

## **Ecosystem Management Plan Outline – The Crossings**

### **Vision**

We envision our community to be in harmony with nature. Just as we are joined by the Great Cacapon River, we are joined together to support a natural balance and healthy environment through actions that reflect the values we share.

### **Purpose of the eco-Crossings Effort**

- Embrace the principles of responsible ecological living.
- Encourage the rehabilitation and protection of healthy ecosystems in the Crossings.
- Study, research, and promote cooperative efforts to foster positive change.

### **Our Approach**

- We will operate in an open and inclusive manner.
- All property owners are welcome to participate in any manner and at any time.
- In the interest of keeping everyone informed, including those who choose not to be active participants, we will communicate regularly regarding our progress.
- We will examine a range of options for solving problems.
- We will look for actions that can be undertaken by individual property owners, in addition to those that will require collective efforts.
- We will keep the Board appropriately informed and involved.
- We recognize that the resources (time and money) available for ecosystem management are limited. We need to be highly selective and prioritize carefully.
- We will rely to the extent possible on the expertise and interest of Crossings property owners.

### **Current State Assessment**

**Forest Health:** Based on our assessment to date, the ecosystem at The Crossings can be described as “in decline.” While it is not an acute crisis, there are various aspects that merit attention.

The most obvious element of the decline is that the forest is not being regenerated as it should be. As trees die, they are not being replaced because seedlings do not get a chance to develop.

The understory of the forest in large sections of The Crossings is non-existent. Many species that should exist in this environment have been eliminated or severely limited. This includes wildflowers and smaller plants that would normally grow in a forest like this. It also means that animal species like

certain songbirds that would live in the understory are not here as they should be.

What we have heard from independent experts like Neil Gillies, head of the Cacapon Institute, and professional forester David Warner is that we have too many deer. That is also what the DNR said last year. This problem is not unique to the Crossings; it is common throughout the mid-Atlantic states.

In addition, what we have learned from experts is that the implications of the lack of an understory are more complex than first meets the eye. For example, because the land lacks the small stems of the normal understory, the leaves that drop in the fall don't stay. Through wind or water erosion, they move away, leaving bare earth. Without the leaves the soil cannot regenerate from the natural decomposition, and any soil that is present washes off, exposing shale. The water situation is impacted by the lack of leaf litter as well. Without the small plants and leaf litter to slow the flow, rain water races off. The streams become "flashy," and the river becomes more flood-prone.

Insects and diseases are taking a toll on our trees. As examples, hypoxylon canker is killing oaks; the woolly adelgid is killing hemlocks; something is hitting maples and pines (To be researched).

In part, the susceptibility of trees to disease and insects may be a result of the arid conditions on the forest floor. Because the water runs off so quickly, it doesn't have a chance to percolate to the root zone of the trees. Trees also suffer from mechanical injury and other problems.

**Water:** River water quality is considered (assumed) to be okay but threatened by runoff, including runoff that occurs upstream of the Crossings. Groundwater quantity and quality are unclear. More information on surface water and groundwater is needed for a more accurate assessment.

**Invasive Species:** Another factor in the ecosystem is the presence of invasive species of plants and insects. Plants and animals, including insects, that are not native to the area lack natural checks on their populations. Some invasive species out-compete the species that belong here.

**Other Issues:** Some property owners have voiced particular interest in Light Pollution (extra lights left on at night), Noise Pollution (from power equipment, motor vehicles, dogs), Air Pollution (from vehicles that don't meet standards).

#### **Important Context:**

In addition to the physical aspects of the ecosystem, we need to include in this description the more personal aspects. Most (if not all) of us purchased property here because we enjoy the animals, the plants, the river and the overall setting. This is a beautiful place. In its natural state, it is inhabited by a wonderful variety of species of plants and animals. Included in the mix are deer, which are beautiful, graceful creatures. Understandably, people appreciate deer in a special way.

Despite the focus of this Ecosystem Assessment on the areas for improvement, it is important to note that not everything is in bad shape. Through the natural resilience of the environment and the deliberate actions of people, the ecosystem of The Crossings has much to offer and is still a delightful place.

## **Trends**

In a healthy, natural ecosystem the species are in a dynamic balance. Populations rise and fall in rhythm. As an example, if the population of a type of insect increases because of good weather conditions, the birds that feed on those insects will increase in numbers because they now have an abundant food source. When the plentiful insects get consumed, the bird population will decline. This natural process keeps species in balance.

Because people have largely eliminated the animal predators of deer in this area (i.e. mountain lions and wolves), that type of check on the population is gone. For thousands of years, human hunters have been another check on the deer population. That tradition continues in the general area, but covenants in The Crossings forbid sport hunting.

Lacking other controls on the deer population disease and starvation are left to do the job. These are slow – and some would argue particularly cruel – methods of eliminating deer. Others say that disease and starvation are natural, and we should just let that happen.

