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**NOXIOUS WEED PLAN  
BAKER COUNTY  
(Revised)  
May 9, 2002**

Prepared by: \_\_\_\_\_

\_\_\_\_\_ Arnie Grammon, Weed Supervisor

\_\_\_\_\_ Date

Reviewed by:

Weed Advisory Committee:

\_\_\_\_\_ Bill Shumway, Chairman

\_\_\_\_\_ Date

Road Department:

\_\_\_\_\_ Ken Helgerson, Road Master

\_\_\_\_\_ Date

Approved by:

Baker County Board of Commissioners:

#1 \_\_\_\_\_  
Brian Cole, Commission Chair

\_\_\_\_\_ Date

#2 \_\_\_\_\_  
Howard Britton, Commissioner

\_\_\_\_\_ Date

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Approved Weed District Budget, July 1, 2002 - June 30, 2003

## **BAKER COUNTY'S NOXIOUS WEED MANAGEMENT PLAN**

### **INTRODUCTION**

Noxious weeds are being found in ever-increasing numbers throughout Baker County. The spread of noxious weeds signals the decline of entire plant communities: they severely impact the beauty and plant diversity of occupied environments and cause widespread economic impact. These alien invasive weeds are considered one of the most serious natural resource and economic issues facing Baker County. Without major increased management efforts weeds will continue to spread across the area and degrade productive lands that are Baker County's heritage.

THE PURPOSE of the Baker County Noxious Weed Management Plan is to provide a written strategy that will guide weed management activities now and into the future.

1. Effectively control and reduce the spread of invasive noxious weeds in Baker County.
2. Reduce economic and environmental losses to Baker County landowners/managers caused by noxious weeds.
3. Implement the Weed Policy and Classification System.
4. Display the role and By-Laws for the Baker County Noxious Weed

Advisory Committee.

5. Display individual noxious weed management strategies and plans.
6. Identify traditional and non-traditional funding sources for weed programs.
7. Provide public awareness/education of the serious nature of the weed problem.
8. Encourage cooperation and coordination between jurisdictions, agencies, land managers, and private owners.
9. To obtain compliance with federal, state and local laws, regulations, and polices regarding noxious weed control.

## **PROGRAM DIRECTION**

### **The Weed District**

Baker County is designated as a Weed Control District, formed under ORS 570.505. Its purpose is to contain, control and eradicate noxious weeds in its jurisdiction.

In addition, the Upper Burnt River Weed Control District is recognized as an informal sub-district (not petitioned) within Baker County. The Burnt River District assists with weed management activities in their area and they are guided by their own strategic plan and mission statement.

The County's weed program is managed through the Weed District Supervisor. The Weed Supervisor receives direction from the Board of Commissioners. Duties include, but are not limited to planning, organizing, directing and evaluating programs that control weeds throughout Baker County.

More specific responsibilities of the Weed Supervisor are: working with the Weed Advisory Committee, cooperators, other departments, private landowners and

agencies; overseeing cost-share, enforcing weed laws, surveying, spot spraying, monitoring, and managing the district's overall weed control program.

### The Baker County Road Department

The Road Department vegetation management duties are:

- (1) Coordinating roadside residual herbicide programs on county right-of-way;
- (2) Controlling broadleaf weeds and other undesirable vegetation on right-of-ways;
- (3) Snow drifting abatement and safety (mowing or chemical vegetation reduction to reduce hazard).

These activities are part of a right-of-way maintenance program, dealing with roadside vegetation on the right-of-way. The control of noxious weeds within the right-of-way is a road department responsibility, with spraying being contracted to Union County.

### **FUNDING**

The noxious weed program is funded through programmed road dollars, the general fund, the weed levy, grants, and contributed monies.

The weed levy dollars are used to manage the weed district program and are distributed as follows:

1. Weed District Supervisor's wages/travel/training.
2. Office specialist, part-time.
3. Vehicle operation and maintenance.
4. Herbicide purchases for broadleaf weed control.
5. Landowner cost-share program.
6. Weed surveys and special projects.
7. Supplies and utilities.
8. Enforcement of Weed Laws

Road Department dollars for vegetation control are programmed from dedicated road funds and the general fund. They are distributed to meet safety, maintenance, and environmental needs.

