Attract and Protect

Why?

- Beneficial, Active and Important Members of the Food-web – dragonflies are harmless and highly beneficial. They don't sting, bite or carry diseases. They spend their entire, multi-staged lives (gill-breathing, aquatic larvae and then air-breathing, winged adults) voraciously consuming thousands of insects and other small creatures. Prey items include gnats, mosquitos, horseflies, grasshoppers, caterpillars, stinkbugs and other insects that can become pests if their populations grow too large. Dragonflies, both larva and adults, are also important food for many animals, including songbirds, small raptors, diving ducks, herons, rails, bitterns, turtles, frogs, fish, praying mantids, spiders and many wetland mammals.

  In short, dragonflies help manage insect populations and provide food for many other animals - they hold an important position in many foodwebs, with endless threads leading to and from their lives.

- Indicators of Biodiversity, Ecosystem Health and Watershed Quality – Because dragonfly larva live underwater, their presence, or lack thereof, can indicate the health of the streams, rivers and wetlands in your watershed. Add the fact that many of the 70+ species living in Northern VA are habitat specialists, and you can use their presence to help gauge the health of *specific* habitats. Does your watershed have healthy, functioning, sustainable forest seeps? To begin answering that question, look for petaltails, spiketails and striped emeralds. Are your local streams and rivers in good shape? Look for clubtail species diversity. Are your ponds and marshes diverse ecosystems? Look for pennants, twelve-spotted skimmers and meadowhawks.

  Adult dragonflies are showy, visible and relatively easy to ID with practice and the right tools. Please use this website as an **environmental assessment tool** to learn more about your neighborhood's watersheds. If you find a species marked with the label **Habitat Conservation Alert!**, you'll know that a habitat worth protecting, *that needs your help*, is nearby. The species in question may not be "rare", but this label indicates that its aquatic larval habitat is disappearing in Northern VA and needs your help to survive. Use the presence of our **less common dragonflies** to excite and motivate your local community into protecting, restoring and conserving the streams, ponds and forest seeps in your neighborhood.

- Educational Tools and Environmental Ambassadors – Dragonflies create endless teachable moments and illustrate many environmental principals. It's hard to picture a better tool for teaching people about foodwebs, adaptations, micro-habitats, watersheds, life-cycles and many other biological principals. These colorful, acrobatic, interesting insects draw people into watershed dynamics and can serve as inspirational **ambassadors** for important environmental issues.

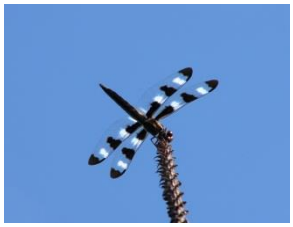
- Beautiful, Fascinating and Entertaining – Why attract and conserve dragonflies? Because they're bizarre, beautiful and super fun to watch! Forget all the above reasons I've listed – do it because landscapes with lots of dragonflies are simply much more **interesting** and fun than landscapes without them ☺ Who *doesn't* want darners, emeralds and spiketails zipping, dipping and diving through the air in our backyards, neighborhood parks and river systems?

How?

There are almost endless ways to help attract and conserve Northern VA's dragonflies, ranging from super-simple backyard projects, to getting involved with regional watershed planning. The single most important word to remember for dragonfly conservation is **WATERSHED!** I've walked through healthy, almost pristine forest systems in Northern VA that were virtually devoid of dragonfly diversity, because the unhealthy streams flowing through them started a mile away on a golf course or highway road-shoulder. To truly keep a natural area healthy, productive and sustainable, you have to protect the surrounding watershed – dragonflies illustrate that idea wonderfully. If you want a healthy, diverse woodland ecosystem, trace the origins of the stream or river that runs through it and protect the land bordering its source. **Keep your woodland's WATERSHED protected and in mind, when you're planning for its long-term biological future.**

The following list organizes dragonfly conservation efforts according to **how much impact** they will have. Small-scale projects will have some positive impact, large-scale will have significantly more. The smallest efforts are worthwhile and can make a difference – you decide how much effort and impact you want to attempt. Obviously you'll help more dragonflies by protecting an entire watershed than installing a single rain barrel, but both endeavors are worth doing, and who knows… installing a rain barrel may eventually inspire your neighbors to get involved with stream conservation and watershed planning. **Start small with what fits your life, and if your time and interest in conservation grows, you can always do more.**

Following are <u>brief</u> explanations for a list of conservation efforts – springboards that will hopefully peak your interest and give you a **menu of actions** to choose from. To learn more and find all the **how-to details**, I suggest checking out Resources – Conservation Organizations



CONSERVATION – what YOU can do, from small to big

Small-scale:

