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Alaska's Instream Flow Program

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Alaska is a prior appropriation state as set forth in Article VIII, Section 13 of the Alaska Constitution. The Alaska Water Use Act, enacted in 1966, established procedures for obtaining water rights from the Alaska Department of Natural Resources (ADNR) for diversionary water uses by impounding, withdrawing, or diverting surface and ground water for such uses as public domestic water supply, mining, agricultural, hydropower, and industrial and commercial uses. In 1980, the Water Use Act was amended to include instream water uses as beneficial uses, to include reservations for instream water use as appropriative water rights, and to set forth procedures for obtaining water rights for instream uses. A reservation of water in Alaska is an appropriation of water to maintain an instream flow or level of water at a specified point or part of a stream or water body, for specified periods of time for one or more permissible purposes. The law lists four instream uses for which water can be reserved:

1. fish and wildlife habitat, migration, and propagation;
2. recreation and park purposes;
3. navigation and transportation purposes, and
4. sanitary and water quality purposes.

Alaska's instream flow law is unique within the United States because it allows private citizens and organizations along with federal, state, and local government agencies to apply for a reservation of water. The law allows for quantification of specified instream water uses, the establishment of a priority date upon receipt of a completed application, the issuance of a Certificate of Reservation, and a mandatory ten year review of all reservations of water.

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In Alaska, the burden of proof for providing hydrological and biological data required to support an application for an instream flow reservation is placed upon the applicant. The application of a specific method for providing these data is not designated or required by the Alaska legislation.

As a general rule, the Montana (Tennant 1972) or similar instream flow methods are recommended for use when competition for water is minimal. The Instream Flow Incremental Methodology Physical Habitat Simulation System (Bovee 1982; Milhous et al. 1984) or similar methods are recommended for situations where a complete evaluation of all flow options or specific responses of fish species/life phases or other instream flow uses to variations in flow are required.

The selection of a specific methodology will also depend upon the availability and quality of hydrological and biological data and the resources for conducting the investigation. A level One to Four approach for selecting instream flow techniques, as summarized in Smith (1979), combined with the recommendations presented in Wesche and Rechar (1980), are additional starting points for determining which technique to apply.

Regulations to implement the 1980 instream flow legislation were adopted in September 1983. Since then, seven applications for reservations of water for instream uses have been filed with the ADNR. Only one of them was submitted with sufficient information for acceptance. This application was filed by the Alaska Department of Fish and Game (ADF&G) for the purpose of reserving flows to protect and maintain fish habitat in the Terror River on Kodiak Island and is currently under adjudication by the ADNR. Instream flows applied for on the Terror River were quantified using the IFIM.

The ADF&G established a formal instream flow program in July, 1986, and plans to file a minimum of five more applications for instream flows during the remainder of their fiscal year which ends in June 1987. It is anticipated that the ADF&G will be the principal state agency filing for instream flow reservations.

Although the ADF&G program was not funded until 1986, the ADF&G and ADNR have closely coordinated their instream flow and related activities since the mid-1970's. Coordination with other state and federal agencies is achieved through the Federal Reserved Water Rights Work Group.

The ADNR is proposing to amend its regulations to establish a stage in the reservation permitting process which will allow permit applicants to quantify their instream flow requests after filing an application. Presently, applicants must substantiate

requested instream flow quantities prior to filing an application. This amendment will allow instream flow applicants to have more equal footing with diversionary water use applicants who obtain a priority date when they apply for their water allocation prior to substantiating their requested diversionary uses.

In summary, Alaska's instream flow law is in its infancy. Accordingly, its full potential for protecting instream values has not yet been fully explored.

