Reducing urban glow Bundaberg

Turtle friendly lighting guide for **business premises**

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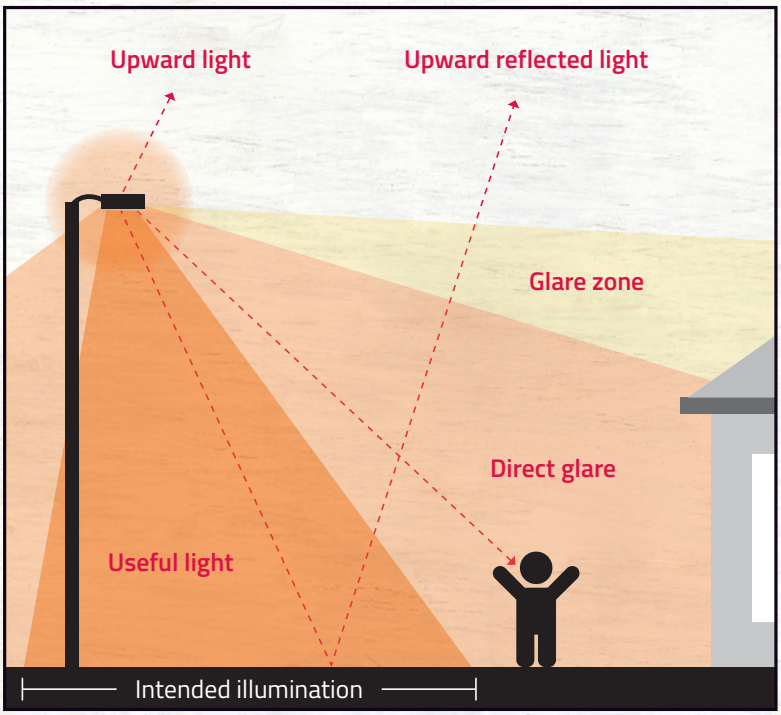
How to play your part as a business

Tips

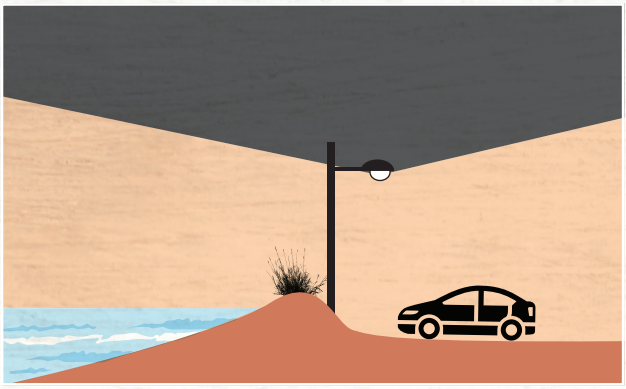
- **Use LEDs and compact fluorescents with lower temperatures and warmer colors**. Lights with lower color temperatures (2700–3000 K) are called "warm colors" (yellowish), while color temperatures over 5000 K are called "cool colors" (bluish).
- **Use dimmers, motion sensors, or timers** on outdoor lighting.
- **Use outdoor lighting fixtures that shield the light source** to minimize glare and light trespass.
- **Turn off unnecessary indoor lighting**, particularly in empty buildings at night.
- **Maintain as much overnight dark** as possible.
- In all cases, care should be taken **not to brightly illuminate buildings and other large objects** visible from the nesting beach.
- **Floodlighting should only be used where absolutely necessary** for crowd control or other high-usage areas.
- **Linear strip lighting** mounted at foot level along walking paths or stairways is preferred over elevated lighting.
- All fixtures should be positioned so that vegetation, topography, or buildings s**creen the light from the beach**, or the fixture should be equipped with shields so that light sources are not visible from the beach.
- **Red or amber LED fixtures** are preferred over high intensity fixtures for applications near nesting beaches.

Street light glow

Street lights are intended to illuminate the street below, but their light is often poorly directed causing undesirable brightness and increasing light pollution.

