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Global Patterns of Annual Actual Evapotranspiration with Land-Cover Type: Emerging Patterns from New Databases

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Advances in our understanding of how evapotranspiration varies spatially and with land cover type are needed to improve predictions and mitigation actions for our future earth system. Land cover types exert a complex pattern of controls on ET, through pathways related water availability, energy availability, stomatal conductance and turbulent exchange. Novel global ET databases that classify ET by land cover type provide powerful characterizations of how global ET patterns vary among land cover types. This new information reveals that some areas of the globe are more sensitive to land cover change than others, with implications for global land use planning. The new information also reveals that there are fundamental land cover characteristics that affect ET variability with land cover type at the global scale, with implications for uncertainty analysis.