

ENVIRONMENTAL CUMULATIVE EFFECTS MANAGEMENT



The environment's ability to cope with increasing pressures from human activity is limited. Environmental cumulative effects management is a way to consider the environmental impact of human activities for a specific region over time. It recognizes that limits need to be placed on the total emissions and activities in an area based on the region's sensitivity. This management approach is necessary if we are to protect the environmental quality of the air, land, water and biodiversity in our province.



What Are Environmental Cumulative Effects?

"Cumulative effect" is a term that refers to the impact(s) that a combination of activities, and/or an increase in a single activity, have on one or more aspects of the environment. Sometimes this will occur over time, when new development starts up in an area that already has environmental impacts from previous activities. Cumulative effects also occur when multiple activities take place across an area. The Industrial Heartland, east and north of Edmonton, is an example of an area that contains a number of industrial facilities. As part of managing the environment in this area, the cumulative effects of adding a new facility or potentially allowing a proposed increase in emissions will be considered in the context of all existing emissions and activities.



Environmental Cumulative Effects Management

Cumulative effects management is a system or process that looks at the total impact of development in an area over time. Part of this includes setting limits for emissions into air, as well as impacts on land and water based on the sensitivity of the environment. This method of managing the environment is called "outcomes based," which means that a clearly defined end result has been established for the environment. For example, a cumulative effects management system can determine that it is possible to improve air quality for a region by limiting the total emission of specific pollutants (i.e., setting limits), regardless of the number of sources in the region.

The total emission for the identified air pollutant will take into account both industrial and non-industrial sources,

and will have considered the environmental sensitivity for that specific region. This method of tailoring limits for a specific area is known as “place based” cumulative effects management.

Sensitive regions are less able to **buffer** change; thus development in these regions will be managed differently than in areas that are able to withstand/absorb greater amounts of change. All facilities operating in an area must work cooperatively to ensure that total emissions for a region do not exceed the set limit. In addition to meeting these regional limits, environmental regulations also apply to each individual industrial facility. (See *Regulating Air Quality* factsheet for a more detailed discussion of regulatory approvals.) Cumulative effects management approaches also include non-regulatory options such as education, incentives and voluntary actions for meeting an objective.

The Benefits of Environmental Cumulative Effects Management

Environmental cumulative effects management ensures the impacts of all activities occurring within a region over time are considered. The system considers the environmental implications of development on a regional basis, rather than across the province as a whole, since every landscape is different. Cumulative effects management also encourages innovation in using or developing new tools and methods to protect the environment by providing incentives to industries that use pollution-reduction methods. By using these methods, environmental cumulative management aims to address environmental issues associated with increasing growth and development within a region so that a balance is reached between the environment and human activities.



Evaluation of Environmental Objectives

Within a region, regular reviews are undertaken to evaluate if the desired outcomes (environmental results) are being achieved. An important part of cumulative effects management is being flexible and allowing for adjustments when pre-determined environmental targets are not being met. However, these adjustments must not have the potential for causing an adverse effect on the environment.

Definitions

Biodiversity - the variety of organisms (plants and animals) found within a specified geographic region.

Buffer - the ability to withstand change and protect from damage.

Limits - the set amount of total allowable emissions for a region. This would typically be an annual total number describing the maximum in tonnes of emission of a specific pollutant allowable from all facilities within a region.