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Abstrak

ABSTRAK

The retirement of land from agricultural production as a means of reducing the volume of sub-surface drainage generated in the Western San Joaquin Valley, Calif., is under consideration. Reticence among local farmers and water managers renders only willing-seller land retirement feasible. There is an interest to acquire land that will generate the maximum possible drainage reduction relative to a "no retirement" baseline. An investigation was conducted to determine the drainage reduction potential of the retirement of (1) parcels that span land underlain by tile drains and land free of drainage infrastructure; (2) a "downgradient" parcel plagued by shallow ground water and equipped with subsurface tile drains; and (3) an "upgradient" parcel overlying well-aerated soil requiring no drainage. Long-term modeling with a deforming finite-element model suggests that the contiguous retirement yields the greatest drainage reduction. For single parcels, the 31% drainage reduction potential of downgradient retirement appears more attractive than the 16% drainage reduction associated with upgradient retirement.