



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Testimony Presented Before the
Senate Committees on Higher Education and
Agriculture and Environment
Monday, March 20, 2017 at 1:45 p.m.

By
Günther Hasinger, Director
And
Richard Wainscoat, Astronomer
Roy Gal, Assistant Astronomer/Outreach Coordinator/UH NGO
Institute for Astronomy
University of Hawai'i at Mānoa

HB 427 HD2 – RELATING TO DARK NIGHT SKIES PROTECTION

Chairs Kahele and Gabbard, Vice Chairs Kidani and Riviere, and members of the committee:

The University of Hawai'i strongly supports the establishment of a dark skies advisory committee via HB 427 HD2.

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 due in part to its close 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 provide a valuable forum for exchanging information regarding nighttime lighting and for preservation of the dark night sky. Please note that it is the University's understanding that the Land Use Commission prefers not to be on this advisory committee.

Light Emitting Diodes (LEDs) 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. Kaua'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. Recent developments related to LEDs include a recommendation by the American Medical Association to limit exposure to blue light at night, new findings that suggest road safety is improved by limiting blue light, and big improvements in energy efficiency in low correlated color temperature LEDs.



DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

No. 1 Capitol District Building, 250 South Hotel Street, 5th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804
Web site: www.hawaii.gov/dbedt

Telephone: (808) 586-2355
Fax: (808) 586-2377

DAVID Y. IGE
GOVERNOR

LUIS P. SALAVERIA
DIRECTOR

MARY ALICE EVANS
DEPUTY DIRECTOR

AMENDED

Statement of
LUIS P. SALAVERIA
Director

Department of Business, Economic Development & Tourism

before the
**SENATE COMMITTEES ON HIGHER EDUCATION
AND
AGRICULTURE AND ENVIRONMENT**

Monday, March 20, 2017
1:45 p.m.
State Capitol, Conference Room 224

in consideration of
HB 427, HD2
RELATING TO DARK NIGHT SKIES PROTECTION.

Chairs Kahele and Gabbard, Vice Chairs Kidani and Riviere, and Members of the Committees. The Department of Business, Economic Development and Tourism **strongly supports** (with one recommended amendment) this Administration bill to establish a Dark Night Skies Protection Advisory Committee to assist the University of Hawaii in developing a statewide dark skies protection strategy.

Light pollution is a statewide issue that requires the cooperation of state and county agencies to develop and help implement a statewide strategy to reduce nighttime light pollution which, in turn, could help preserve Hawaii's dark skies for astronomy, protect endangered species, improve human health, and reduce nighttime energy consumption.

Although Act 287, SLH 2012 was successful in addressing 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 night skies protection advisory committee will play a strategic role in achieving this goal.

We note that this measure recommends adding a member of the Land Use Commission (LUC) to the proposed Dark Night Skies Protection Advisory Committee. The LUC already imposes conditions on projects where night-time lighting is identified as an issue. The proposed Committee may recommend strategies that impact the criteria used by the LUC to determine whether to grant District Boundary Amendments or State Special Permits with conditions. This, in turn, may cause an affected party to ask a Land Use Commissioner serving

on the proposed Committee to recuse himself/herself. It also could impose additional costs to public and private entities seeking regulatory approvals. As such, we recommend that the proposed LUC representative for the Dark Night Skies Protection Advisory Committee be removed from this bill.

DBEDT strongly urges the Senate Committees on Higher Education and on Agriculture and Environment to pass this measure with the proposed amendment.

Thank you for the opportunity to testify on this bill.

DAVID Y. IGE
GOVERNOR OF
HAWAII



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

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

**Testimony of
SUZANNE D. CASE
Chairperson**

**Before the Senate Committees on
HIGHER EDUCATION
and
AGRICULTURE AND ENVIRONMENT**

**Monday, March 20, 2017
1:45 PM
State Capitol, Conference Room 224**

**In consideration of
HOUSE BILL 427, HOUSE DRAFT 2
RELATING TO DARK NIGHT SKIES PROTECTION**

House Bill 427, House Draft 2 proposes to establish a dark night skies protection advisory committee to assist the University of Hawaii in developing a statewide 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 advisory committee would, among other things, examine issues related to artificial lighting and recommend workable solutions to reduce the negative impacts of lighting on natural and cultural resources and other activities.

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
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

Lastly, the Department understands that the Land Use Commission is seeking to be removed as a member of the advisory committee. The Department has no qualms with this request.

Thank you for the opportunity to comment on this measure.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

March 20, 2017
1:45 p.m.
State Capitol, Room 224

H.B. 427, H.D. 2
RELATING TO DARK NIGHT SKIES PROTECTION.

Senate Committee(s) on Higher Education & Agriculture and Environment

The Department of Transportation (DOT) offers **comments** on this bill to establish a dark night skies protection advisory committee to assist the University of Hawaii in the development of a statewide dark night skies protection strategy to preserve dark night skies and reduce light pollution.

