



UNIVERSITY OF HAWAII SYSTEM

Legislative Testimony

Written Testimony Presented Before the
Senate Committee on Energy and Environment
Senate Committee on Economic Development and Technology
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by

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and

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SB 1493 – RELATING TO LIGHT POLLUTION

Chairs Gabbard and Fukunaga, and members of the Committees. My name is Richard Wainscoat and I am here today to submit this testimony on behalf of the University of Hawai'i. The University of Hawai'i strongly supports this bill that will require full shielding of new and replacement bright lights in Hawai'i.

Mauna Kea on the island of Hawai'i, and Haleakalā on the island of Maui, are two of the best astronomy sites in the world. Dark night skies are essential for these observatories to continue to operate. However, increasing urban lighting is threatening the dark night skies over these observatories. Light pollution extends well beyond county boundaries; lights from O'ahu have a major and growing impact on Haleakalā, and also affect Mauna Kea. Statewide legislation is needed to protect the observatories.

Astronomy in Hawai'i has a major economic impact. The present economic impact of astronomy is estimated to be \$150 to \$200 million per year.

Full shielding of lights is one of the most important techniques for protecting astronomical observatories from light pollution. Light emitted from poorly shielded fixtures at small angles above the horizontal travels enormous distances through the atmosphere, and is a major contributor to light pollution — it increases sky glow at remote locations, making it difficult or impossible to see faint objects. Fully shielded light fixtures emit no light above the horizontal, and therefore have much less impact on remote locations.

Full shielding also reduces glare, which is a very important safety factor, particularly for older drivers, and greatly reduces the impact of nighttime lighting on species that are affected by light at night, including endangered birds and turtles.

The University recommends that the scope of the bill be extended to cover all lighting in Hawai'i. The present wording mentions only private and business lighting. Poorly designed and improperly shielded lights continue to be installed by government agencies, and a quick inventory of nighttime lighting shows that some of the worst lighting is county and state lighting.

The University recommends that an exemption be added that allows a small amount of direct uplight from recreational lighting when use of fully shielded lighting is impractical. Illumination of some recreational facilities, such as Aloha Stadium, would be very difficult using fully shielded fixtures; this exemption will result in long-term reduction in light pollution produced by facilities such as Aloha Stadium. When lights need to be replaced, they will be replaced by new more energy efficient and better shielded fixtures, resulting in energy savings of approximately 40%.