**Integrated Pest Management Plans**

Integrated Pest Management (IPM) uses a wide range of pest control methods or tactics, rather than just relying on chemical controls. The goal of IPM is to maintain pest damage at acceptable levels, which usually does not require complete elimination of a pest. IPM follows a series of four steps to address pest problems:

1. **Set Action Thresholds**

Before taking any pest control actions, IPM users first set an action threshold — a pre-determined point at which pest control action will be taken. This threshold is often the level at which pests will become a health hazard, an economic threat, or simply cause an unacceptable level of damage. Finding a single pest does not always mean pest control is needed. An action threshold helps ensure that control measures are taken only when necessary.

1. **Monitor and Identify Pests**

Monitoring involves a regular and methodical procedure to quantify information needed to make sound pest management decisions. Accurately identifying pests will allow for effective controls, if necessary. The UAF Cooperative Extension Service can offer help in identifying pests. IPM users should monitor for the presence and concentration of pests in various locations at various times, as these levels can vary greatly.

1. **Prevent Pests**

To prevent pests from becoming a problem, IPM programs work to create unfavorable environments for pests to colonize, grow, and reproduce. Prevention for outdoor environments might include crop rotation, selecting pest-resistant varieties, or putting down physical barriers such as landscaping fabric. Indoor pest prevention might include good sanitation, removing debris, or sealing cracks and other entries into buildings.

1. **Control**

If action thresholds have been triggered and preventive methods are no longer effective, IPM programs then evaluate control methods to determine which would be most effective. IPM users must know which control methods are available, and should evaluate the benefits and risks of each. Non-chemical methods of controlling pests are often very effective. Some examples of non-chemical control methods include trapping, heat treatments, cutting or mowing, or cultivating soil. Chemical controls can be an effective part of IPM, but are just one of the many tools that may be used.

**++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++**

**Sample IPM Plan**

The following pages provide an outline for developing an IPM Plan. It can be modified to meet the needs in various management areas and for various pests. The tables are filled in with example information in **gray** text. This information should be replaced with the correct information for your management area.

**Integrated Pest Management Plan SAMPLE**

|  |  |
| --- | --- |
| **IPM Plan Effective Dates:** | July 2012 through June 2013 |
| **Management Area Name/Location:** | Alaska Power |
| **General Site Description:** | Electrical lines and transfer stations located on state owned land/right of ways. |
| **Land Uses:** | Power transmission lines along right of ways and transfer stations located on gravel pads. |
| **Name of Person in Charge:** | John Smith |
| **Certified Applicator Name(s):** | Dale Gribble |
| **Certification Numbers:** | 012-4444 |

1. **Action Thresholds**

Check the types or categories of pests that might present a problem or need to be controlled at this management site:

|  |  |
| --- | --- |
| ✓ | **Category** |
| **✓** | **Vegetation** |
| **✓** | **Insects** |
|  | **Fungus** |
|  | **Rodents** |
|  | **Other (describe below)** |

**For each pest category listed above, describe the level at which the pest becomes a problem which requires control measures to be taken.**

|  |
| --- |
| Vegetation:   * Vegetation under the power lines in the right-of-ways should be maintained at a level that allows for navigation under the lines by foot, four-wheeler, or truck. Vegetation should remain less than one foot in height. Woody vegetation should remain less than six inches in height or be eradicated. * Vegetation in a 3 foot radius circle around each pole should be eradicated to prevent damage to poles and allow for visual inspection. * All vegetation should be eradicated from the gravel pads at the transfer stations to allow for visible examination of structures within, including fences, and to prevent deterioration of surfaces.   Insects:   * Insects that may damage wood, such as carpenter ants, should be eradicated from wooden poles and any areas within 200 feet of wooden poles. |

**++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++**

1. **Monitor and Identify Pests**

**How often will the management area be inspected for the presence of pests?**

|  |
| --- |
| The certified applicator will survey for the presence of vegetation in the transfer stations, excessive vegetation under the power lines, and the presence of wood destroying insects once each quarter.  In addition, the certified applicator will investigate any reports from workers who encounter excessive vegetation or suspected wood destroying insects on the job sites. |

**Which locations will be inspected?**

During each inspection, the certified applicator will survey vegetation at two transfer stations and at least six separate sections under the power line of at least one quarter mile in length, and will survey for the presence of wood destroying insects on the poles in each of those sections. Different transfer stations and sections of power line should be surveyed at each inspection.

