

# Contents

|                                       |   |            |
|---------------------------------------|---|------------|
| <b>1</b>                              | <b>Introduction . . . . .</b>   | <b>1</b>   |
|                                       | Henrik Brumm  |            |
| <b>Part I Signal Detection Theory</b> |   |            |
| <b>2</b>                              | <b>Signal Detection, Noise, and the Evolution of Communication . . . . .</b>                  | <b>7</b>   |
|                                       | R. Haven Wiley  |            |
| <b>Part II Acoustic Signals</b>       |   |            |
| <b>3</b>                              | <b>Masking by Noise in Acoustic Insects:<br/>Problems and Solutions . . . . .</b>             | <b>33</b>  |
|                                       | Heiner Römer  |            |
| <b>4</b>                              | <b>Effects of Noise on Sound Detection and Acoustic<br/>Communication in Fishes . . . . .</b> | <b>65</b>  |
|                                       | Friedrich Ladich  |            |
| <b>5</b>                              | <b>Anuran Acoustic Signal Production in Noisy Environments . . . . .</b>                      | <b>91</b>  |
|                                       | Joshua J. Schwartz and Mark A. Bee  |            |
| <b>6</b>                              | <b>Anuran Acoustic Signal Perception in Noisy Environments . . . . .</b>                      | <b>133</b> |
|                                       | Alejandro Vélez, Joshua J. Schwartz and Mark A. Bee   |            |
| <b>7</b>                              | <b>Avian Vocal Production in Noise . . . . .</b>  | <b>187</b> |
|                                       | Henrik Brumm and Sue Anne Zollinger   |            |
| <b>8</b>                              | <b>Avian Sound Perception in Noise . . . . .</b>  | <b>229</b> |
|                                       | Robert J. Dooling and Sandra H. Blumenrath  |            |

|   |   |     |
|---|---|-----|
| <b>9</b>  | <b>Effects of Noise on Acoustic Signal Production<br/>in Marine Mammals . . . . .</b> | 251 |
|   | Peter L. Tyack and Vincent M. Janik   |     |
| <b>10</b>   | <b>Effects of Noise on Sound Perception in Marine Mammals . . . . .</b>               | 273 |
|   | James J. Finneran and Brian K. Branstetter  |     |
| <br><b>Part III Optical, Electric, and Chemical Signals</b> |   |     |
| <b>11</b>   | <b>Noise in Visual Communication: Motion from Wind-Blown<br/>Plants . . . . .</b>     | 311 |
|   | Richard A. Peters   |     |
| <b>12</b>   | <b>Neural Noise in Electrocommunication:<br/>From Burden to Benefits . . . . .</b>    | 331 |
|   | Jan Benda, Jan Grewe and Rüdiger Krahe  |     |
| <b>13</b>   | <b>Noise in Chemical Communication . . . . .</b>                                      | 373 |
|   | Volker Nehring, Tristram D. Wyatt and Patrizia d'Ettorre                              |     |
| <br><b>Part IV Impacts of Anthropogenic Noise</b>           |   |     |
| <b>14</b>   | <b>Anthropogenic Noise and Conservation . . . . .</b>                                 | 409 |
|   | Peter K. McGregor, Andrew G. Horn, Marty L. Leonard<br>and Frank Thomsen              |     |
| <b>Index . . . . .</b>                                      |   | 445 |