  
ECONOMIC DEVELOPMENT, ENVIRONMENT, AND TECHNOLOGY**

**Wednesday, March 16, 2016  
1:20 PM  
State Capitol, Conference Room 414**

**In consideration of  
HOUSE BILL 2160  
RELATING TO LIGHT POLLUTION**

House Bill 2160 will establish a dark night skies protection advisory committee to assist DEBDT with the development of a statewide night skies protection strategy to reduce light pollution. **I strongly support this bill. Having spent my life on Oahu and Kauai, and having worked in the Northwest Hawaiian Islands for a year, I am well aware of the daunting beauty of dark night skies. The presence of visible stars at night is a well-known source of awe and inspiration for all people. Light pollution from over-lighting and unshielded lights reduces the number of visible stars in the sky. If we want to have future generations look at something other than an ipad screen at night, lets pass this bill and give them stars.**

Mahalo for the opportunity to comment.

**wakai1 - Lilinoe**

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**From:** mailinglist@capitol.hawaii.gov  
**Sent:** Monday, March 14, 2016 5:03 PM  
**To:** EET Testimony  
**Cc:** dylanarm@hawaii.edu  
**Subject:** \*Submitted testimony for HB2160 on Mar 16, 2016 13:20PM\*

**HB2160**

Submitted on: 3/14/2016

Testimony for EET on Mar 16, 2016 13:20PM in Conference Room 414

<b>Submitted By</b>	<b>Organization</b>	<b>Testifier Position</b>	<b>Present at Hearing</b>
Dylan Armstrong	Individual	Support	No

**Comments:**

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