1 INTRODUCTION

The use of artificial electric lighting has increased rapidly over the last hundred years both in daytime and nighttime use allowing humans to adapt to 24 hour active society. However, the increase in the use of exterior lighting during nighttime has produced undesirable side effects known as “light pollution”. The term “light pollution” has been in use for a number of years, but in most circumstances it has referred to the degradation of human views of the night sky (hiding stars). In addition to this, artificial night lighting can have adverse effects on wildlife as well as to humans. Light signal at wrong biological time can interfere with the normal behavior of both plants and animals. In this work, the basics of the concept of “light pollution” are reviewed.

Chapter 2 focuses on the basic characteristics of human vision, photometric (visible light) and astronomic units, light sources and luminaires. This is followed by the further definition of light pollution in chapter 3 including the legislation trying to regulate the amount of exterior lighting. Chapter 4 and chapter 5 review briefly the measurement and modeling methods used with light pollution. Chapter 6 then reviews the physiological effects of artificial night lighting to plants, animals and humans. The main goal of this work is to give a comprehensive review of the different aspects related to light avoiding too detailed review.