### **THE WEED ADVISORY COMMITTEE**

The Weed Advisory Committee is appointed by the County to help the Weed District in setting program priorities. They are to assist in increasing public awareness of the spread noxious weeds and in keeping the Board of Commissioners and budget committees informed of problems regarding funding and management of the noxious weed program. The committee is an advisory committee to the Commissioners.

## **DEPARTMENTAL GOALS**

### Road Department Goals

The goal of the Baker County Road Department is to provide roadways that are safe, efficient, and economical to maintain in a manner consistent with practices that protect the environment and citizens of Baker County. Integrated Pest Management techniques such as brush cutting, mowing, bladeing, ditching, hand pulling, hydroseeding, competitive planting, and herbicides are currently used to achieve an acceptable level of vegetation control.

Management of roadside vegetation is necessary for;

1. Safety
  - a. Unmanaged roadside vegetation obstructs visibility of corners, intersections, etc.
  - b. Unmanaged roadside vegetation obstructs visibility of signs, etc..
  - c. Unmanaged roadside vegetation can reduce areas designated as safe locations for emergency stops.
  - d. Unmanaged vegetation increases the potential for wildlife loss.
2. Maintenance
  - a. Growth of vegetation along pavement edge and through pavement causes cracks.
  - b. Indirect damage can occur by preventing drainage of road beds and surfaces which cause pot-holing.
3. Enhancement of agricultural production, environmental protection and esthetics.
  - a. Appropriate vegetation management presents a pleasing appearance.

- b. Harbors fewer noxious weeds
- c. Protects soils and prevents non-point pollution

### Weed District Goals

The Baker County Weed District is to provide coordination for a countywide prevention and control program that limits the spread of noxious weeds. The weed funds are managed by the Weed District Supervisor.

1. To initiate weed control efforts across the county with assistance by Oregon's Department of Agriculture, as addressed in ORS. 570.
2. To disseminate information to landowners/managers on how to control weeds by utilizing an integrated management system, i.e., proper pasture mix, proper grazing height, irrigation, cross-fencing, fertilization, mechanical, physical, cultural, biological and chemical control, etc.
3. To survey and map all noxious weeds in Baker County and to rate them according to severity as "A", "B", and "C".
4. To survey for potential invading noxious weeds not presently known to occur in Baker County.
5. To act as a resource for making pesticide recommendations.
6. To be available to talk to clubs, interested groups, schools, etc., on the safe use of pesticides and methods of control, which include cultural, mechanical, biological, and chemical.
7. To distribute biological control agents where appropriate for leafy spurge, yellow starthistle, diffuse/spotted knapweeds, Klamath weed, poison hemlock, and Canada thistle.
8. To control weeds on county roads, highways, ditches, recreation areas, etc., as determined for legal and safety purposes.
9. To assist Oregon State University, Oregon Department of Agriculture, co-ops, chemical companies, and others in demonstrations to show effectiveness of weed control measures.
10. To promote proper funding for noxious weed control efforts and when budgets allow, offer a 50 percent cost share opportunity to landowners with "A"

designated weeds, in addition to those weeds deemed appropriate for cost share opportunity as designated by the Baker County Board of Commissioners.

### **BAKER COUNTY WEED POLICY AND CLASSIFICATION SYSTEM**

"NOXIOUS WEED" means any weed designated by the Baker County Board of Commissioners that is injurious to public health, agriculture, range, recreation, wildlife, or any public or private property; any weed that impacts and displaces desirable vegetation, such as Threatened and Endangered Plant Species, wildlife habitat, livestock, etc.

It is acknowledged that certain noxious weeds have become so thoroughly established and are spreading so rapidly on state, county, and federally owned lands, as well as on private land, that they may have been declared by Oregon Revised Statute 570.505 to be a menace to public welfare. Steps leading to eradication where possible, are necessary. It is further recognized that the responsibility for such eradication and/or intensive control rests not only on the private landowner and operator, but also on the county, state, and federal government.

