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## **CLIMATE CHANGE AND WATER LEVEL IMPACTS ON WETLANDS: A BIBLIOGRAPHY**

## **RÉPERCUSSIONS DU CHANGEMENT CLIMATIQUE ET DU NIVEAU DES EAUX SUR LES MILIEUX HUMIDES : BIBLIOGRAPHIE**

**by/par**

**G. Koshida and/et L. Mortsch**

**CLI-1-91**

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1991

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RÉPERCUSSIONS DU CHANGEMENT  
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LES MILIEUX HUMIDES: BIBLIOGRAPHIE

## INTRODUCTION

# CLIMATE CHANGE AND WATER LEVEL IMPACTS ON WETLANDS: A BIBLIOGRAPHY

# RÉPERCUSSIONS DU CHANGEMENT CLIMATIQUE ET DU NIVEAU DES EAUX SUR LES MILIEUX HUMIDES : BIBLIOGRAPHIE

As part of a study to determine the physical, biological and socio-economic impacts of water level fluctuations on boreal wetlands, a bibliography was conducted. Emphasis was placed on studies detailing the effects of historical water level fluctuations on Great Lakes coastal wetlands. In addition, studies were scarce regarding the effects of water level changes of the Great Lakes Basin. As a result, this bibliography was compiled as a source of information on the relationship between climate, water levels and freshwater wetlands.

Dans le cadre d'une étude visant à déterminer les impacts physiques, biologiques et socio-économiques des fluctuations du niveau des eaux sur les milieux humides dans le domaine des Grands Lacs, une bibliographie a été effectuée. L'accent a été mis sur les études détaillant les effets des fluctuations historiques du niveau des eaux sur les milieux humides bordant les Grands Lacs. Ensuite, les études étaient rares concernant les effets des changements de niveau des eaux dans la cuvette des Grands Lacs. En conséquence, cette bibliographie a été compilée en tant que source d'information sur la relation entre le climat, les niveaux d'eau et les milieux humides douce-douce.

by/par

**G. Koshida and/et L. Mortsch**

**CLI-1-91**

The bibliography contains of approximately 540 references for the period 1935 to 1991. The references are divided into four major subject areas: 1) wetlands, climate and water levels; 2) wetland functions and values; 3) wetlands of Canada and the Great Lakes; and 4) climate change, water levels and wetlands.

**A publication of the Canadian Climate Program  
Publication du Programme climatologique canadien**

and the wetlands before considering the impacts of climate change on wetlands. The citations are further subdivided into more specific topics, and are listed alphabetically by author and then by year. The references listed include published materials such as journals, workshop results, conference and symposium proceedings, technical reports and government agency reports. Unpublished works such as theses and government documents are also included.

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La présente bibliographie comprend plus de 540 références pour la période de 1935 à 1991. Les documents sont classés en quatre grands domaines: 1) zones humides, climat et niveaux d'eau; 2) fonctions et valeurs des zones humides; 3) zones humides du Canada et des Grands Lacs; et 4) changement climatique, niveaux d'eau et zones humides.

Le présent document est une publication du Programme climatologique canadien.

Il traite également des zones humides avant d'aborder les impacts du changement climatique sur les zones humides. Les citations sont subdivisées par thème et sont classées alphabétiquement par auteur et par année.

Les références sont énumérées dans ce document sous forme de publications telles que des journaux, résultats de séminaires, rapports de conférences et rapports gouvernementaux.

Les publications sont également incluses, telles que les rapports de recherche, les rapports de conférence et les rapports gouvernementaux.

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## **CLIMATE CHANGE AND WATER LEVEL IMPACTS ON WETLANDS: A BIBLIOGRAPHY**

### **INTRODUCTION**

Climate change may significantly alter the water resources of North America. The climate is a major factor determining the water level regime of the Great Lakes. Along the shorelines, the remaining coastal wetlands are closely linked to historical Great Lakes water levels. An altered water regime in the Great Lakes Basin would affect the presence and ecological viability of these wetlands. Such a change would also affect both wetland functions and the value of the wetlands themselves. Therefore, the possible impacts of global warming on these fragile and valuable ecosystems would be of interest.

As part of a study to determine the physical, biological and socioeconomic impacts of water level fluctuations on coastal wetlands, a literature review was conducted. Emphasis was placed on works detailing the effects of historical lake level changes on Great Lakes coastal wetlands. It was found that such studies were scarce, especially on the Canadian side of the Great Lakes Basin. As a result, this bibliography was compiled as a source of information on the relationship between climate, water levels and freshwater wetlands.

This bibliography consists of more than 540 citations for the period 1935 to 1991. The references are divided into four major subject areas: 1) wetlands, climate and water levels; 2) wetland functions and values; 3) wetlands of Canada and North America and 4) climate change, water resources and the Great Lakes. This organization provides an overview of historical and present conditions in both the Great Lakes and the wetlands before considering the possible impacts of climate change-induced lake level changes. The citations are further subdivided into more specific topics, and are listed alphabetically by author and then by year. The references listed include published materials such as journals, workshop results, conference and symposium proceedings, technical manuals and government agency reports. Unpublished works such as theses and government documents are also included.

