

BIODIVERSITY DIRECTIVES AND OBJECTIVES FOR AGRICULTURAL REGIONS: REVIEW OF EXISTING PLANS, STRATEGIES, STANDARDS AND GUIDELINES

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Executive Summary

The agricultural landscapes extend across Canada from the west coast to the east coast as ribbons of land that hug the main Canada/United States border. The size of the agricultural landscape varies from very confined areas on the west and east coasts, through to extensive tracts of land in the central prairies. Much of this landscape has been converted from temperate forest ecosystems in the east and west, and from grassland, parkland and boreal ecosystems in the prairies, to active farm and ranch areas. Historically, these forested and grassland ecosystems were amongst Canada's most diverse and productive ecosystems. Decades of agricultural activities and land uses have largely reduced and fragmented natural areas and their associated species/habitats/ecosystems to remnant and disconnected parts.

Valuing the overall native biodiversity (i.e. genetics, species, and habitats/ecosystems) in Canada has been a more recent concept and commitment. The urgency to address this conservation theme is most pronounced in the country's agricultural landscapes owing to: (1) the extent of how the land has been extensively used and modified (e.g. primarily for farms and ranches, but also to accommodate expanded urbanization, transportation networks and industrial activities), and (2) the degree to which biodiversity resources have been adversely impacted by those activities. This situation is similar in the United States, Mexico and elsewhere. Conserving biodiversity builds upon the programs that farmers, ranchers, agricultural associations and industries have been supporting, such as wetland and rangeland conservation initiatives, soil and water conservation practices, best management practices, as well as agricultural policies.

Guiding and directing human activities and land uses are critical factors in improving biodiversity conservation in agricultural regions. In these regions, much of the land is privately owned, individuals and corporations manage the land, and the type of agriculture varies from vineyards to cereal/grain crops. Understanding these parameters is essential in developing practical biodiversity conservation performance guidelines and standards that will encourage the conservation, and at times, recovery, of biodiversity. At the same time, biodiversity guidelines and standards must reflect and be set in accordance with the natural systems from which they were derived. The agricultural regions of Canada are not homogenous. The biological (i.e. plants, animals, insects) and physical (i.e. soils, landforms, climate, hydrology) properties of the landscapes vary considerably (e.g. from areas that were once dominated by dry deserts, through to forested plains).

The tasks involved to conserve, recover and sustain biodiversity in the agricultural regions are amongst the most complex and challenging in Canada and elsewhere. How much and what kind of biodiversity can be reasonably protected is not always clear. Some aspects of the biodiversity in the former grasslands and temperate forests will never be recovered and some aspects of what remains may not be capable of being sustained. Priority should be given to retaining the natural remnants of what now exists and careful planning of what happens to these biodiversity resources. Current mechanisms, such as farm plans, ecoregional and action plans, and provincial/federal strategies provide opportunities for landowners, resource managers and governments to cooperatively develop appropriate directions for biodiversity guidelines and standards. For these guidelines and standards to be practical and applicable "on-the-ground" in agricultural landscapes, they need to be couched in ecological terms and applied largely by

farmers and ranchers. The farms and ranches that will be involved in implementing biodiversity guidelines and standards are not the same. Therefore, the effectiveness of these guidelines and standards will be governed by how well they are tailored to the different types of farms and ranches. As well, they need to be tailored to the various types of ecosystems/ecoregions in which the farms and ranches are located. Beyond these two factors, the social and economic situations/circumstances in which the farms and ranches are operating will have to be considered in the context of the capability of individual farmers and ranchers to implement biodiversity conservation performance guidelines and standards. An important requirement in the development of appropriate standards and guidelines will be consultation with agricultural producers.

In this report and accompanying database (containing 336 records), the approach to developing biodiversity conservation performance guidelines and standards for agricultural regions in Canada has been based on many of the above-mentioned considerations. Literature representative of various initiatives related to biodiversity conservation performance guidelines and standards has been reviewed. This review covers material that explicitly cites biodiversity conservation performance measures, and also includes information on standards of practice that is related to achieving these ends. Sometimes the pertinent background material does not contain specific biodiversity related targets for species and habitats. It may concern: how to inventory and monitor biodiversity so that targets can be selected and modified; the types of environmental agreements and farm practices that can be built upon to achieve biodiversity goals; and some of the practical financial constraints or positive incentives related to biodiversity conservation. Wherever possible, the background material has been cross-correlated to the particular ecosystem types that exist in Canada's agricultural regions. The aim was to try to link the related biodiversity conservation initiatives as much as possible with the relevant ecoregions (e.g. related biodiversity activities dealing with the short grassland ecoregions are linked whereas the activities associated with the Carolinian Forest ecoregions are linked).

In Canada, an effective formula to develop guidelines and standards that conserve biodiversity does not currently exist. However, there are relevant and appropriate elements of what might comprise effective guidelines and standards for biodiversity conservation. These elements must be drawn from different locations and groups/agencies from across Canada. The most suitable formula for developing guidelines and standards for biodiversity conservation requires the blending of scientific knowledge and capabilities, along with the practical input (e.g. skills, experience, implementation) as well as needs and priorities of the agricultural communities. This will lead to the most effective on-the-ground agricultural practices for achieving biodiversity conservation.