

# Routes to Response

## A conceptual framework to detect the effect of oil sands industrial activity on the land

The Oil Sands Monitoring Program is assessing the environmental impacts of oil sands development at different spatial scales. Monitoring in the Oil Sands Region operates under a consistent framework that identifies the major pressures, stressors, pathways, and responses that lead to environmental change. This framework guides the design for land-based biological monitoring — with a focus on wildlife monitoring — and helps identify where and how oil sands stressors affect different species of birds and mammals.

The framework connects environmental responses to natural and human pressures through a complex web of pathways. A conceptual model maps out the routes to response for the terrestrial monitoring component.

### Pressure

A natural or human activity that impacts the environment.

### Stressor

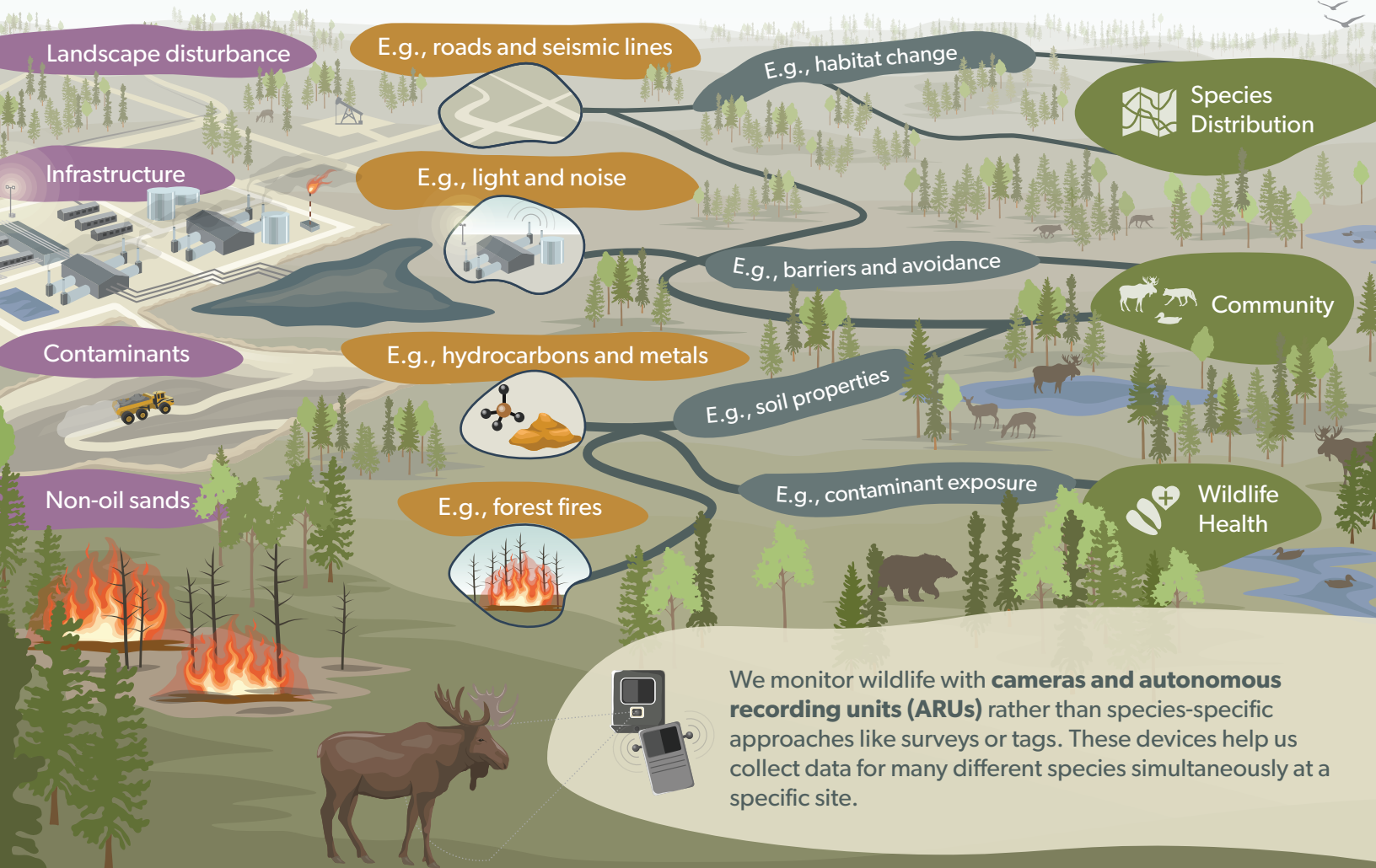
A specific and measurable action or change that may affect ecological function.

### Pathway

The mechanism that creates an environmental response from a stressor.

### Response

A change in the function or behaviour of a living or non-living part of the environment.



This model combines knowledge from across the Oil Sands Region and maps out how specific stressors impact the land. This helps to guide monitoring questions, methods, and analysis. Monitoring under this framework allows us to understand effects at different spatial scales, and the interactive effects of many stressors occurring at the same time. As new knowledge is generated, we refine our approaches to reflect the best current understanding of the system.

For more information, access the full terrestrial monitoring framework here.

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