

# Road Rights of Way: Receives ASLA Award

By Katy Amon, MLA

Katy Amon wowed jurors in this year's installment of the ASLA Student Awards Program, earning an Honour Award in the Research Category and reaffirming UBC's reputation as one of North America's leading research institutions for landscape architecture. In this excerpt, Katy summarizes the key ideas of her winning project.

**In developed areas it can be difficult to acquire land of adequate quality and quantity to create functional and connective ecological corridors.** Using birds as a biodiversity indicator, this project develops a transferable methodology for integrating viable ecosystems and habitats into marginalized urban spaces to augment quality and connectivity across scales. Road rights of way in the Hyland Creek Watershed in Surrey, BC are used as case studies to explore the integration of avian habitat, ecological function, and human programming as connective conduits. The project investigates the application of these layers through a variety of landscape types including suburban, urban, rural, and industrial.

Habitat models were created for nine indicator species, used as surrogates to indicate the presence of a set, or guild, of other species. Birds were selected because avian decline is often considered a surrogate measure for overall biodiversity. Of additional local significance, Surrey is located in a critical position on the Pacific Flyway migratory route. Optimal ecosystem conditions, including spatial attributes and recommended

plant lists, were modeled, paying explicit attention to the ecological processes that support the modeled species. These were used to inform the development of appropriate roadside habitat types that could function in linear configurations and could be exposed to right of way conditions. Species modeling provided informed landscape

types preferred for a variety of day-to-day avian activities, while also highlighting the symbiotic spatial relationship between humans and birds.

Design interventions focused on collector and arterial streets. They create the biggest fragmenting impact, but also offer the widest design

spaces for possible habitat integration and the most potentially connective. By slightly narrowing the traffic lanes to a standard of 3.35m roads become safer places and afford larger available habitat widths of 4 to 10m. As block sizes of collector and arterial streets are 800m in length in this community, 5,400 to 16,000m<sup>2</sup> of available habitat space can be afforded on each linear block, even accounting for sidewalks, driveways, and local streets — as a reference point, a Canadian football field's area is 8,000m<sup>2</sup>. This is a significant amount of available linear

habitat, especially when applied across a large landscape.

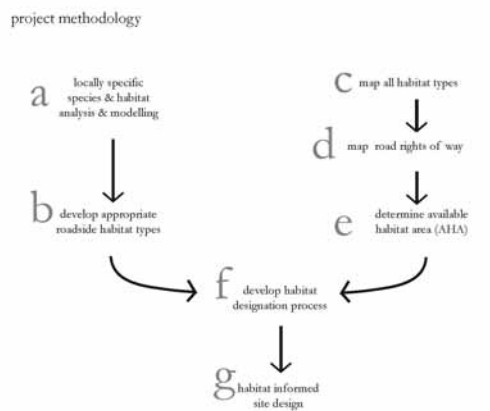
The knowledge attained in a literature review, modeling, site analysis, and site design exercises was used to develop a systematic habitat designation process. Selected site designs were used to test and simplify the resulting transferable habitat designation process.

This project makes two significant contributions to the existing body of knowledge: a methodology, and a design precedent. Dramstad, Olson & Forman (1996) have provided significant theoretical work in the area of landscape ecology, a discipline that focuses on the "structural pattern of a landscape or region." This project offers an example of fine-grained transferable landscape architecture work within the context of landscape ecology principles, illustrating the use of locally specific species and ecosystem modeling.

This project provides site and community scale examples of street designs with both explicit human and habitat goals.

There is a growing body of work on altering typical gray roads to green streets. Even when habitat is included in goal statements there are either no specific habitat creation actions taken, or they are very general and are not site or region specific. Scientific research supports the premise that road rights of way as narrow as 1-5m are used as foraging ground, for nesting, breeding, and movement between larger habitat patches. This project provides site and community scale examples of street designs with both explicit human and habitat goals. The primary significance of this research is that it led to the development of a site-specific habitat designation methodology. If applied, this could significantly increase the quality and quantity of viable habitat area, which could considerably strengthen a community's role in maintaining biodiversity across scales.