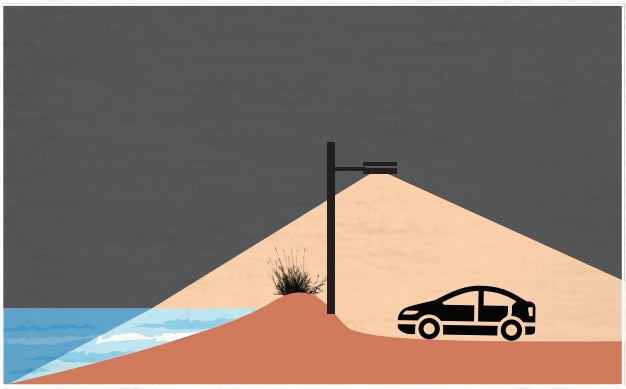


Parking lot lighting



Poor

Poorly directed parking lot lighting can cause problems on sea turtle nesting beaches.

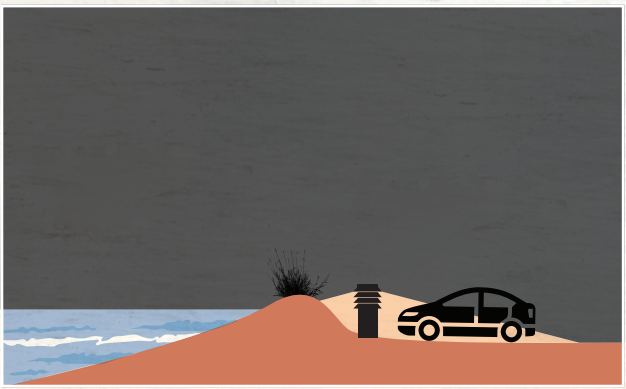


Good

Fixtures with 90° cutoff angles can reduce the amount of stray light reaching the beach.

Better

Fully hooded flood lights can direct light accurately and reduce stray light even more

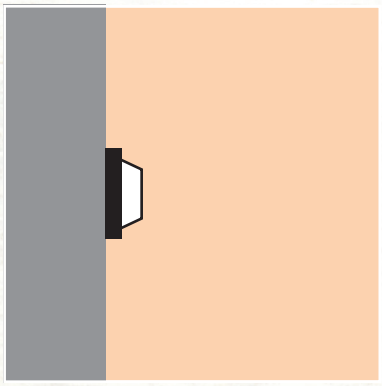


Best

Low set lamp posts direct the light to the intended illumination area without glare or upward light

Diagrams of common lighting fixtures showing mounting position, light distribution and overall suitability for use near turtle nesting beaches.

For purposes of recommending suitable mounting distances from nesting beaches, the crest of the primary dune is considered to be the landward limit of the beach.
Fixtures are assessed for their suitability in minimising direct and indirect lighting of the beach. For all fixtures, glowing portions or luminaries (including reflectors and globes) should not be visible from the turtle nesting beach.

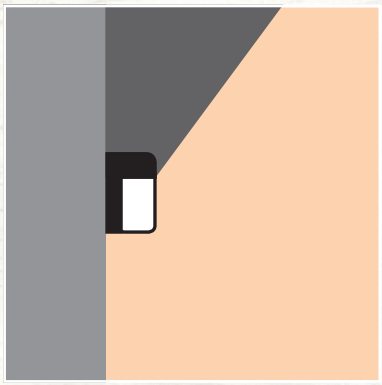


Wall mounted area lighting

Mounting suitability
Poor. Very poor when mounted on upper stories.

Directional suitability
Poor.

Overall suitability
Poor, not suitable for the beach sides of buildings.



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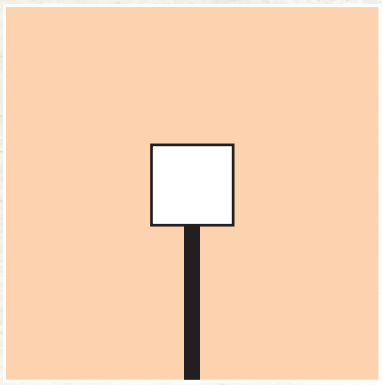


Decorative cube light

Mounting suitability
Fair if mounted at heights lower then 1.8 metres.
Poor if mounted higher.

Directional suitability
Very poor.

