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Introduction

Across California, some documented changes in the environment, agriculture, and public health are plausibly but not yet established to be influenced by climate change. The potential links to climate change are supported by scientifically likely hypotheses, models, and/or limited data, but confounding factors such as land use change, environmental pollution, and the inherent variability of the climate system, make it difficult to establish a clear link to climate change. These trends and conditions are discussed in this volume as emerging indicators, where the evidence is compelling enough to warrant attention, but has not yet reached the threshold to confirm a climate signal.

Many of the trends documented in this volume intersect with and could amplify climate risks already tracked across water supply, public health, and ecosystems in other volumes of this report. Some cut across multiple sectors – declining winter fog impacts agriculture and coastal systems; rising cyanobacteria bloom threaten drinking water, aquatic ecosystems, and tribal cultural resources; and co-exposure to pesticides and extreme heat represents a compounding burden for farmworkers, an example of how



climate effects have become more pronounced in communities facing multiple, overlapping exposures.

The following chapters – Central Valley Fog, Coastal Fog, Cyanobacterial Harmful Algal Blooms (Freshwater and Estuarine), Bluetongue in Livestock, Bumble Bee Populations, Aeroallergens, Farmworker Exposure to Pesticides, Foodborne and Waterborne Infectious Diseases, and Zoonoses – document current trends, confounding factors, and knowledge gaps for each of these emerging indicators.

