



Overview

Integrated Pollutant Source Identification (IPSI) is a geographic database and set of tools designed to aid citizens and planners in implementing water quality improvement and protection projects



Successful Use of IPSI Reopens Floatway

within a watershed. IPSI is also designed to aid water quality agencies in implementing the water-quality-based approach to pollution control. The geographic database consists of information on watershed features, such as land use and land cover, stream bank erosion sites, and livestock operations, that are known or suspected sources of nonpoint pollution.

The information is generated by interpretation of low-altitude, color infrared, aerial photography. The data is managed using commercially available geographic information



system (GIS) software. The corresponding set of tools includes atlases that summarize and display the information about nonpoint pollution sources within the watershed, a desktop GIS that allows the user easy access to the database, and a computer model for estimating pollutant loadings by sources and subwatersheds.

IPSI products and services can be purchased individually, or as a complete package that includes:

- An inventory of nonpoint pollution sources
- A desktop GIS for analyzing the data
- An analysis of the data
- A calibrated pollutant loading model
- Estimated pollutant loadings
- Reports that:
 - summarize the data
 - document the IPSI methodologies
 - make recommendations on pollutant load reductions



IPSI Color Infrared
Aerial Photograph



IPSI Products and Services

IPSI Inventory or NPS Inventory

The IPSI inventory or nonpoint pollution source (NPS) inventory is a geographic database, generated from the interpretation of low-altitude, color infrared, aerial photography. This photography is interpreted for those geographic features that are known or suspected to contribute nonpoint source pollution within the watershed. Attributes data, describing the set of geographic features, are loaded into and managed using ARCINFO software (ESRI, Inc.). The database is the basis for the other IPSI products described below.

IPSI Inventory Atlas

The IPSI inventory atlas is a set of sheets displaying the results of the aerial photography interpretation and any analyses performed on the data. Each sheet contains a watershed map and a statistical summary in graphical and tabular form for a given feature. Clients can select atlas sheets from a standard menu, or have a customized atlas produced after the inventory is completed.



Desktop IPSI GIS

The IPSI GIS is a geographic database generated by saving the IPSI inventory results as ArcView files. Managed by ArcView software, the desktop IPSI GIS is a powerful mapping system that allows the user to investigate relationships among various geographic features that are known or suspected to contribute nonpoint source pollution to a selected waterbody. Clients can select themes to be included in the desktop GIS from a standard menu, or have customized themes produced after the inventory is completed. Each theme is a collection of geographic features with various attributes generated during the inventory, extracted from other databases, and/or provided by the client.

IPSI Data Analysis

IPSI data analysis is examination of the geographic data, which may include identifying the condition of the riparian zone, potential sources of sediment and pollutant load to streams, and potentially impaired waterbodies. The analysis can also identify pollution sources or watersheds that should be targeted for pollution reduction programs. The results of the analysis can be delivered as additions to the IPSI atlas and in written reports.



IPSI Pollutant Loading Model

The IPSI Pollutant Loading Model (IPSI PLM) is a desktop computer model that uses the data generated by the inventory to estimate pollutant loadings from selected watershed features. The model, designed to run using Microsoft Excel or Access software, allows the user to estimate pollutant loadings by watershed and source at varying delivery rates. It also allows the user to determine pollutant loadings as a function of BMP implementation. The model software produces tables and graphs that (1) summarize the pollutant loadings by source and subwatershed and (2) can be imported into word processing documents for reporting purposes and into software programs for presentations. Model results can also be displayed as additions to the IPSI inventory atlas and the desktop IPSI GIS.



**IPSI Identifies
Livestock Operations**





IPSI Reports

IPSI reports can be prepared to (1) document data generated by the IPSI inventory and analyses, (2) estimate pollutant loadings, and (3) make recommendations for pollutant loading reductions, based on simulations using the IPSI PLM. These reports can be prepared in cooperation with the client and/or other agencies and watershed partners identified by the client.

IPSI Presentations

Professional presentations on IPSI watershed results can be made to agencies and watershed partners identified by the client. The presentations can be tailored to meet a variety of purposes—from simple information transfer to consensus building. Presentations can also be designed for delivery by the client.

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