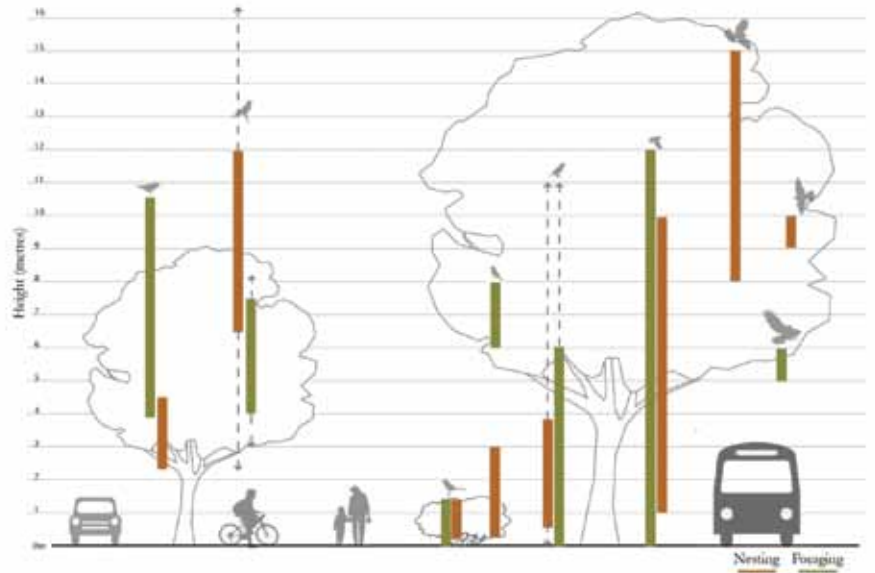
The proposed methodology offers a user ►



Although this project focused on road rights of way, the methodology was designed to be applicable to a variety of marginalized spaces. As shown here, the methodology begins in two parallel streams.

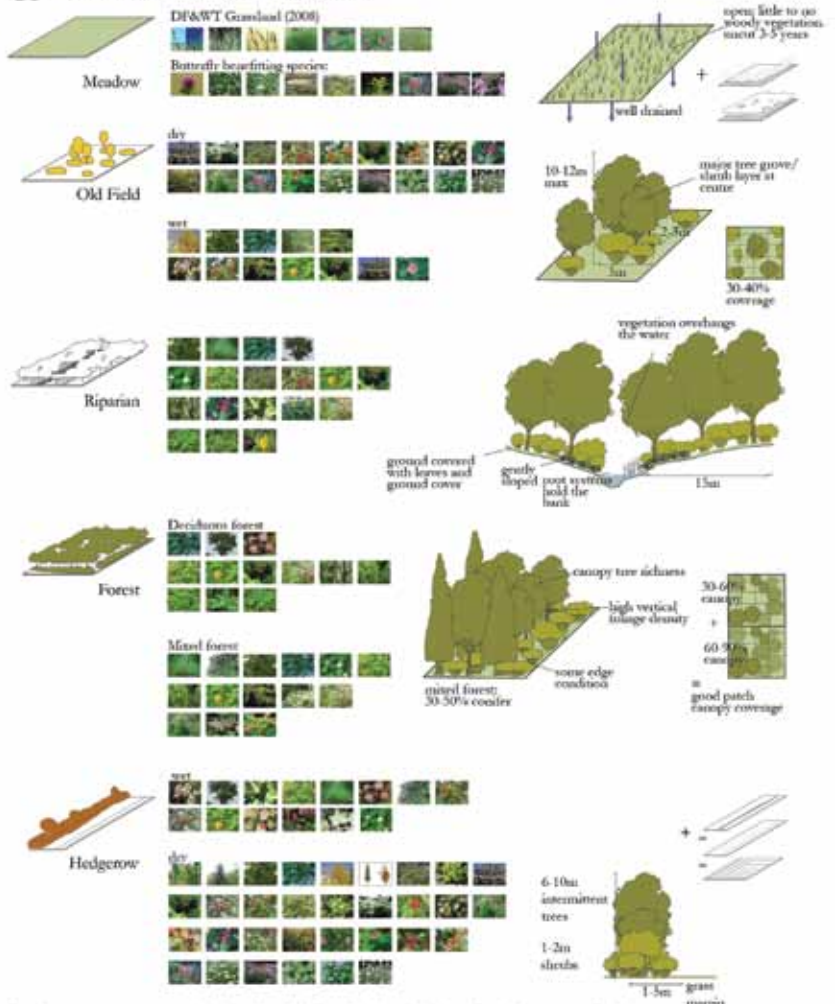
friendly tool to increase the habitat potential of marginalized spaces in the developed landscape and as a result, the potential for a much greener public realm. This methodology allows for landscape architects without specializations in ecology to make decisions that are more informed. It will increase the level of detail typically employed, going beyond generalized spatial patterns and guidelines to a community and site-specific habitat creation approach that results in site and context appropriate design outcomes. 51

### human and avian symbiosis



This spatial relationship demonstrates the heights at which the species forage and nest compared to our typical road right of way activities. Even in the case of low nesting or foraging species they will seldom travel more than two metres from dense vegetation. This allows for a symbiosis of use of this space between humans and avian habitats.

### a ecosystem optimal conditions



Local ecosystem types were analyzed and modeled, resulting in plant lists and spatial structures for five types.