- *Rain Barrels* – usually made from durable plastic, these are available in many colors, designs and sizes, and are very easy to assemble, install and maintain. They collect water from the impervious surface of your roof (via gutter downspouts), therefor slowing stormwater before it flows into your neighborhood's streams. The flush of stormwater that comes off impervious surfaces like roofs, driveways and parking lots can cause erosion and siltation in local streams. Your rainbarrel, especially if it inspires your neighbors to do the same, can reduce the impact of stormwater on local streams. I would suggest a barrel that holds 40-70 gallons, includes an overflow spout, mosquito screen and a garden house attachment nozzle. Start with one or two – an average townhouse could use about 4, large houses a few more.
- *Rain Gardens and Bio-swales* – the basic idea here is to capture stormwater in an attractively planted low spot, slow it down, remove particulates, and allow the water to filter slowly into the surrounding watershed. These can be very simple or quite complicated – you can decide how big or small of a project you want. They can be designed to hold water too briefly to support mosquitos, and landscaped with beautiful, low-maintenance, flowering wetland wildflowers and shrubs. The end result is an attractive, lush garden that just happens to slow stormwater before it rushes into fragile stream systems.
- *Backyard Dragonfly Pool* – a great way to attract dragonflies, damselflies, frogs, salamanders, butterflies, songbirds, box turtles and native bees to your landscape - see Wildlife and Dragonfly Pool at the end of this section for details.

Medium-scale:

- *Exotic Wildlife* – releasing exotic/non-native animals into your watershed can cause serious problems for many species of native wildlife, including our dragonflies. Snakehead Fish, Goldfish and other exotic fish can have serious affects on our native fish, amphibian and dragonfly populations. Exotic wildlife leave their predators behind in their countries of origin, over-populate here in Virginia's ecosystems, and can cripple native foodwebs. You can help dragonflies by not releasing exotic fish into local waterways.

- *Fertilizers* – reducing lawn fertilizer is one of the *best* ways to help Northern VA's watersheds, and all the plants and animals that live there, including dragonflies. All those extra nutrients, whether they're organic or chemical, can cause havoc in stream, river and wetland systems. They start a chain-reaction that leads to reduced levels of dissolved oxygen, algae problems and altered foodwebs. You don't have to eliminate fertilizer use, just *reduce* the amount as much as possible, avoid applying close to rain events, and **apply in fall** instead of spring.

- *Pesticides* – large amounts of pesticides not only kill aquatic dragonfly larvae, but many other creatures, such as mayflies, stoneflies, crayfish, fish, salamanders, frogs and birds. Just as with fertilizer, you don't need to eliminate all pesticide use, just reduce by only using when absolutely necessary. Be sure the plant, insect or fungi you're spraying is actually a pest – at least 75% of the insects in your yard are harmless or beneficial. When you do use pesticide, use something as safe, specific and natural as possible, and don't apply right before a storm.

- *Impervious Surfaces* - surfaces that do not absorb water (roofs, roads, parking lots, concrete ditches/culverts, etc.) create powerful flushings of sheetflow stormwater that tear across our landscape after a storm and hit our streams and rivers with more force that these waterways can handle. Our waterways evolved to handle stormwater that trickles through forest canopies and filters through vegetation, leaf litter and root systems. The torrents of stormwater that pour off of roadways, parking lots and concrete culverts tear stream banks apart, dump silt on the eggs and gills of aquatic creatures and turn shallow streams into steep ditches with very little life. Reduce the effect of impervious surfaces in your neighborhood by using porous driveway pavers, gravel instead of asphalt, rainbarrels and rain gardens, and opposing unnecessary or over-sized roadways, parking lots and concrete culverts.

- *Shoreline Maintenance and Landscaping* – **One of the simplest, most effective and attractive ways to help dragonflies** (along with much other beneficial aquatic wildlife) is to allow a planted buffer along the shoreline of every stream, pond, lake and other waterway in your community. This can simply be done by not mowing down to the shoreline, leaving a buffer of at least 5 feet along all stream and pond banks. The grasses, wildflowers and tree seedlings that spring up on their own will filter stormwater pollutants, restrict Canada Goose traffic and provide excellent habitat for dragonflies, damselflies, frogs, turtle nests, herons, swallows, song sparrows, praying mantids, butterflies and countless other beneficial wildlife. These buffers will NOT attract rats (who need garbage, not tall grass), water moccasins (who don't live north of Richmond) or mosquitos (who live in water, not tall grass) – the three reasons people often feel that shorelines buffers should be removed. To maintain your water view and prevent tree growth, simply mow your shoreline buffer annually (mow Nov.-Feb. to avoid harming wildlife). To add color and landscape appeal, augment your shoreline buffer with native wildflowers (seeds, plugs and/or containers), including iris, coneflowers, joe-pye weed, bergamot, asters, milkweeds and cardinal flower. **Of all the conservation projects on this list, this may be the best for quick results, long-lasting benefits and an added aesthetic.**

- *Stream and Wetland Restoration Projects* – restoration projects done incorrectly can cause more harm than good. However, many of our local streams and wetlands are in seriously bad shape and in desperate need of ecological restoration. They are often so degraded, that very few biological functions are still taking place. Before engaging in any restoration project, make sure you talk with a long list of trusted natural resource and ecosystem professionals. 1) Get advice from people who will not benefit financially from the outcome. 2) Develop specific, realistic and measureable goals. 3) Use *before* and *after* data to both form and evaluate the project. 4) Use ecological and biological functions to guide the project, not just hydrological and engineering functions. 5) Design the project in a way that involves the least amount of collateral damage, the smallest construction footprint possible, and always uses native plants, and when possible, native soils. 6) Create a long-term management and maintenance plan.

