Wage Positions in Biodiversity and Ecosystem Health Sciences
Science Branch | Environmental Monitoring and Science Division |Alberta Environment and Parks

Alberta Environment and Parks has openings for several wage positions in the Science Branch of the Environmental Monitoring and Science Division. Successful candidates will participate in the design, planning, coordination, and delivery of biodiversity and ecosystem health monitoring and research programs. These positions provide opportunities for professional growth in a diverse workplace where science is applied to real-world problems. Compensation will be based on the successful candidate's education and experience.

Employment Duration: 6 months with possibility of renewal

Location: Edmonton

Application Closing Date: Friday, October 6, 2017

How to Apply: Interested candidates should email a single *.pdf file containing their cover letter and CV, to: dan.farr@gov.ab.ca. Subject line should be: <*First Name*> <*Last Name*> Application for <*numeric code(s) of the positions(s) you wish to apply for*>. Applicants may apply for more than one position. Please indicate in your cover letter the title and numeric code of the position(s) you wish to be considered for. Only those selected for interviews will be contacted.

Biodiversity Scientist – Ecological Benchmarks (17-007)

- Review monitoring and research programs that could inform assessments of biodiversity and ecosystem health in Alberta's protected areas. Reviews will summarize and critically evaluate key elements of each monitoring program, including geographic scope, key questions, stressors and receptors, monitoring protocols, data management, and reporting.
- Support the completion of multi-year plans for coordinated monitoring and research led by Alberta Environment and Parks, in which key questions relate to the function of Alberta's protected areas as ecological benchmarks. Plans will include each of the elements listed above, plus standard operating procedures and quality assurance protocols. The plans will be anchored by a solid conceptual model supported by relevant scientific literature, and will consider emerging approaches to monitor biodiversity and ecosystem health, including eDNA, bioacoustics and participatory monitoring (e.g., citizen science).
- Contribute to one or more peer-reviewed manuscripts in collaboration with scientists and other professionals both inside and outside of government. May also be asked to acquire new field data as part of coordinated monitoring and research led by Alberta Environment and Parks.
- Position requires PhD (preferred) or MSc in biological sciences related to ecological benchmarks. Also valuable would be experience in designing environmental monitoring and research programs based on testable hypotheses and *a priori* evaluation of a program's capacity to accurately and precisely estimate key parameters, detect differences among treatments, and detect change over time. Even better would be demonstrated understanding of the interplay between the natural sciences and social sciences, as recreational and other activities inside many protected areas affect biodiversity and ecosystem health.

Biodiversity Scientist – Environmental Condition Reporting (17-008)

- Support the core mandate of the Environmental Monitoring and Science Division to report on the condition of the environment by developing the biodiversity and ecosystem health components of the Division's reporting program. By drawing from Condition of Environment reports completed in other jurisdictions, the scientist will propose credible and relevant indicators of biodiversity and ecosystem health that can be reported to Albertans. Reported indicator levels will be based on monitoring and research programs operated by the Governments of Alberta and Canada, plus external monitoring and research organizations. This work involves critical evaluations of available scientific evidence for review by other scientists, accompanied by plain-language summaries for all stakeholders that need to understand key messages.
- May contribute to one or more peer-reviewed manuscripts in collaboration with scientists and others both inside and outside of government.
- Position requires PhD (preferred) or MSc in biological sciences related to environmental monitoring.

Biodiversity Scientist – Motorized Recreation (17-009)

- Critically review the scientific literature to develop conceptual models of ecological responses to motorized recreation, with emphasis on Alberta's eastern slopes. The conceptual models will be based on scientific principles and evidence, and will suggest how motorized recreation may affect ecological process such as hydrology, community dynamics, and population ecology of plants, invertebrates, fish, birds, and mammals. These conceptual models, which may take the form of annotated box-and-arrow diagrams, will support the design of monitoring and research programs to distinguish ecological responses to motorized recreation from ecological responses to other anthropogenic stressors such as industrial activity and ecological drivers such as climate change.
- Support the completion of multi-year plans for coordinated monitoring and research in which the key questions are focussed on ecological responses to motorized recreation, including potential ecological responses to new regulatory limits on recreational activity. Plan elements will include key questions, sampling frame, stressors and receptors, monitoring protocols, standard operating procedures, data management, and reporting. Plans will consider emerging approaches to monitor biodiversity and ecosystem health, including eDNA, bioacoustics and participatory monitoring (e.g., citizen science).
- Contribute to one or more peer-reviewed manuscripts related in collaboration with scientists and other professionals both inside and outside of government. May also be asked to acquire new field data as part of coordinated monitoring and research led by Alberta Environment and Parks.
- Position requires PhD (preferred) or MSc in biological sciences related to ecological responses to motorized recreation. Also valuable would be experience in designing environmental monitoring and research programs based on testable hypotheses and *a priori* evaluation of a program's capacity to accurately and precisely estimate key parameters, detect differences among treatments, and detect change over time.