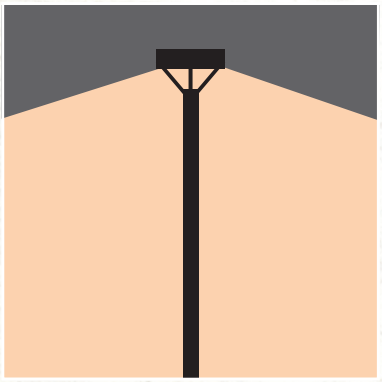
Overall suitability
Very poor. This fixture is difficult to shield and should not be used near turtle nesting beaches.

Pole mounted floodlighting with full visor

Mounting suitability
Good if directed downward and away from the beach.

Directional suitability
Good.

Overall suitability
Good if directed downward and away from the turtle nesting beach and if light does not illuminate objects visible from the beach.



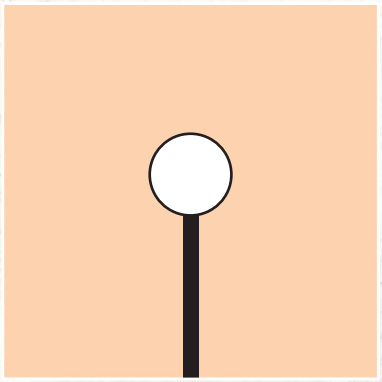
Pole top mounted cutoff lighting, shoe box fixture

Mounting suitability

Good to poor, depending on mounting height. Mounting height should be no more than 4.5 metres within 100 metres of a turtle nesting beach.

Directional suitability
Fair to good, as determined by reflectors.

Overall suitability
Fair to good when mounting heights are low.

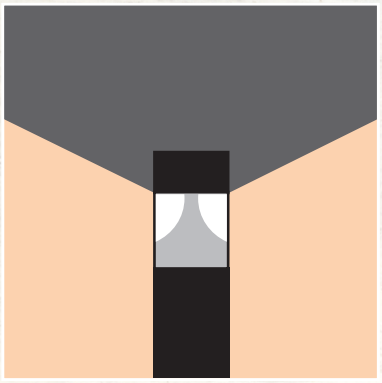


Decorative globe light

Mounting suitability
Fair if mounted at heights lower than 1.8 metres, poor if mounted higher.

Directional suitability
Very poor.

Overall suitability
Very poor. This fixture is difficult to shield and should not be used near turtle nesting beaches.

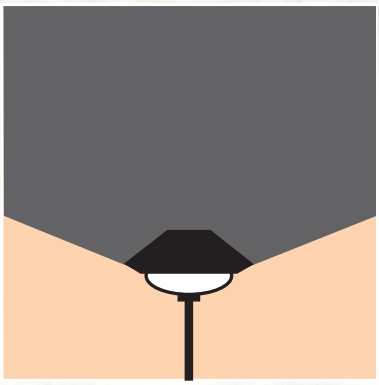


Lighting bollards with hidden lamp

Mounting suitability
Good if mounting height is near 1 metre.

Directional suitability
Poor to fair.

Overall suitability
Fair, good if additional shields on the beach side of the fixture are used.

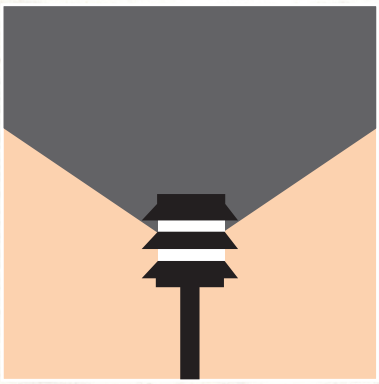


Low height (short) mushroom lighting

Mounting suitability
Good if mounted at foot level.

Directional suitability
Poor.

Overall suitability
Fair, good to excellent if used so that vegetation and topography block it's light from the beach.

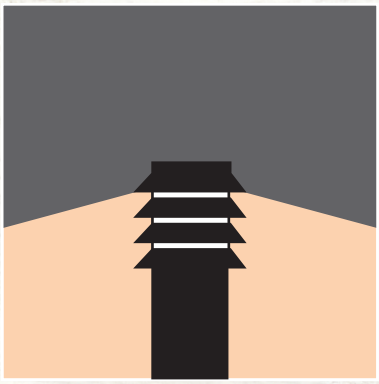


Low height (short) tier lighting

Mounting suitability
Good if mounted at foot level.

Directional suitability
Poor but can be good if the fixture has louvres that eliminate lateral light.

Overall suitability
Fair, good to excellent if used so that vegetation and topography block it's light from the beach.

