

## **Dawson Regional Planning Commission Cumulative Effects Assessment**

The *Interests and Issues Report* recently published by the Dawson Region Land Use Planning Commission summarises the Commission's record of the input it has received during the initial consultation process for the Dawson Region Plan. Included in this, and preceding Yukon Land Use Planning Council Plans and documentation, is the consideration and assessment of cumulative effects. Both the North Yukon Region and Peel Watershed Land Use Plans take two main approaches to cumulative effects assessment.

Firstly, they identify indicators intended to track the potential cumulative effects of land use. These *Cumulative Effects Indicators* are used to identify and evaluate impacts and, when considered as a component of the results-based management framework, the indicators assist in establishing a general index of ecological integrity.

In the case of both previous plans these indicators are:

- **Direct Surface Disturbance:** the amount of area physically disturbed by human activities. Such things as structures, roads, gravel quarries, seismic lines, access trails and similar features all create physical *footprints* on the land, resulting in direct habitat impacts.
- **Linear Density:** the total length of all human-created linear features (roads, seismic lines, access trails, etc.) in a given area. Linear density can be used as an indicator of fragmentation—the division of larger areas of habitat into smaller areas. Increasing levels of access may result from linear feature development, potentially leading to greater harvest of wildlife and fish, higher predation rates, and a change in how people and wildlife use the land. For this reason linear density is sometimes referred to as 'access density'.

The previous plans surmise an increase in the level of either of these two indicators results in increased risk of damage to valued ecological and cultural resources. Social and economic values can also be affected when there are high levels of disturbance and activity on the land.

The primary limitation apparent in the protocol is the assessment of what is considered the 'footprint' of activities. In the earlier plans the extent of disturbance is restricted to the actual physical disruption of an activity or feature. Thus, the cumulative assessment of a highway will be restricted purely to the area of land that will be disrupted. It takes no apparent account of the sphere of influence that a facility, road or trail will have on the local environs or wildlife – normally covering a far greater area than the actual physical infrastructure. For example, research has shown boreal caribou avoid areas extending a minimum of 500 m each side of access routes, thus circumventing a swathe 1km wide.

The plans' protocol concentrates almost solely on the potential for additional use of an access route to attract hunters and facilitate hunting success, but does little to address the potentially enormous adverse impacts the use of that route will have on wildlife behaviour in particular – habitat avoidance, disruption of breeding and feedings patterns, and stress. A road or trail may cover a relatively small area in square or linear kilometres, but the impacts on wildlife in terms of disturbance will exceed that figure by degrees.

Studies reviewed and cited by the Commission do consider the wider implications of air support, and helicopter use in particular, and recognise the greater scope of disturbance goes far beyond the actual flight-paths. The Dawson Region Plan must ensure the entire affected area of a facility or access route is similarly considered when assessing its disturbance and cumulative impacts.

Linear density doesn't really differentiate between highways and smaller scale seasonal trails. The assessment model should either incorporate a mechanism that distinguishes the range of access types and status (seasonal, permanent), and its level of expected or actual usage; or adopt the precautionary principle and treat all routes as a highest impact and use highway. This will likely require a more detailed analytical assessment model.

The existing plans don't generally consider disturbances that may not 'recover' through remediation or reclamation in cumulative impact assessments. This is a serious shortcoming, particularly in areas where historic mining has taken place or where mining development is proposed. Placer mining in particular disturbs large tracts of land. While there is a legislated requirement to reclaim areas when mining is complete, evidence indicates this often does not happen. The system of continual renewal of permits is not conducive to progressive reclamation. In addition, claims are sold and transferred without the prescribed remediation in the expectation the new owners or operators will carry out further mining activities. Thus areas can be in development almost in perpetuity, and certainly beyond the lifespan of this plan, without ever adequately recovering. Recent regulator moves to require on-going remediation for mining projects are welcome.

The visual impacts of developments must be incorporated into the cumulative assessment process. The proposed planning area does incorporate areas of wilderness and landscapes with significant tourism and outfitting potential. Earlier plans do make reference to the visual impacts (of access routes in particular) and these should be further developed and enhanced within the plan for the Dawson region.

Secondly, the plans' *Cumulative Effects Indicator Levels* provide guidance on the acceptable limits of human-caused disturbance in a management area. An increase in the level of the cumulative effects indicators represents increased risk to valued ecological and cultural resources. If an indicator level in a zone is reached or exceeded, the result may be undesirable effects on ecological and cultural resources.

There is a danger that the calculation of acceptable levels of disturbance (usually expressed in percentage terms) may not truly reflect the impacts on flora and fauna in an area – or on visual amenity. While acknowledging this type of threshold is notoriously difficult to determine, there is often a case for reducing the size of management areas or subdividing larger areas to provide a locally relevant and accurate assessment. Thus each subdivision will have its own maximum level of disturbance (based on a 'sphere of influence' approach) within an overall management area. It is acknowledged the percentage analysis protocol quoted in the plan was determined using the historic footprints of currently disturbed or active areas in the Yukon.

The plan should also take account of historic developments, with a retrospective assessment of the cumulative impacts in locations where this has not been considered in the past. Areas such as the Indian River have seen relatively unhindered exploration and mining without the benefit of a full cumulative assessment. Recent YESAB assessments for proposed activities in these regions have recommended this

analysis be undertaken. Contingency plans may need to be developed for areas considered to have surpassed recognised thresholds.

The North Yukon Region and Peel Watershed Land Use Plans confirm the best way to manage the cumulative effects of land use is to integrate and coordinate actions and decisions. Assessment, mitigation, government policy, legislation and planning all play a role. In the absence of regional planning, project assessment is not able to manage the potential regional effects of multiple land uses.

The *Key issues related to cumulative effects management* listed in the earlier plans should be incorporated in the Dawson Region Plan. These could be enhanced by including and addressing socio-economic indicators and effects. Land use planning in isolation from the human, cultural and economic effects loses much of its effectiveness and relevance. Ensuring all baseline information and gaps are identified and accurate is also vital in determining management strategies.

Regards,

A handwritten signature in black ink, appearing to read 'J. Taggart', is positioned below the 'Regards,' text. The signature is stylized and cursive.

Jim Taggart