TABLE OF CONTENTS – Thermal Imaging Techniques to Survey and Monitor Animals in the Wild: A Methodology

- Dedication
- Preface
- About the Authors
- Acknowledgments

Chapter 1: Introduction

Abstract

Chapter 2: Background

- Abstract
- Overview and basic concepts
- Counting methods

Chapter 3: Remote Sensing

- Abstract
- Introduction
- Enhanced visual
- Image intensifiers (I² devices)
- Low light level cameras
- Trip cameras
- Radars and sonars
- Thermal imaging
- Radiotelemetry
- Image intensifiers or thermal imagers?

Chapter 4: Heat Transfer Mechanisms

- Abstract
- Background
- Animals

Chapter 5: Optical Radiation

- Abstract
- Kirchhoff's law
- Stefan–Boltzmann law
- Planck radiation law
- Background temperature
- Apparent temperature

Chapter 6: Emissivity

- Abstract
- Quality of the surface
- Viewing angle
- Shape of the object

Apparent temperature Versus viewing angle

Chapter 7: Thermal Imagers and System Considerations

- Abstract
- Brief history (basic concepts)
- Performance parameters

Chapter 8: Imager Selection

- Abstract
- Introduction
- Thermal detectors versus photon detectors
- Selecting an IR imager
- Camera features
- Verifying performance
- Typical MWIR camera

Chapter 9: Properties of Thermal Signatures

- Abstract
- Introduction
- Image quality
- Spectral domain
- Spatial domain
- Temporal domain
- Visibility bias
- Surveillance

Chapter 10: Thermal Imaging Applications and Experiments

- Abstract
- Background
- Literature reviews
- Concluding remarks

Chapter 11: Using Thermal Imagers for Animal Ecology

- Abstract
- Introduction
- Methodology
- Surveys
- Angular dependencies and effects
- Emissivity
- Background clutter
- Diurnal cycle
- Atmospheric effects
- Automated detection
- Thermography and thermoregulation

Chapter 12: On the Horizon

- Abstract
- Drones
- Miniaturized thermal cameras
- References Subject Index.