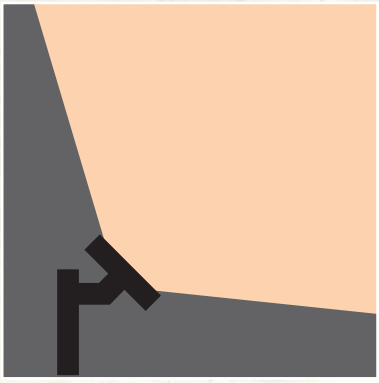


Lighting bollard with louvres

Mounting suitability
Good if mounted at foot level.

Directional suitability
Poor but can be good if the fixture has louvres that eliminate lateral light.

Overall suitability
Fair, good to excellent if used so that vegetation and topography block it's light from the beach.

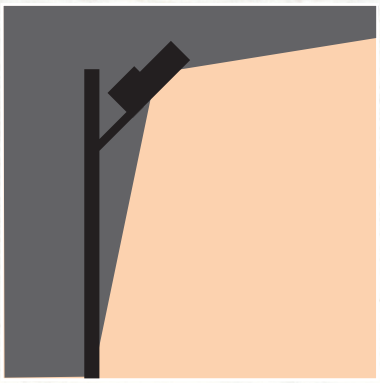


Ground mounted floodlighting

Mounting suitability
Poor because of its upward aim.

Directional suitability
Fair to good.

Overall suitability
Fair to poor if directed away from the beach, very poor if directed toward the beach.

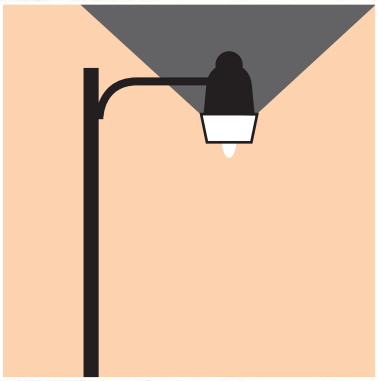


Pole mounted floodlighting

Mounting suitability
Fair if directed downward and away from the beach.

Directional suitability
Fair to good.

Overall suitability
Fair to good if aimed downward and directly away from the turtle nesting beach and if light does not illuminate objects visible from the beach. Otherwise, poor to very poor.

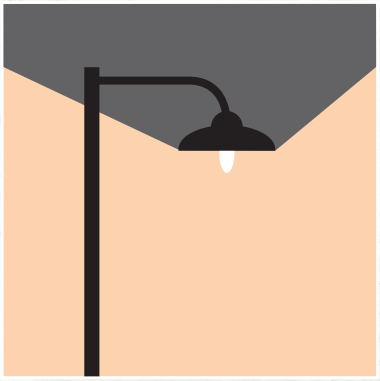


Arm mounted area lighting: open bottom or barn light fixture

Mounting suitability
Poor to very poor, depending on mounting height.
Mounting height should be no more than 4.5 metres within 150 metres of a turtle nesting beach.

Directional suitability
Poor if unshielded. Fair if shielded properly.

Overall suitability
Poor.

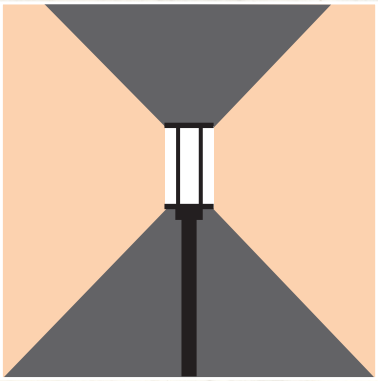


Arm mounted area lighting: decorative pendant fixture

Mounting suitability
Poor to very poor, depending on mounting height.
Mounting height should be no more than 4.5 metres within 150 metres of a turtle nesting beach.

Directional suitability
Poor. Difficult to shield properly.

Overall suitability
Poor.

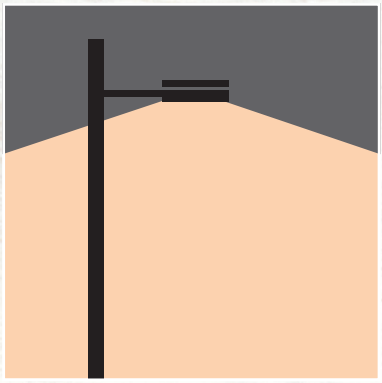


Decorative carriage lighting

Mounting suitability
Fair if mounted at heights lower than 1.8 metres, poor if mounted higher.