## **REPERCUSSIONS DU CHANGEMENT CLIMATIQUE ET DU NIVEAU DES EAUX SUR LES MILIEUX HUMIDES: BIBLIOGRAPHIE**

### **INTRODUCTION**

Le changement climatique pourrait modifier considérablement les ressources hydriques de l'Amérique du Nord. En effet, le climat est l'un des principaux facteurs qui déterminent le niveau des eaux des Grands Lacs. Les milieux humides qui existent encore en bordure des rives des Grands Lacs sont étroitement liés aux fluctuations passées du niveau des eaux. Par conséquent, la modification du régime hydrologique des Grands Lacs aurait des répercussions sur l'existence et la viabilité écologique de ces milieux, de même que sur leur rôle et leur utilité. Il serait donc intéressant de connaître les répercussions éventuelles du réchauffement mondial sur ces écosystèmes fragiles et précieux.

Dans le cadre d'une étude visant à déterminer les conséquences physiques, biologiques et socio-économiques de la fluctuation du niveau des eaux sur les milieux humides du littoral, nous avons passé en revue la documentation qui existe dans le domaine. Nous avons attaché une importance particulière aux travaux traitant des répercussions qu'ont eues sur les zones humides du littoral les fluctuations passées du niveau des Grands Lacs. Nous avons pu constater qu'il existait peu d'études portant sur ce sujet, particulièrement sur le côté canadien du bassin des Grands Lacs. Nous avons donc décidé de compiler la présente bibliographie afin qu'elle puisse servir de source d'information sur les liens entre le climat, le niveau des eaux et les milieux humides d'eau douce.

La présente bibliographie comprend plus de 540 notices relatives à des ouvrages publiés entre 1935 et 1991. Les documents répertoriés ont été classés selon quatre sujets principaux : 1) zones humides, climat et niveau des eaux; 2) rôle et utilité des zones humides ; 3) zones humides du Canada et de l'Amérique du Nord; 4) changement climatique, ressources hydriques et Grands Lacs. Ce classement permet d'obtenir un aperçu de la situation passée et de la situation actuelle dans les Grands Lacs et les milieux humides, puis d'examiner les répercussions éventuelles que pourrait avoir la fluctuation du niveau des eaux des lacs causée par le changement climatique. Les ouvrages sont ensuite subdivisés selon des sujets plus particuliers, et sont classés par ordre alphabétique du nom d'auteur, puis par année. La bibliographie comprend les documents publiés (périodiques, conclusions d'ateliers, comptes

The wetlands, climate and water levels section contains citations related to wetland hydrology and the modelling of such interrelationships. The impacts of past water level fluctuations on wetlands and their various components (waterfowl, mammals, fish) are also listed in the first section.

Wetlands perform vital biological, hydrological and socioeconomic functions. References detailing such wetland functions and values are listed in the second section of the bibliography. Of particular interest were any citations which provided information on how wetland functions and values changed with water level fluctuations.

A national inventory of Canadian wetlands did not exist until the landmark book, *Wetlands of Canada* was published in 1988. Therefore, the third section provides citations detailing wetlands in Canada and North America with emphasis on Great Lakes coastal wetlands.

An enormous amount of literature on climate change has been published within the last decade. The fourth section of the bibliography lists the major publications related to climate change and water resources in North America. As well, references on Great Lakes hydrology and resource management practices are included.

The compilers have attempted to verify all citations and to ensure their accuracy. However, the compilers would be grateful if any errors were brought to their attention. Also, recommendations for additional references for future updates of this bibliography would be appreciated.

rendus de conférences et de symposiums, manuels techniques et rapports d'organismes gouvernementaux), ainsi que des travaux non publiés (thèses et documents du gouvernement, par exemple).

La section sur les zones humides, le climat et le niveau des eaux comprend des ouvrages liés à l'hydrologie des milieux humides et à la modélisation des phénomènes qui s'y rattachent. Elle indique en outre les ouvrages traitant des conséquences des fluctuations passées du niveau des eaux sur les zones humides et les animaux qui y vivent (sauvagine, mammifères et poissons).

Les milieux humides jouent un rôle vital sur le plan biologique, hydrologique et socio-économique. Ainsi, la deuxième section de la bibliographie comprend la liste des ouvrages qui traitent du rôle et de l'utilité de ces milieux. Parmi les ouvrages de cette section susceptibles d'intéresser le chercheur, citons ceux qui montrent comment la fluctuation du niveau des eaux a modifié le rôle et l'utilité des zones humides.

Avant la publication très remarquée en 1988 du livre intitulé *Terres humides du Canada*, il n'existe pas de répertoire national des zones humides du Canada. Ainsi, la troisième section comprend les ouvrages qui traitent des zones humides du Canada et de l'Amérique du Nord et fait une large place aux ouvrages qui portent sur les milieux humides de littoral des Grands Lacs.

Au cours de la dernière décennie, il s'est publié une énorme quantité d'ouvrages sur le changement climatique. La quatrième section de la bibliographie donne la liste des principales publications portant sur le changement climatique et les ressources hydriques en Amérique du Nord. En outre, le lecteur y trouvera les ouvrages traitant de l'hydrologie des Grands Lacs ainsi que des méthodes de gestion des ressources.

Nous nous sommes efforcés de vérifier l'exactitude de toutes les notices. Cependant, nous serions heureux que le lecteur nous fasse part de toute erreur éventuelle et qu'il nous recommande d'autres documents à inclure dans la bibliographie au moment de sa mise à jour.

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