References

- Boeve, K.D. 1982. A Guide to Stream Habitat Analysis Using the Instream Flow Incremental Methodology. Instream Flow Information Paper 12. FWS/OBS-82/26, U.S. Fish Wildl. Serv.
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- Smith, G.L. 1979. Proceedings: Workshop in Instream Flow Habitat Criteria and Modeling. Colorado Water Resources Research Institute Information Series 40, Colorado State University, Fort Collins.
- Tennant, D.L. 1972. A Method of Determining Instream Flow Requirements for Fish, Wildlife, and Aquatic Environment. Pages 3-11 In: Pacific Northwest River Basin Commission Transcript of Proceedings of Instream Flow Requirements Workshop, March 15-16, 1972, Portland, OR.
- Wesche, T.A., or P.A. Rechar. A Summary of Instream Flow Methods for Fisheries and Related Research Needs. Eisenhower Consortium, Bulletin 9, Water Resources Research Institute, University of Wyoming, Laramie.

Microcomputer Corner

Note to PHABSIM and TSLIB Users

The Instream Flow Group is developing design specifications for converting portions of PHABSIM and TSLIB programs along with the Stream Network Temperature Model for IBM-PC and compatible microcomputers. We are initially targeting our development efforts towards a "minimum" hardware/software configuration that we expect most users to have. This configuration would look something like the following:

System Unit	IBM-PC, XT, AT or 100% compatible
Operating System	MS-DOS V2.11, or PC-DOS V2, or later version
Memory	384KB or larger
Storage	Two disk drives, 360K or larger, IBM-PC format
Coprocessor	8087 or compatible math chip
Display	Text - 80 x 25 characters Graphics - 640 x 200 pixels or compatible

Printer	Must support a 132 column print width. Graphics feature highly desirable
Printer Software	Graphics printer driver (e.g., GRAPHICS.COM) highly desirable

These "standards" do not mean that you will not be able to take advantage of some of our programs. Nor do they mean that you will not benefit from having more extensive resources available. In fact, some demanding software, the Stream Network Temperature Model for example, will likely require 10 MB of dedicated storage to perform a reasonable sized analysis. These "minimum standards" simply mean that we expect most of the data entry, editing, simulation, and display programs will work satisfactorily in this environment.

We would like to solicit user comments on this proposed minimum configuration. If you have suggestions or anticipated problems with the list, please write to John Bartholow, National Ecology Center, 2627 Redwing Road, Fort Collins, CO 80526-2899, or call me at 303-226-9319 or FTS 323-5319.

Note to Cyber Users

The Instream Flow Group has been using a very nice communications package tailored especially for connecting IBM-PC or compatible micros with most Cyber mainframes. This software, named CONNECT, is most beneficial in the error-free transmission of files to or from the mainframe. A data compression scheme is invoked to speed transfer. Thus, this software is valuable for building data sets on the micro or for archiving analysis results. In addition, CONNECT is set up to support the new full screen editor (FSE) likely to be CDC's future replacement for XEDIT. The menus in CONNECT are fairly self-explanatory and easy to use, even for first-time users.

Though copyrighted by Control Data, this software is available for free distribution to all Cyber users. CONNECT requires that your Cyber be running NOS. 2.3 or higher. Your PC must be running MS-DOS V2 or higher and you must have at least 192K of memory. If you feel that CONNECT would be useful to you, please send a blank, formatted, double-sided diskette in a self-addressed return mailer, and a letter requesting a copy to John Bartholow, National Ecology Center, 2627 Redwing Road, Fort Collins, CO 80526-2899.

Testers Wanted

We are in need of several individuals interested in testing some software. First, we have what we think is a very nice micro-based data entry, editing, and checking program for IFG-4 data sets. To be a tester, individuals should be, for the moment, more or less regular users of both IFG-4 and IBM compatible microcomputers. If you are interested, please contact John Bartholow at 303-226-9331 or FTS 323-5331. Second, we have a new version of the LIAM software. Testers of this software should be familiar with and have access to an IBM compatible microcomputer and must specify whether or not their machine uses the 8087 math chip. If you are interested, please contact Berton Lamb at 303-226-9331 or FTS 323-5331.