Directional suitability
Very poor, Fair if shielded properly.

Overall suitability
Poor.

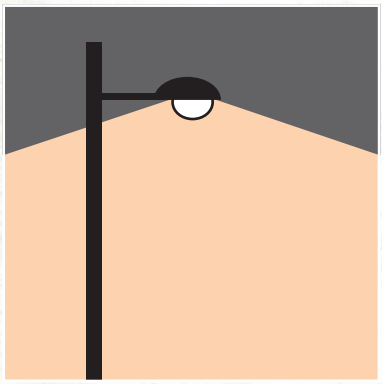


Arm mounted cutoff lighting: shoe box fixture

Mounting suitability
Good to poor, depending on mounting height.
Mounting height should be no more than 4.5 metres within 100 metres of a nesting beach.

Directional suitability
Fair to good, as determined by reflectors

Overall suitability
Fair to good when mounting heights are low and fixtures are aimed directly downward.



Arm mounted area lighting: cobra-head fixture

Mounting suitability
Poor to very poor, depending on mounting height.
Mounting height should be no more than 4.5 metres within 100 metres of a nesting beach.

Directional suitability
Poor. Difficult to shield properly.

Overall suitability
Poor.

Arm mounted area lighting: flat face cutoff fixture

Mounting suitability
Good to poor, depending on mounting height.
Mounting height should be no more than 4.5 metres within 100 metres of a nesting beach.

Directional suitability
Fair to good, as determined by reflectors.

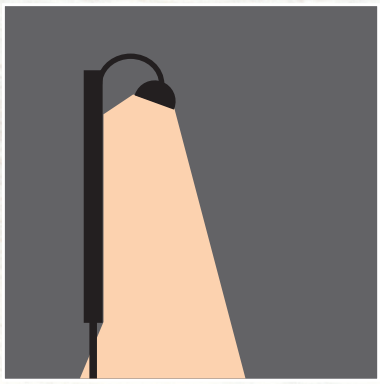
Overall suitability
Fair to good when mounting heights are low.

Sign lighting: bottom up style

Mounting suitability
Poor, because of its potential for producing uplight scatter.

Directional suitability
Poor to good.

Overall suitability
Poor. Signs near nesting beaches should be lighted from the top down. In no case should lighted signs be visible from the beach.

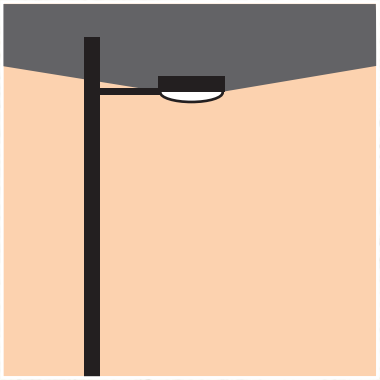


Sign lighting: top down style

Mounting suitability
Good

Directional suitability
Poor to good.

Overall suitability
Generally good if the sign is not visible from the beach and if the lighting is well aimed.

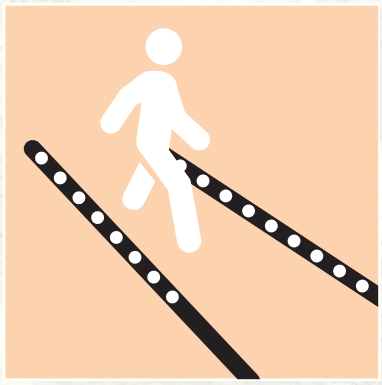


Arm mounted area lighting: fixtures with refracting globes or convex lenses

Mounting suitability
Poor to very poor, depending on mounting height. Mounting height should be no more than 4.5 metres within 150 metres of a turtle nesting beach.

Directional suitability
Poor. Fair to good if shielded properly.

Overall suitability
Poor.



Linear tube lighting

Mounting suitability
Excellent if mounted at foot level.

Directional suitability
Fair to poor, but this lighting is of concern only if mounted high or if large numbers of high wattage (>3 watts) lamps are used.

Overall suitability
Excellent if low wattage strips are used sparingly in recessed areas.

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