

# CASED-HOLE PUNCH SEEDER<sup>1</sup>

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**Abstract:** Diversity in species and landform are desired attributes of wildland seedings. Rocky, uneven seedbeds promote diversity; awned and fluffy (trashy) seed material is inherent in diverse, wildland seed mixes. Neither situation is conducive to drill seeding. Many native-plant seeds or diaspores cannot be uniformly metered. Further, native woody plants grow slowly and do not survive competition with herbaceous species. Broadcast or drilling can be a waste of expensive seed. A different approach is needed for the special circumstances associated with restoring the diversity of wildland landscapes. The Cased-Hole Punch Seeder (CHPS) and seeding method is an alternative to drilling and broadcasting. Punch (dibble) planting places seeds at the bottom of open holes punched deeper into the soil than the normal planting depth. The advantages are; (1) moisture, temperature, and the concentration of soil salts in the vicinity of the seed are usually more desirable than at the soil surface, (2) seedlings avoid emerging through soil crust and begin photosynthesis sooner, (3) seedlings are more protected from freezing, wind, and other environmental stresses. Punch planting has not been practical because punched holes slough, burying seeds too deeply. The CHPS overcomes this problem by casing punched holes with plastic tubes which project above the soil surface to prevent surface water from filling the hole with silt. Open-top, closed-top, and self-anchoring casings have been used to stabilize punched holes at a materials cost as low as 1.7 cents per hole. Seedling establishment of native species using CHPS has usually been better ( $P < 0.05$ ) than that obtained by standard planting methods.

**Additional Key Words:** Reclamation, seeding method, seed safe site.

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