**What methods will be used for identifying and quantifying the presence of pests?**

The presence of vegetation can be determined by a brief visual survey. An estimate of vegetation height is sufficient under the power lines.

The presence of wood destroying insects will require a close visual examination of the surface and surroundings of each pole for the presence of insects, nests, frass, or other signs of activity. Any sign of wood destroying insects indicates the need for control, so quantification is not necessary.

**How will pest species be identified?**

Vegetation should be identified using the UC Davis plant guide at <http://www.ipm.ucdavis.edu/PMG/weeds_intro.html> or by contacting CES at 1-877-520-5211.

Suspected wood destroying insects should be identified using the UC Davis insect guide at <http://www.ipm.ucdavis.edu/PMG/menu.house.html> or by contacting CES at 1-877-520-5211.

**Describe record keeping procedures:**

Pest management records will be kept at the main office in the IPM section of files. Information will be recorded for future reference and to help guide control decisions.

A record of each inspection will include the date, locations, and extent of pest presence.

A record of each control applied will include the date, location, and details about the control that was applied.

A record of each re-inspection following use of a control method will include the date, location, evaluation of how effective the control was in reaching the target control levels, and recommendations for follow up actions.

**++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++**

1. **Prevent Pests**

**For each pest category listed under Section 1, describe preventative measures that will be taken:**

Vegetation under the power lines is well established and normal for the environment. No preventative measures are recommended.

Vegetation growth at the base of each power pole could be prevented by use of weed barriers. However, installation and maintenance of this many weed barriers is not practical. No preventative measures are recommended.

Vegetation within the transfer stations will be deterred by the hard-packed gravel pad and lack of soil water within the gravel. Good maintenance of gravel pad will help ensure weeds do not become established. Weed barriers have been installed under gravel pads, and should be maintained or repaired when pads are disturbed.

All wooden poles will be pre-treated (off site) with wood preservatives to help deter wood destroying pests.

**How often will preventative measures be applied?**

Condition of weed barriers under gravel pads will be noted at each regular inspection. Damage should be repaired within one month to prevent additional deterioration.

Wooden poles will be treated only once, prior to installation.

**++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++++**

1. **Control Measures**

**For each pest category listed under Section 1, list potential non-chemical control measures that may be used:**

|  |  |
| --- | --- |
| **Cultural Controls:** | Vegetation at the base of power poles could be burned back, soil could be tilled, or competitive low-height vegetation could be planted. Care must be taken to identify plant species prior to taking these measures, as soil disturbance can enhance growth for some types of weeds.  There are no identified cultural controls for wood destroying insects in natural environments. |
| **Mechanical Controls:** | Vegetation within transfer stations or at the base of power poles may be pulled by hand, mowed, or cut with string trimmers. This is likely to be the most effective choice if vegetation growth is minimal to moderate.  Vegetation under the power line may be mowed, cut with string trimmers, cut back with pruners/chainsaws, or dug out with shovels/hoes. This is the only planned control for this vegetation, as limited control is required in these areas.  There are no identified mechanical controls for wood destroying insects in natural environments. |

**For each pest category listed under Section 1, describe the characteristics needed in any chemical controls that may be used:**

Vegetation: Product must be a systemic herbicide to ensure that the entire plant is eradicated. Due to the large management area and remoteness of many sites within, product should have residual characteristics to reduce the frequency of required application and prevent future weed growth.

Insects: Due to the large management area and remoteness of many sites within, product should have residual characteristics to reduce the frequency of required application and prevent future outbreaks. Products known to bio-accumulate should be avoided.

**For each pest category listed under Section 1, list potential chemical controls that may be used:**

|  |  |  |
| --- | --- | --- |
| **Target Pest** | **Product Name** | **EPA Registration Number** |
| Vegetation | Sudden Death Weed-Getter | 555-52155 |
| Wood destroying insects | Sudden Death Ant -Getter | 555-55515 |

**Describe how treated areas will be re-inspected and evaluated for effectiveness of controls:**

Following application of controls (cultural, mechanical, or chemical), the certified applicator will re-inspect each treated area to determine if the applied controls achieved the target control level.

The certified applicator will evaluate the effectiveness of controls. If control actions did not achieve the target control level, the certified applicator will recommend modifications or additional controls.