



# Egler's \$10,000 Succession Challenge

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## Abstract

Frank Egler was a proponent of a variant of Gleasonian succession called “initial floristics,” which suggests that the early establishment of plant species has a great influence on later vegetation succession. In contrast, Clementsian succession suggests that vegetation progresses in stages to a climax. Historically, this idea has been widely held by teachers and managers, but Egler did not observe this type of succession. Egler offered a \$10,000 reward for anyone who could give an example of vegetation stages progressing to a climax stage in support of Clementsian succession. No one has successfully challenged Egler's concept. Initial floristics as a variant of Gleasonian succession has withstood many decades of scrutiny.

## Keywords

Climax · Clementsian succession · Gleasonian succession · Individualistic concept · Initial floristics · Relay floristics

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## Introduction

Frank Edwin Egler, Ph.D., was an eminent plant ecologist and conservationist in his time. Born April 26, 1911, in Manhattan, NY, he was drawn to nature and analytical thinking. As a college student, he studied under such noted ecologists as Henry Cowles (Chicago), William Skinner Cooper (Minnesota), and George Nichols (Yale). He earned his Ph.D. from Yale University in 1936 and went on to publish over 400 papers and five books. He eventually made his home on his family's summer home in Norfolk, Connecticut, which came to be known as Aton Forest. By the continual acquisition of adjacent properties, Egler eventually amassed over 1,100 acres of forest lands, old fields, and wetlands, mostly kept as a natural area (as free as possible from human interference). These lands were his base of operations and his inspiration, on which he conducted much of his research, especially applied ecological vegetation management. Egler died on December 26, 1996. He left his estate to a nonprofit conservation organization that he founded called Aton Forest, Inc. The property continues to be owned and managed by Aton Forest, Inc.; its mission is to carry on Egler's legacy of scientific research and conservation activities.

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## Ecological Theories

Early on Egler found himself in a controversy over the ecological theories of plant ecology. Fredric Clement proposed the dynamic ecology concept (see Allred and Clements 1949), which came to be known as plant succession to climax, where discrete plant communities not only succeed one another in a deterministic way but each proceeding stage preparing the way for the next stage. The final stage would vary with climate, but would be stable, i.e., the climax. Henry Gleason proposed the individualistic concept (Gleason 1926), where individual species associate with one another to form communities, a low degree of holistic integration, but in a nondeterministic way. Egler proposed a variant on Gleason's individualistic concept, which was called initial floristic composition (Egler 1954), where early establishment of plant species had a great influence (barring external effects of, e.g., fire, flood on the future development of succeeding plant communities). During his life, Egler repeatedly pointed out that the title of his paper was Initial Floristic Composition: *a factor* in old-field vegetation development. In this paper, he renames Clement's plant succession concept as Relay Floristics and acknowledges that it does play a role in vegetation development, but is not the sole or even the most important factor.

As Egler developed his ecological and vegetation insights into applied science and specifically right-of-way vegetation management, the importance of this distinction of concepts came to light. The assumption, for example, that a shrub community is the natural and necessary stage to proceed a pioneer forest type would naturally influence management decisions. From this perspective, shrubs pave the way for trees, so it would be logical to get rid of the shrubs if you do not want trees. If initial floristic composition is more important, then eliminating trees

early on should prevent a future forest if the shrub community resists rather than encourages new tree invasion. Egler spent much of his professional life investigating and demonstrating these ideas. He was vexed that so often he came up against the belief in a succession to climax theory from land and vegetation managers and students and teachers, despite the fact that Clement's concept had lost favor or been discounted by ecologists.

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## Egler's Challenge

With the publication of his two-volume book *The Plight of the Right of way Domain: Victim of Vandalism* (Egler 1975), Egler printed in its appendix his \$10,000 Challenge (p. 283). Here he offers a reward for any ecologist who can scientifically prove the cause and effect relationship of Clementsian Relay Floristics through at least five stages of development over a minimum of 25 years with evidence to be judged by a panel of noted ecologists. No one ever took him up on this offer. Egler did speak about being referred to someone in Ohio who was managing vegetation where tree invasion into dense shrub stands was common. He contacted the person and went to Ohio to see the site and discuss its history and the observations that had been made. He was told, yes, trees were very commonly growing up through the shrub canopy, and after some further questioning, he was told, "But I don't know which are older, the shrubs or the trees." This, of course, is the essence of the whole argument!

So the Challenge stands unchallenged. Many foresters and right-of-way vegetation managers now acknowledge the significance of Egler's ideas to their planning and work, though full understanding and implementation of his concepts and management practices is yet to be realized.

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