

Success of post-fire plant recovery strategies varies with shifting fire seasonality.

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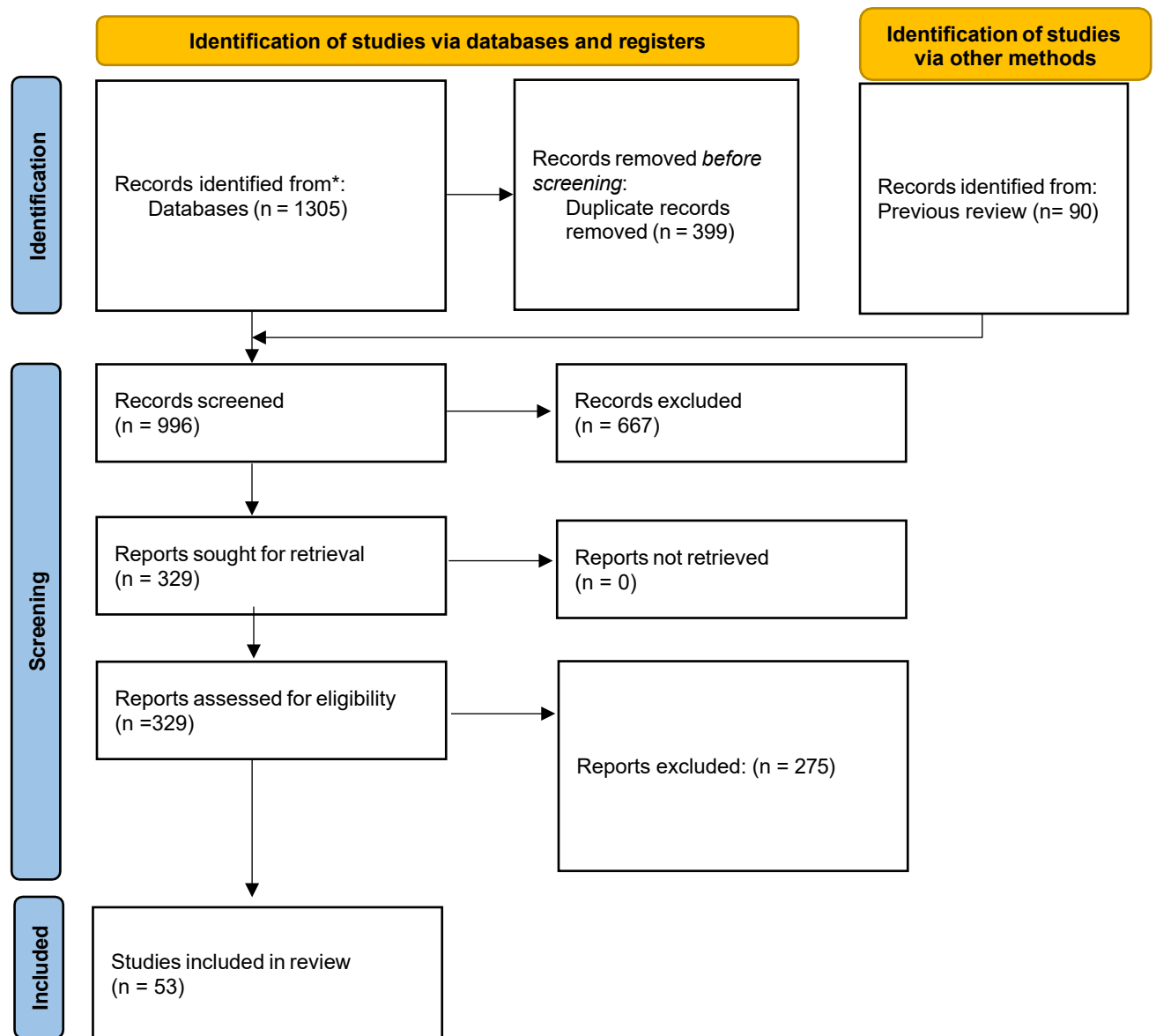
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Supplementary Material: Success of post-fire plant recovery strategies varies with shifting fire seasonality.

