

MODELING CRITICAL LOADS OF AIRBORNE ACIDITY AND EUTROPHICATION OF POLISH FOREST ECOSYSTEMS – THE SONOX MODEL

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Abstract: A mass balance model to calculate critical loads of airborne acidity and eutrophication to forest ecosystems has been computerized. The SONOX software developed at the Institute of Environmental Protection replicates the sequence of events on the path from sulfur and nitrogen emission through their deposition and next overlaying it on critical loads values to identify the extent and areas of critical loads exceedance. To support decision making a converse direction is offered to assess the necessary emission reductions to meet assumed environmental goals by eliminating or suitably abating the critical loads exceedance. This software originally developed and applied to support the Polish contribution to the negotiations of the Oslo and Gothenburg Protocols of the Convention on Long-Range Transboundary Air Pollution was thereafter used to assess the capacity of achieving the interim environmental quality targets of the NEC Directive in Poland, to support the development of air protection programs for administrative units exposed to transboundary fluxes and other decision making purposes.