Large-scale:

- *Protecting Our Parks and Natural Areas* – **Our parks serve as local biodiversity reservoirs**, essential for protecting Northern VA's species diversity and ecosystem health. Northern VA has an impressive amount and diversity of parkland (check out Best Park and Places for a list of great dragonfly-watching sites). Despite developmental sprawl, this area still holds remnant sections of healthy and productive streams, rivers, marshlands, swamps and ponds, full of dragonfly species – over 70 species live in Northern VA.

These protected areas area natural islands in a sea of suburbia. These "islands" are all that's left of the vast natural landscapes that covered Northern VA before European settlement. The wolves, wood bison, passenger pigeons, Carolina parakeets and American Chestnut that lived here in the 1700s have gone, but Northern VA's protected natural areas still hold a wealth of native wildlife. If we want *Gray Petaltails, Cyrano Darners, Sand-dragons and Arrowhead Spiketails* to remain part of Northern VA's landscape, we have to protect our parklands. If these dragonfly species - beneficial indicators of ecosystem health - are to continue gracing our weekend hikes with their aerial acrobatics, we have to protect, conserve and manage our local reservoirs of biodiversity.

Help preserve these natural "islands" by becoming an involved steward of your favorite neighborhood park. Join, or create, your park's *Friends of* group, volunteer to assist in conservation projects and wildlife surveys, ask how you can help conserve the surrounding watershed, and keep abreast of threats to your park's borders, waterways and management plans. Huntley Meadows Park and Bull Run Regional Park, both essential reservoirs of local biodiversity, were seriously threatened with large-scale road projects – local *Friends of* groups and concerned neighbors stopped both projects.

- *Smart Growth* – We all use and need roads, buildings, parking lots, schools and shopping malls, but suburban development can be done in a thoughtful, well-planned manner using basic Smart Growth principals. Cluster housing and shopping areas in order to leave plenty of in-tact natural areas, protect waterways with significant shoreline buffers, minimize new impervious surfaces and off-set existing hard surfaces with bio-swales, rain-gardens, pervious pavers, and vegetated storm-water detention areas. Use these same off-setting landscape techniques to **process stormwater on-site**, rather than transporting and dumping water into our streams with concrete pipes and culverts. Become an advocate for these techniques by getting involved with local development projects, your town's chamber of commerce, your HOA board, the county board of supervisors, and your state senate representative.

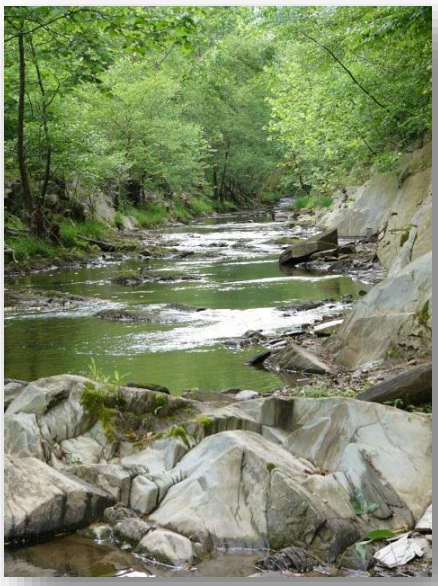
- *County, State and National Legislation* – let your representatives on the county, state and national level know that you care about watershed health, and you **vote!** If they know you volunteer at your local park, belong to civic groups and are aware of conservation issues, they're more likely to listen. Become educated and involved with wetland, watershed and water quality conservation efforts and legislation around the country. Dragonflies live in all 50 states, including Alaska - many are rare, and at least one (Hines Emerald) is federally listed as an Endangered Species. Pick a few environmental organizations that you trust, follow their literature or websites, pick 1 or 2 issues that are important to you and make a difference by writing letters, arranging local meetings… and vote!

Help Conserve State Rare Species!

Get to know the following state list, protect habitats that support these species, and *anytime* you see species on this list when in Virginia, report via the State Rare Species Form:

State Rare Species List

State Rare Species Reporting Form



ATTRACT - Creating a Backyard Dragonfly Pool:

The following documents give tips on how to attract dragonflies to your yard!

- Audubon Society of Northern VA Dragonfly and Damselfly Fact Sheet
- Wetland Wildlife and Dragonfly Pool