

# Autumn Forest and Landscape Color

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It is not necessarily the single tree and its colored leaves we most appreciate. As annual flowers may be massed together to yield a spectacular color show, trees can be seen as massed across a landscape in fall. The large swathes of tree colors blanketing autumn landscapes can be fantastic.

## Peak Color Is An Opinion

The desire of people to see the best colors nature offers means a time of the peak color presentation must be estimated. This estimation process is fraught with problems because predictions are only as good as weather forecasts, tree health, and good chance allows. In addition, human eye-sight and color recognition play a strong role in judging the quality and quantity of landscape color.

Across a forested or tree-covered landscape, human color perceptions differ as much as tree colors. Some people enjoy and notice the early yellow stages of coloration. Others most appreciate the contrast during the orange color peak. For other people, the deep reds and purples of late fall represent the best color presentations. The best colors are ones you can see and enjoy. Even color-blind people can enjoy the differences in texture and color contrasts developed in the fall. Any excuse for communing with trees and forests is a good thing.

## Prediction Features

The key features of predicting fall colors and their peaks are:

- 1) leaf volume -- how many leaves are entering the color season still attached to their trees as compared to normal;
- 2) leaf health -- how damaged and disrupted are leaf surfaces from pest and environmental problems;
- 3) long-range weather forecasts for temperature, sunlight/cloudiness, and precipitation over the color period and the previous few months;
- 4) actual temperature and precipitation over the last half the growing season, the whole growing season and the previous year's growing season;
- 5) the timing and extent of key species with premature and early leaf senescence; and,
- 6) examining historical records of peak color days from the past decade.

## Catching The Waves

To understand landscape-level fall coloration, a simple flow and wave model can be used. Coloration changes begin at high altitudes and latitudes and observationally flow down-slope and southward. The coloration advances in three primary waves in mixed hardwood forests. The first wave is yellow dominated. The second wave is an orange. The third and final wave is red. Each wave, depending upon location is separated from the



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next wave by anywhere from seven to sixteen days. Most humans consider peak color occurring just after the orange wave has swept by. After the red wave hits, the landscape slowly fades to brown. (Note Figure 1)

As color waves move southward, conditions yielding the best color presentations are not present or as strongly expressed. The color waves eventually pass southward and are quenched in the evergreen forests of the Southern Coastal plains. Visualizing color waves sweeping over the landscape can help in explaining color changes and associated environmental changes occurring in fall.

### Color Endings

As fall progresses, the last pigments fade and the leaves fall away to carpet and enrich the forest floor. Even as this year's leaves are raked, tree buds have next year's leaves set to grow. Life processes continue in the rest of the tree to ensure surviving the winter. Fall colors represent not a last gasp, but a first breath of a new spring. Next year with spring bud break, chlorophyll nets will again come out with fall colors shadowed beneath their surfaces.

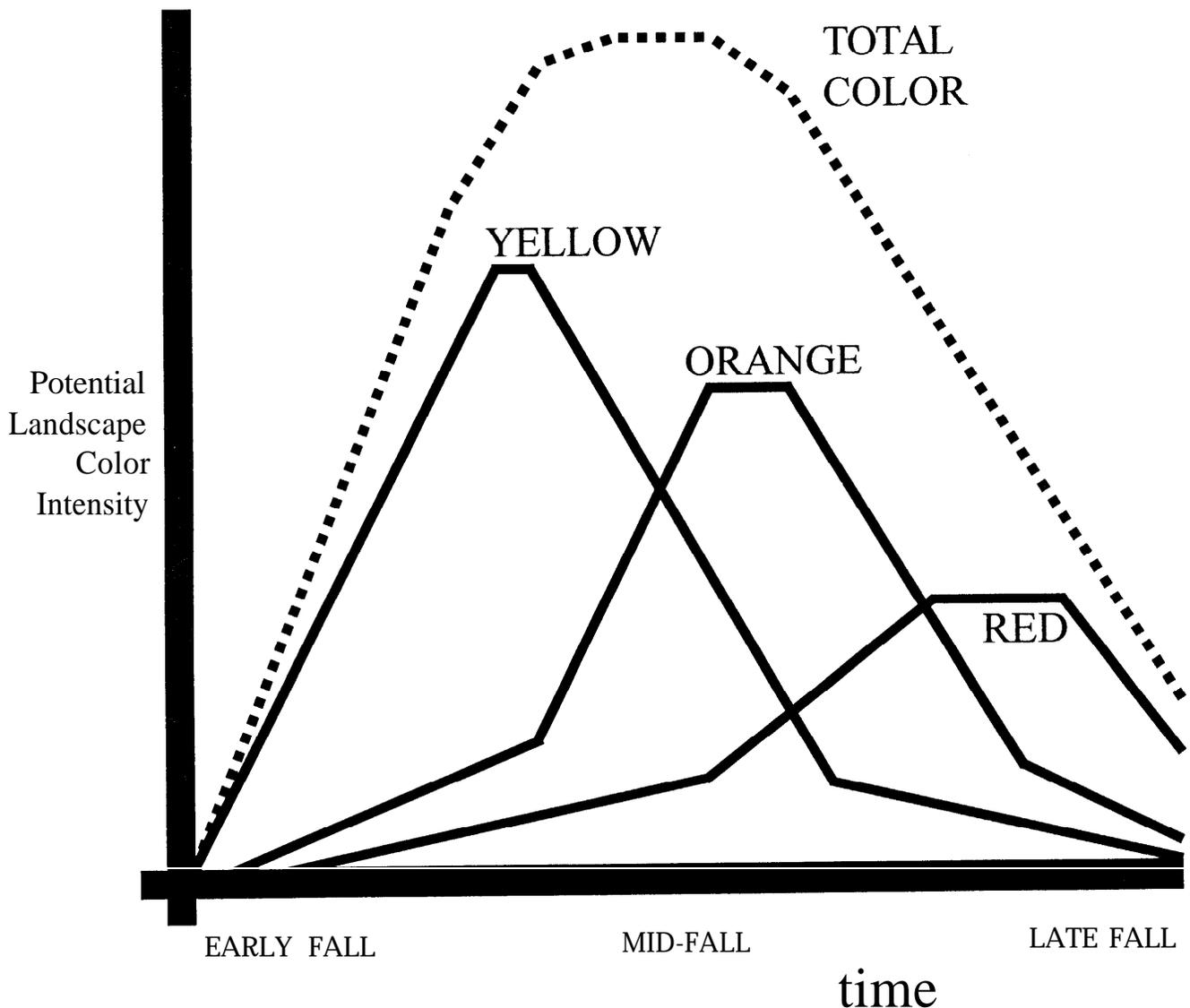


Figure # 1: The three principle forested landscape color waves over the fall season.