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L-1. slope_to_stage

1.0   General Information

1.1   Application Description

The slope_to_stage program takes Alaska Region-style slope-profile readings ("slope readings") and converts them into (estimated) stage heights. Slope readings consist of a distance (in feet and 10ths of feet) and a marker (alphabetic, typically in the range a to f). This application is written in ecpg/C, is intended to be run manually and can be run by any user.

1.2   Enhancements/Bug Fixes/Changes

Build OB7.2

This application was updated to take into account the upgrade of the OS in ob7.2 and the change in RDBMS from Informix to Postgres. Documentation was updated to reflect these changes.

2.0   Configuration Information

2.1   apps_defaults tokens

One apps_defaults token is used by this program, it is:
    adb_name   archive database name

3.0   User How-To

This application can be run through the *arcmenu -> Data Processing menu*, or on the command line by simply typing *slope_to_stage*. Once in the application, the program asks for the station ID and slope reading, then estimates the stage by interpolating between surveyed distances and stages. If the measured slope distance is greater than the longest surveyed distance, a stage value of "missing" will be returned along with a notice that the reading is off the slope profile (the program does not extrapolate to distances past the surveyed slope).

An example of the program dialog (***user input in bold italics***):

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SLOPE_TO_STAGE CALCULATION
Note: this program only accepts alphabetic markers

Enter sta_ID value_marker (i.e. rbya2 25.6b) (qq to quit): **acla2 23.0a**

ACLA2   Slope = 23.00a   Stage = 15.00

SLOPE_TO_STAGE CALCULATION
Note: this program only accepts alphabetic markers

Enter sta_ID value_marker (i.e. rbya2 25.6b) (qq to quit): **acla2 53.6a**
The ACLA2 slope value 53.60 is off of the a slope profile

SLOPE_TO_STAGE CALCULATION
Note: this program only accepts alphabetic markers

Enter sta_ID value_marker (i.e. rbya2 25.6b) (qq to quit): **acla2 42.6c**
 Could not find the requested slope profile (ACLA2 c)

SLOPE_TO_STAGE CALCULATION
Note: this program only accepts alphabetic markers

Enter sta_ID value_marker (i.e. rbya2 25.6b) (qq to quit): **qq**

4.0   Additional Information

Slope profiles are referenced by the station and marker (e.g.; slope profile "RBYA2 a" is different than "RBYA2 c"). This program will use the most recent slope profile for the given station/marker combination. (This program is meant to be used for quickly getting an estimated stage, and so use of current data is assumed.   The subroutine which reads the profiles and calculates the stage can use a date-of-reading to determine if an older profile is needed, thus it can be used in other programs which may use older data.)

Slope profiles in the Alaska Region are in the form of a table of slope distance-elevation (stage) relations determined by surveying down a stream bank from a gage marker to the stream. A slope gage consists of one or more slope markers placed at different elevations on the bank. The stages determined from these slope profiles are estimates because there are several possible errors in the measurements, including: observers not taking the same line as the surveyors from the gage marker to the stream edge, observers not properly connecting the tape to the marker and/or not pulling the tape taut, and stream bank profiles changing between surveys due to erosion/deposition processes (and/or human activities).

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Readings are taken by hooking a measuring tape (marked in 10ths of feet and provided by the APRFC) to the slope marker closest to (but above) the waters edge and measuring the (shortest) distance to the waters edge. This distance and the associated marker form the "slope reading."

5.0   Troubleshooting Information

If for some reason the application fails, contact the RFC Support Group.

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