Saskatchewan Prairie Conservation Action Plan

Native Prairie Speaker Series

Title: Weather, climate, and their influence on the living things of grassland

Speaker: Dr. Dan Johnson, Faculty, University of Lethbridge and VP of the Entomological Society of Alberta.

Summary: We tend to think of weather and climate affecting plants, animals, and microbes (such as pathogens and decomposers) in three general ways, that we will discuss today. One concept of bioclimatology is the long-term patterns and probabilities that make climate patterns, which are then stamped onto the biosphere, building the biomes and ecosystems from the species that persist, and determining where species can survive (by latitude and elevation, for example), complete life cycles, and time events. Another concept operates in shorter times such as season and days, which we idealize (historically, such as the old degree-day concept) or represent with math and data so we can calculate how quickly things are growing, when they will mature, how they might interact, and whether they will survive. Another concept is related to the effects of extremes, which add historical biogeography to the mix. Sometimes life is strongly influenced by rare but impactful events, and may even be adapted to certain frequency. All three of these ways in which life depends on weather and climate can change in terms of trend, strength, range, and variation, and some already are.

About the Speaker:
Our teachers stay with us. Dan Johnson was trained by some of the best plant ecology legends of Saskatchewan such as Bob Coupland, Stan Rowe, and others, in insect ecology by Bob Randell, Dennis Lemkuhl, and Cedric Gillott, and in data analysis by Bill Laverty and enthusiastic science profs such as Don McEwen. At UBC, where he was a Killam Scholar, he studied with Bill Wellington, Canada's expert on weather and life, Judy Myers, Buzz Holling, and the other ecologists of the Institute of Animal Resource Ecology, and George Eaton of the Department of Plant Science. He retains appreciation for studies of plants and animals together in ecological systems. He has conducted research in grassland ecology, but also

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insect-plant-wildlife interactions, integrated crop protection, entomology, and related topics. After 20 years as a research scientist with AAFC, where he introduced GIS, insecticide alternatives, and microbial controls, he joined the University of Lethbridge as Professor and Canada Research Chair. He teaches data analysis, experimental design, environmental science topics, biogeography, and insect ecology, and received a teaching award from the Students' Union. He organized and chaired the world conference on grasshoppers and locusts, held in Canmore, and he led the first Canadian Zebra Chip and Potato Psyllid Monitoring and Research Network, 2013-2018. He conducted research and taught courses in China, Africa, and Southeast Asia, and served as a Canada Research Chair, member of the Alberta Environmental Appeals Board, and with USAID and CIDA. He received the C. Gordon Hewitt medal from the Entomological Society of Canada, and served as ESC President in 2000. Dan has published over 100 refereed scientific articles, and hundreds of other chapters, books, reports, and maps. The cover of Canadian Geographic called him a Green Crusader, based on an article by Candace Savage. His current research concerns unraveling the impacts of weather, climate, insect population, and the geography of genetic differences.

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