The DOT finds its membership on the committee useful to maintain and ensure transportation safety and security are carefully considered and that recommendations by the committee are thoughtful and economically feasible while protecting dark skies. We are optimistic that cooperation, input and consultation from a variety of stakeholders on the advisory committee will not only make the meetings more informative but will also result in more effective, balanced, and practicable recommendations.

Thank you for the opportunity to provide testimony.

Testimony by:
FORD N. FUCHIGAMI
DIRECTOR

Deputy Directors
JADE T. BUTAY
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

IN REPLY REFER TO:

DAVID Y. IGE
Governor

SHAN S. TSUTSUI
Lieutenant Governor

LUIS P. SALAVERIA
Director

MARY ALICE EVANS
Deputy Director



LAND USE COMMISSION
Department of Business, Economic Development & Tourism
State of Hawai'i

DANIEL ORODENKER
Executive Officer

Bert K. Saruwatari
Planner

SCOTT A.K. DERRICKSON AICP
Planner

RILEY K. HAKODA
Chief Clerk/Planner

FRED A. TALON
Drafting Technician

Statement of
Daniel E. Orodenker
Executive Officer
Land Use Commission
Before the
Senate Committee on Higher Education
And
Senate Committee on Agriculture and Environment
Monday March 20, 2017
1:45 PM
State Capitol, Conference Room 224

In consideration of
HB 0427 HD2
RELATING TO DARK NIGHT SKIES PROTECTION

Chairs Kahele and Gabbard, Vice Chairs Kidani and Riviere, and members of the Committees on Higher Education; and, Agriculture and Environment:

The Land Use Commission (LUC) supports the intent of the measure but not the inclusion of a member of the LUC on the advisory committee. The measure would create a dark skies protection advisory committee at the University of Hawai'i to develop a strategy for minimize light pollution of our night skies.

The measure would require an individual who is already volunteering time as a LUC commissioner to spend more volunteer time on an additional advisory committee for which they may or may not have any subject matter expertise, knowledge, or information. The additional workload on top of the considerable time required with the LUC may result in fewer members of the public applying for vacant LUC positions.

The LUC already imposes conditions on projects where the issue of night-time lighting is identified as an issue. The proposed advisory committee may come up with recommendations that impact the criteria that the LUC uses in determining whether to grant District Boundary Amendments or State Special Permits with conditions, this might cause an affected party to ask commissioners serving on such an advisory committee to recuse themselves. Situations like that could affect quorum for LUC operations and impose additional costs to public and private entities seeking regulatory approvals. We respectfully ask that the inclusion of a member of the LUC on the Dark Night Skies Protection advisory committee be removed.

Thank you for the opportunity to testify on this matter.



HB427 HD2
RELATING TO DARK NIGHT SKIES PROTECTION
Senate Committee on Higher Education
Senate Committee on Agriculture and Environment

March 20, 2017

1:45 p.m.

Room 224

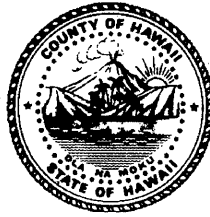
The Office of Hawaiian Affairs (OHA) **SUPPORTS** HB427 HD2. This measure establishes a Dark Night Skies Protection Advisory Committee, to assist the University of Hawai'i in developing a strategy to preserve the dark night skies essential to Native Hawaiian cultural perpetuation and the protection of native wildlife.

The night sky is an important instrument for Native Hawaiians. In Hawaiian culture, stars, planets and the moon predict weather conditions, foretell events in the form of hō'ailona, or omens, and serve as calendar and land markers. The night sky instructs farmers what to plant, fishers what to catch, and open-ocean navigators where to go. As Native Hawaiians continue to reconnect and revive ancient traditions, the integrity of the night sky becomes more and more significant.

Light pollution, particularly in heavily developed areas, has limited the ability of Native Hawaiians to learn about the night sky and use it as their ancestors once did. Moreover, artificial light represents a major threat to some seabirds, which also hold both cultural and ecological significance. For example, bright lights at night can blind and disorient Newell's Shearwater fledglings, resulting in many of these young birds being hit by cars or preyed on by cats and dogs. Establishing a Dark Night Skies Protection Advisory Committee will help the University of Hawai'i defend an important part of the cultural landscape for Native Hawaiians, as well as protect our culturally and ecologically significant seabird species.

Accordingly, OHA urges the Committees to **PASS** HB427 HD2. Mahalo nui loa for the opportunity to testify on this measure.

