Conservation of surface and ground water in a Western watershed experiencing rapid loss of irrigated agricultural land to development

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Activities and Results to Date
• Received input from stakeholders at formal and informal meetings
• Compiled database of platted subdivisions
• Investigated types of water rights transfers that accompany development on irrigated land
• Measured seepage rates in irrigation canals
• Estimated water budget for irrigation system

Introduction
• Irrigated land is being replaced by housing and resorts.
• Changes in irrigation practices on agricultural land have decreased ground-water recharge.
• Trend in decreasing ground water levels could be further aggravated by suburban/resort water use practices.

Objectives
• Model ground and surface water flow under historic, current and future land and water use scenarios.
• Identify factors that influence water use in developments.
• Provide information to stakeholders and decision-makers.
• Develop strategies to increase water availability for agriculture but enhance ecological benefits in key streams.
• Train an interdisciplinary team of graduate students.

Study Area
• Henry’s Fork, ID & WY
• 3200 square miles
• 275,000 acres irrigated
• Agriculture and tourism are largest industries

Activities and Results to Date

Cumulative area of subdivisions platted since 1970.

Conclusions
• Development has replaced irrigated agriculture near Rexburg and in Teton County.
• The canal system currently recharges 32% of surface water withdrawn (550,000 acre-feet) to local and regional aquifers, which support many uses and resources.
• If loss of irrigated land results in decreased delivery through the canal system, ground-water levels could continue to decline, reducing supply for domestic, commercial, and agricultural use.
• However, transfer of land out of agricultural production may provide opportunities for alternative management and uses of water formerly used for irrigation.

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