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空中写真による北八ヶ岳の伊勢湾台風風倒跡地の抽出と現在の森林構造
Mapping of forest area blown-down by the Isewan typhoon and the structure of current forests in Northern Yatsugatake

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Subalpine forests are susceptible to strong wind. Therefore, strong wind storm, such as typhoon, is an important disturbance which consequently in?uences structure, dynamics and landscape of subalpine forests in Japan. The Isewan typhoon was the one of the strongest typhoon in 20th century, and destroyed a vast area of forests of central Japan in 1959. However, there are only a few detailed data on where the forest has been disturbed by the typhoon. In this study, the area disturbed by the Isewan-typhoon was mapped for the subalpine region in Northern Yatsugatake by using air photographs. Further, biomass, productivity and forest structure derived from field survey in the disturbed area were compared with that in the undisturbed area.

Aerial photographs taken in 1962 revealed that 10% of the studied forest area was blown-down by the typhoon, especially heavily on a western slope of Mt. Shimagare and Mt. Chausu (Fig. 1). From aerial photographs taken in 1966, blown-down trees were removed from most of the disturbed area. The above ground biomass of disturbed stands was 70% smaller than that of the undisturbed stands in 2012. The recent growth in biomass in disturbed stands is twice as high as that of undisturbed stands. Although both disturbed and undisturbed stands were dominated by *Abies* species, the disturbed stands lacked *Tsuga diversifolia* and *Picea jezoensis* var. *hondoensis*, compared with the undisturbed stands.

These results indicate that a single super typhoon can destroy a large amount biomass of a subalpine forest and have a large influence on structure and dynamics of a forest even 50 years later.

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