Harry Kim
Mayor



Wil Okabe
Managing Director

Barbara J. Kossow
Deputy Managing Director

County of Hawai'i

Office of the Mayor

25 Aupuni Street, Suite 2603 • Hilo, Hawai'i 96720 • (808) 961-8211 • Fax (808) 961-6553
KONA: 74-5044 Ane Keohokalole Hwy., Bldg. C • Kailua-Kona, Hawai'i 96740
(808) 323-4444 • Fax (808) 323-4440

March 16, 2017

Senator Kaiali'i Kahele, Chair
Committee on Higher Education
Hawai'i State Capitol
Honolulu, HI 96813

Senator Mike Gabbard, Chair
Committee on Agriculture and Environment
Hawai'i State Capitol
Honolulu, HI 96813

Dear Chairs Kahele and Gabbard, and Members:

**RE: HB 427, HD 2
Relating to Dark Night Skies Protection**

Thank you for this opportunity to comment on HB 427, HD2.

Hawaii County has worked to transition 11,000 County and State street lamps to LED which results in reduced light pollution and 50% reduction (\$1 million annually) in operating energy costs.

Our Department of Research and Development, in partnership with the Department of Public Works Traffic Division, the Department's Energy Program, the Institute for Astronomy, Hawai'i Wildlife Center, and Hawai'i Volcanoes National Park, is promoting friendly night skies through its Dark Sky initiative. This initiative is the outcome of the successful LED streetlight replacement project that installed fully shielded LED lamps with custom designed blue spectrum filters.

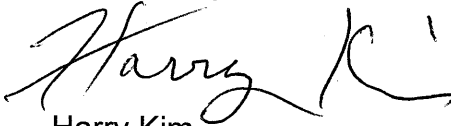
Research has shown that nighttime illumination interferes with migratory bird and nesting turtle activity, in addition to interfering with sleep cycles in humans. The replacement of energy wasting incandescent fixtures with light emitting diodes (LED) saves energy, but the blue light spectrum from most LED fixtures is particularly harmful

Kahele/Gabbard
March 16, 2017
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to the health of wildlife and humans, in addition to interfering with astronomy, stargazing activities, and encroaching on wilderness areas.

So the Dark Sky initiative works to encourage the use of appropriate lighting for the benefit of all.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Harry Kim". The signature is fluid and cursive, with a large initial "H" and a long, sweeping tail.

Harry Kim
Mayor



**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 Higher Education
And Senate Committee on Agriculture and Environment
By the Conservation Council for Hawai'i
Hearing: Monday, March 20, 2017 1:45 pm
Room 224

Support for HB 427 HD 2 Relating to Dark Night Skies Protection

Chair Kahele, Chair Gabbard, Vice Chair Kidani, Vice Chair Riviere, and Members of the Committees,

Aloha. The Conservation Council for Hawai'i supports HB 427 HD 2, which establishes a Dark Night Skies Protection Advisory Committee to assist the University of Hawai'i in developing a statewide dark night skies protection strategy.

Bright lights are harmful to native wildlife:

- * They disorient nesting threatened honu (green sea turtles) and endangered honu'ea (hawksbill sea turtles) coming onto land to lay their eggs, and sea turtle hatchlings as they scramble to the sea and try and avoid being killed by predators.
- * They disorient seabirds returning to their nests to feed their young after hunting in the ocean during the day, and fledgling seabirds on their maiden flights from nests to sea. Hawaiian seabirds negatively impacted by bright lights include the endangered 'ua'u (Hawaiian petrel), threatened 'a'o (Newell's shearwater), and 'ua'u kani (wedge-tailed shearwater).
- * After becoming disoriented by bright lights in their flyways, the birds often collide with utility polls and lines, fall to the ground, and are injured or killed by automobiles or predators. During nesting season, you will see many dead wedge-tailed shearwaters along the Pali and Likelike highways near the tunnel entrances after they become disoriented by the lights and fall out.

Bright lights are also overdone and irritating, especially on O'ahu (note 24-hour large gas stations and food marts along Beretania Street, for example). Please protect our native animals from bright lights. Adopt HB 427 HD 2 and see what the task force recommends.

Mahalo nui loa for the opportunity to testify.

Marjorie Ziegler

Marjorie Ziegler



Telephone/Fax: 808.593.0255 | email: info@conservehi.org | web: www.conservehi.org
P.O. Box 2923 | Honolulu, HI 96802 | Office: 250 Ward Ave., Suite 215 | Honolulu, HI 96814
President: Wayne Tanaka | Vice President: Koalani Kaulukukui | Secretary: Rachel Sprague
Treasurer: Les Welsh | Director: Anne Walton
Executive Director: Marjorie Ziegler | Administrator: Jonnetta Peters



From: mailinglist@capitol.hawaii.gov
Sent: Sunday, March 19, 2017 8:15 AM
To: HRE Testimony
Cc: tampaltin@gmail.com
Subject: Submitted testimony for HB427 on Mar 20, 2017 13:45PM

HB427

Submitted on: 3/19/2017

Testimony for HRE/AEN on Mar 20, 2017 13:45PM in Conference Room 224

Submitted By	Organization	Testifier Position	Present at Hearing
Tamara Paltin	Individual	Comments Only	No

Comments: Please ensure that public safety is taken into consideration

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