Regardless of people's ethical views, the slowness of disease and starvation as population controls means that our woodlands will remain out of balance if those are the only limits. Starving deer will continue to search for anything edible, thus ensuring our woodlands continue to decline.

## **Critical Knowledge Gaps**

We don't have an exact count of the deer population. While there is general consensus that there are too many, we don't have a quantification of that. According to the Cacapon Institute, if you have more than 20 deer per square mile you will have a loss of diversity in other species of plants and animals. Whether an exact deer count is necessary to take action will be discussed further. A range of options for addressing the deer situation will be discussed further.

We don't have baseline knowledge of the water situation. For example we do not know the current depth to the groundwater in our wells. This would be useful information to gauge whether the water levels are dropping. That concern arises out of the increased use of well water in the area and also the lack of recharge due to rapid runoff of rain water. We also lack detailed information on surface water. At a minimum this would be helpful for tracking trends. Water related topics are being considered.

## **Priority Needs**

- Raise awareness broadly of the ecosystem and its many elements.
- Discuss a range of options for bringing the deer population into balance.
- Gain a better understanding of the water quality and quantity situation.
- Assess options for control of invasive species. Implement actions as necessary.

## **Options for Action**

For each priority need, we will look at a range of alternatives and implement those that make the most sense.

### **Recommendations**

To be determined.

### **Progress to Date**

- Stewardship of the ecosystem at The Crossings began long before this effort. Excellent work has been done. Special thanks are due to those who participated in those efforts.
- In April 2010 we conducted an initial ecosystem assessment with Neil Gillies (head of the Cacapon Institute) and David Warner (professional forester). Gil Meyer and Ren Worlock hosted their visit.
- Neil and David conducted an Ecosystem Workshop for Crossings property owners in April.
- We provided an update on the ecosystem effort at the June Annual Meeting of the Crossings POA. At the picnic that followed, Neil and David had exhibits and were available for open discussion.
- Peter Woods established a special section of the Crossings website for the ecosystem effort and created a virtual nature trail with photos. Peter also set up a List Serve for communications.
- Jim Burnetti started a Facebook page for the eco-Crossings team.
- Peter Woods and Gil Meyer, working in cooperation with the Cacapon Institute and the National Fish and Wildlife Foundation (funds from the U.S. Forest service) established research and demonstration plots on their land to test deer exclusion fencing.

**Team** – Almost 50 property owners have joined the eco-Crossings team. A list is available separately.

## **2010 Progress Report**

The Eco Team at The Crossings was established in 2010 and immediately became active on numerous fronts. Many, many people contributed in a multitude of ways. Rather than try to include all the names, we can just recognize that it is truly a team effort, and the following are some examples of the work.

At the outset, an Ecosystem Management Plan was created by the group to prioritize and guide the efforts. The plan includes a Vision and a Purpose Statement, as well as specifics regarding how the team intends to approach the complexities of managing the ecosystem.

As part of extensive discussions on the deer situation, the group did an analysis of all possible deer management options and decided that the first action needed to be a standardized count of the herd. That effort was initiated over the winter. The chart of the options is available separately.

We created research plots to test the feasibility of using electric fencing to exclude deer in upland, wooded settings.

Another area of concern is the quality and quantity of our water. There are many dynamics in the immediate and surrounding areas that could negatively impact our water. An effort has been started to generate baseline data so that we can track trends.

We've also focused on invasive species, which are a threat to the native species. We have emphasized the need for all property owners to try to control the invasives on their land.

## **2011 Plans**

The Ecosystem Management Plan developed in 2010 remains a good guide for our efforts. We will continue to operate in an inclusive and transparent manner, involving any property owners whenever and however they wish.

Communications are still a priority. One part of this will be a presentation at the Annual POA Meeting. A section on the Eco team will be included in the Crossings Annual Report, and we will update property owners in the newsletter as well.

Early in 2011 in a cooperative effort of the WV Division of Forestry, The Crossings, the Cacapon Institute and the Friends of Cacapon River we secured and planted over 100 trees and shrubs in the open field area of Common Area 2. Also included in the project was a fence to protect the plants from deer. All of this was done with no out-of-pocket charge to The Crossings. The goal of the project is riverbank stabilization. The existing trees in that area hang over an eroding bank. When a flood eventually pulls them into the river, we will lose their protective roots and will then lose our land in the area. Hopefully the new trees and shrubs will have enough time to get established before they become the front line of defense.

Initial counts of the deer population indicate it may have declined and thus we may not need a herd thinning effort this year. We will continue to watch that situation closely as we head into the time of year when fawns are born. We will do additional counts in mid-summer and then discuss the situation as needed. An ideal deer population for an area the size of the Crossings is about 40.

The water testing program is broadening to include more properties. We will include any data volunteered by property owners in our database.

2011 is year two of the three-year research project to test the feasibility of using electric fencing to exclude deer in upland, wooded settings.

We will continue to raise awareness of the need to control invasive species.