1128-15-194 **Michael Kasigwa*** (kasigwam@gmail.com), Department of Mathematics and Statistics, Washington State University, P.O. Box 643113, Pullman, WA 99164. *On Characterising Eventually Positive Linear Operators and Invariance.*

Notions in the theory of nonnegative matrices are generalized to cones with discussion of equivalances on transition from entrywise nonnegativity to a more general operator theoretic approach. Berman, Neumann and Stern (1989), showed that essential cone-nonnegativity of a real square matrix A and eventual exponential cone-nonnegativity are not equivalent for non-polyhedral cones. If A is an eventually nonnegative matrix and the index of zero, as an eigenvalue, is less than or equal to one, many of the combinatorial properties of A carry over to those of $A^m \geq 0, m > 0$, Carnochan and McDonald,(2002).In particular A and A^m have the same Frobenius normal form, a fact that was used to prove that eventual nonnegativity and eventual exponential nonnegativity of A are equivalent,Noutsos and Tsatsomeros,(2008).However such a generalization fails for eventual cone-nonnegativity and eventual exponential cone-nonnegativity. We conclude with a mention of work on inverse positivity of M-type matrices,Le and McDonald,(2006), recent work characterising eventual positivity of semigroups of linear operators using resolvent properties of the generator and Perron-Frobenius type conditions, Daners, Glück and Kennedy,(2016) and further work. (Received February 26, 2017)