Biodiversity Scientist – Oil Sands (17-010)

- Critically review the scientific literature to develop conceptual models of biotic responses to oil sands development. These conceptual models, which may take the form of annotated box-and-arrow diagrams, will support the design of monitoring and research programs capable of distinguishing ecological responses to oil sands development from ecological responses to other anthropogenic stressors and ecological drivers such as climate change.
- Support the completion of multi-year plans for coordinated monitoring and research in which the key questions are focussed on ecological responses to oil sands development. Plan elements will include key questions and rationale, sampling frame, stressors and receptors, monitoring protocols, data management, and reporting. Plans will consider emerging approaches to monitor biodiversity and ecosystem health, including eDNA, bioacoustics and participatory monitoring (e.g., citizen science).
- Contribute to one or more peer-reviewed manuscripts in collaboration with scientists and other professionals both inside and outside of government.
- Position requires PhD (preferred) or MSc in biological sciences related to ecological responses to oil sands development. Also valuable would be experience in designing environmental monitoring and research programs based on testable hypotheses and *a priori* evaluation of a program's capacity to accurately and precisely estimate key parameters, detect differences among treatments, and detect change over time. Even better would be experience in designing and operating integrated monitoring programs involving ecologists, hydrologists, and other scientists.

Biodiversity Science Program Support (17-011)

- Provide support to the Biodiversity and Ecosystem Health Sciences Director and the Biodiversity and Ecosystem Health Sciences team with respect to all aspects of program planning, delivery, and deliverables.
- Manage grants and contracts with collaborators and service providers, certify invoices and track budgets and expenditures, help complete work planning documents, provide assistance to team scientists with administrative duties.
- Support data management systems by compiling metadata and enhancing system capabilities. Attention to detail, strong organization and communication skills are important.
- Position requires MSc (preferred) or BSc in biological sciences; familiarity with environmental science and environmental monitoring programs strongly desired.

Biodiversity Scientist – Renewable Energy (17-012)

- Develop conceptual models to represent current scientific understanding of ecological responses to wind and solar energy developments in Alberta. These conceptual models, which may take the form of annotated box-and-arrow diagrams, will support the design of monitoring and research programs to distinguish ecological responses to renewable energy development from ecological responses to other anthropogenic stressors and ecological drivers such as climate change.
- Support the completion of multi-year plans for coordinated monitoring and research in which the key questions are focussed on ecological responses to renewable energy developments. Plan elements will

include key questions, sampling frame, monitoring protocols, data management, and reporting. Bats and birds are key receptors for consideration in these plans. Plans will consider emerging approaches to monitor biodiversity and ecosystem health, including eDNA, bioacoustics and participatory monitoring (e.g., citizen science).

- Contribute to one or more peer-reviewed manuscripts in collaboration with scientists and other professionals both inside and outside of government. May also be asked to acquire new field data as part of coordinated monitoring and research led by Alberta Environment and Parks.
- Position requires PhD (preferred) or MSc in biological sciences related to ecological responses to renewable energy development. Also valuable would be experience in designing environmental monitoring and research programs based on testable hypotheses and *a priori* evaluation of a program's capacity to accurately and precisely estimate key parameters, detect differences among treatments, and detect change over time.

Biodiversity Scientist - Wetlands (17-013)

- Critically review the scientific literature to develop conceptual models of wetland ecosystem responses to anthropogenic stressors including industrial development, contaminants, invasive species, human use, and other stressors. Conceptual models will be based on scientific principles and evidence, and will suggest how anthropogenic activity may affect the flow of energy and materials such as water and nutrients in wetland ecosystems. These conceptual models, which may take the form of annotated box-and-arrow diagrams, will support the design of monitoring and research to distinguish ecological responses to anthropogenic stressors from environmental variation and ecological drivers such as climate change.
- Critically review and compare standard operating procedures for monitoring biological parameters in wetlands (e.g. water quality, plant and animal communities).
- Support the completion of multi-year plans for coordinated wetland monitoring and research led by Alberta Environment and Parks. Plan elements include key questions, sampling frame, stressors and receptors, monitoring protocols, data management, and reporting plans. Plans will consider emerging approaches to monitor wetlands using field sampling, automated sensors, remote sensing, and participatory monitoring (e.g., citizen science).
- Contribute to one or more peer-reviewed manuscripts in collaboration with scientists and others both inside and outside of government. May also be asked to acquire new field data as part of coordinated monitoring and research led by Alberta Environment and Parks.
- Position requires PhD (preferred) or MSc in biological sciences related to wetlands. Also valuable would be experience in designing environmental monitoring and research programs based on testable hypotheses and *a priori* evaluation of a program's capacity to accurately and precisely estimate key parameters, detect differences among treatments, and detect change over time. Even better would be experience in designing and operating integrated monitoring programs involving ecologists, hydrologists, and other scientists.