Development of a GIS Model for Predicting Marijuana Cultivation in Southern BC

Prepared by:
Titan Analysis Ltd. – and – Police Academy, JIBC

With Funding from:
Public Safety Canada – and - Canadian Police Research Centre

EXECUTIVE SUMMARY

There are numerous undetected outdoor marijuana growing sites in Southern British Columbia. Traditionally airborne surveillance has been used to detect sites on an ad hoc basis. Airborne surveillance whilst very effective when executed by trained spotters is expensive. Moreover, it requires dedicated helicopters and is constrained logistically by the vast territory involved. A recent study conducted by Titan Analysis strongly suggests that three sites are undetected for every site positively identified. The estimated value of known outdoor marijuana sites ranges from M$ 138.5 – 296.7 (wholesale) for the Vancouver Island-Gulf Islands-Coastal region; M$ 17.9 (11.4 – 24.4) (wholesale) for the Harrison-Chilliwack-Abbotsford region; M$ 86.8 – 186.0 (wholesale) for the Okanagan region. Potentially undetected sites are estimated at three times those amounts. The purpose of the present study was to develop a new methodology that predicts possible growing sites based on complex criteria developed from known sites (growing patterns) in past years. It uses a methodology called Multi-criteria Evaluation that models multiple factors and constraints in a geographic information systems (GIS) environment. In addition, we have run a Bayesian analysis as a validation technique. Bayesian analysis is a sophisticated form of artificial intelligence that is increasingly used in fields as diverse as medical diagnostics, epidemiology, ecology, and forestry. The most suitable locations are identified for primary and secondary cultivation.

JUSTICE
INSTITUTE
of
BRITISH
COLUMBIA

August 2007