Supplementary Figure 1: PRISMA 2020 flow diagram for new systematic reviews

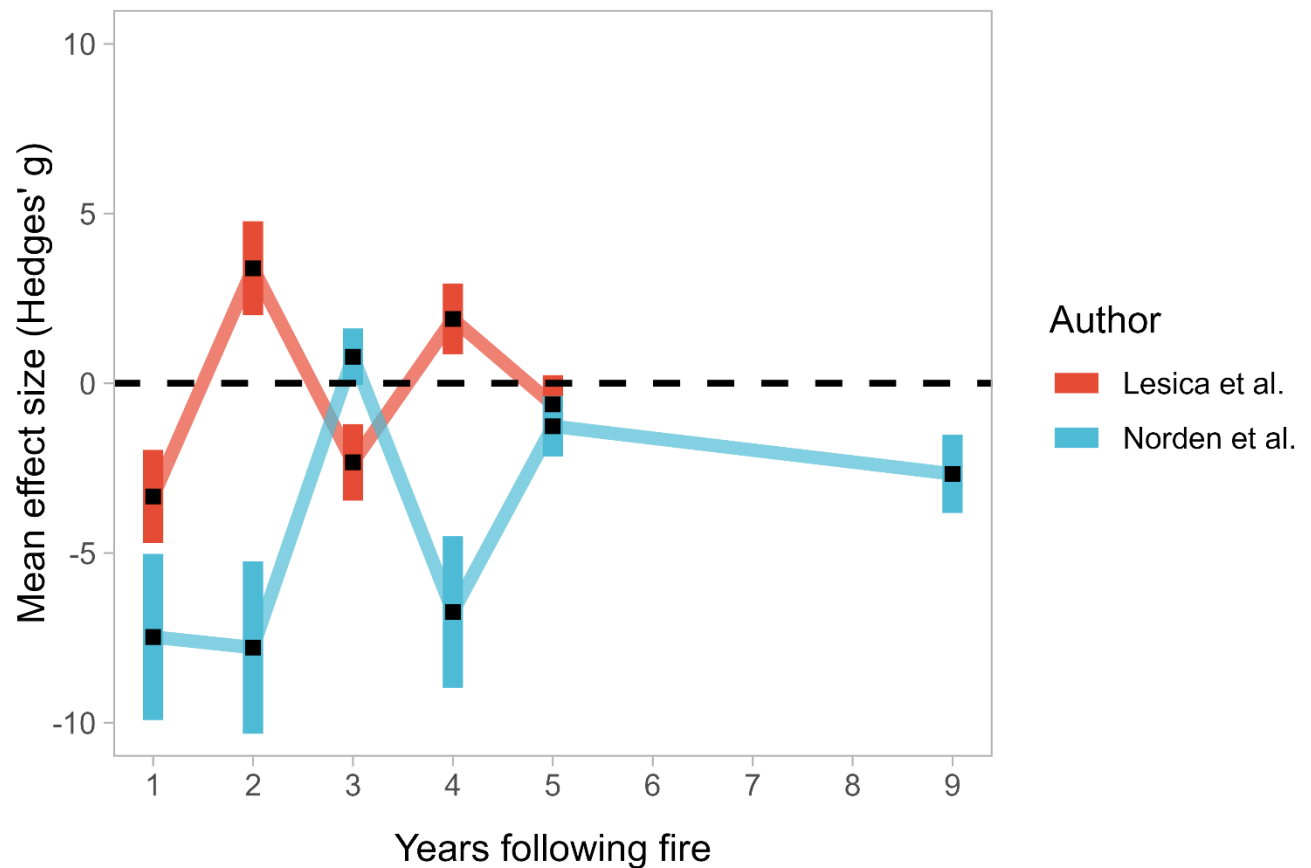


Supplementary Figure 1: PRISMA 2020 flow diagram for new systematic reviews: *PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers and other sources used in developing the dataset used in this paper. From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: <http://www.prisma-statement.org/>*

Supplementary Figure 2: The effect of measurement time of post-fire seasonality effects.

To ensure robust comparative analysis among multiple studies, we aimed to sample consistent analogous measurements. Across much of the fire seasonality literature, post-fire measurements occur over a range of timescales, often driven by the targeted stage of interest. Some studies report measures of the same response trait in successive years post-fire, while others may have measured the same response variable but have selected different post-fire age stages to sample. In two examples^{1,2} that conducted measures of plant survival of resprouting species in successive years as a case study (Supplementary Figure 2) the difficulty of attributing plant responses to a fire event becomes increasingly difficult as time since the fire event increases. Beginning immediately post-fire (one-year post-fire) plots were measured consistently over the first 5-9 years following fire. Both studies measured mean survival of resprouting plants, but as demonstrated (Supplementary Figure 2:), effect sizes between years varies greatly and finding commonality between the two studies is difficult. For example, plant survival assessed one year following fire can be attributed to both the fire event and the relatively short period since the fire (i.e., approximately 12 months). As time continues, the influence of post-fire conditions increases relative to the fire effects, as weather (i.e., drought) and, or other secondary disturbances (i.e., disease) can increasingly affect plant response. In the few cases within this data set that have reported measures of the same response trait in successive years, we only included the initial time point measurement and discarded successive measurements. We chose this method for two reasons; 1) it most logically aligns with the fire effects instead of the post-fire conditions that may influence downstream plant responses and 2) repeated measures lack independence, which is an assumption for our analysis.

Supplementary Figure 2: The effect of measurement time of post-fire seasonality effects.



Supplementary Figure 2: The effect of measurement time of post-fire seasonality effects. The above figure represents two papers^{1,2} that conducted measurement of plant survival of resprouting species in successive years. Beginning immediately post-fire (one-year post-fire) plots were measured consistently over the first 5-9 years following fire. Both studies measured mean survival of resprouting plants, but as demonstrated, effect sizes between years varies greatly and finding commonality between the two studies is difficult.

- 1 Lesica, P. & Martin, B. Effects of prescribed fire and season of burn on recruitment of the invasive exotic plant, *Potentilla recta*, in a semiarid grassland. *Restoration Ecology* **11**, 516-523 (2003).
- 2 Norden, A. H. & Kirkman, L. K. Persistence and prolonged winter dormancy of the federally endangered *Schwalbea Americana* L.(Scrophulariaceae) following experimental management techniques. *Natural Areas Journal* **24**, 129-134 (2004).