### **WEED CONTROL POLICY**

THEREFORE, IT SHALL BE THE POLICY OF BAKER COUNTY TO:

1. Increase awareness of potential economic loss due to existing and new invading weeds through continuous education with the public.
2. Rate and classify weeds at the county level
3. Prevent the establishment and spread of noxious weeds.
4. Encourage and implement the control or containment of infestations of designated weed species and, where possible, their eradication. When budgets

allow, offer a landowner cost share program for "A" rated weeds, as well as those weeds designated appropriate for cost share assistance by the Board of Commissioners.

5. Manage a biological control of weeds program for yellow starthistle, leafy spurge, St. Johnswort, Canada thistle, rush skeletonweed, diffuse knapweed, spotted knapweed, and others, in cooperation with ODA's Biological Control of Weeds Program.

6. Cooperate with other states, federal agencies, private citizens, the Tri-County Weed Management Area and other groups in enhancing the Baker County Vegetation Management Program.

### **WEED CLASSIFICATION SYSTEM**

THE PURPOSE OF THE CLASSIFICATION SYSTEM IS TO:

1. Act as the Baker County official guideline for implementing noxious weed control programs.
2. Assist Baker County in the distribution of available funds as specified in ORS 570.580 to 670.600 (Cost assistance grants and matching fun grants).

### **NOXIOUS WEED CONTROL RATING SYSTEM**

Noxious weeds, for the purpose of this system, shall be designated "A", "B", "C".

1. "A" designated weed: a weed of known economic importance which occurs in small enough infestations to make eradication/containment possible; or not

known to occur, but its presence in adjacent counties makes future occurrence seem imminent

**RECOMMENDED ACTION:** Infestations are subject to intensive control when and where found by Baker County with possible assistance from the Oregon Department of Agriculture.

2. "B" designated weed: a weed of known economic importance, which is locally abundant, but of limited distribution in other counties.

**RECOMMENDED ACTION:** Moderate to intensive control at the county level.

3. "C" designated weed: a weed of economic importance which is abundant county-wide and in adjacent counties.

**RECOMMENDED ACTION:** Moderate control at the county level.

#### "A", "B", "C" DESIGNATED WEEDS

##### "A" DESIGNATED WEEDS

1. Tansy ragwort	<i>Senecio jacobaea</i>
2. Musk thistle	<i>Carduus nutans</i>
3. Leafy spurge	<i>Euphorbia esula</i>
4. Rush skeletonweed	<i>Chondrilla juncea</i>
5. Mediterranean sage	<i>Salvia aethiopsis</i>
6. Spotted knapweed	<i>Centaurea maculosa</i>
7. Diffuse knapweed	<i>Centaurea diffusa</i>
8. Dalmatian toadflax	<i>Linaria dalmatica</i>
9. Yellow starthistle	<i>Centaurea solstitialis</i>
10. Dyers woad	<i>Isatis tinctoria</i> L.
11. Perennial pepperweed	<i>Lepidium latifolium</i>
12. Purple loosestrife	<i>Lythrum salicaria</i>
13. Black henbane	<i>Hyoscyamus niger</i> L.
14. Jointed goatgrass	<i>Aegilops cylindrica</i> (Host)
15. Buffalobur	<i>Solanum rostratum</i> Dun.
16. Common Bugloss	<i>Amsinckia officinalis</i> L.

##### "B" DESIGNATED WEEDS

1. Whitetop	<i>Cardaria draba</i>
2. Russian knapweed	<i>Centaurea repens</i>
3. Scotch thistle	<i>Onopordum acanthium</i>
4. Puncturevine	<i>Tribulus terrestris</i>
5. Klamathweed*	<i>Hypericum perforatum</i>

(\* in rangeland, outside of cultivated areas)

- |                    |                      |
|--------------------|----------------------|
| 6. Venice mallow   | Hibiscus trionum     |
| 7. Yellow toadflax | Linaria vulgaris     |
| 8. Dodder          | Cuscuta campestris   |
| 9. Chickory        | Chchorium intybus L. |
| 10. Teasel         | Dipsacus fullonum L. |
| 11. Common Tansy   | Tanacetum vulgare L. |

"C" DESIGNATED WEEDS

- |                    |                                 |
|--------------------|---------------------------------|
| 1. Waterhemlock    | Circuta maculata                |
| 2. Poison hemlock  | Conium maculatum L.             |
| 3. Morningglory    | Convolvulus arvensis            |
| 4. Russian thistle | Salsola iberica                 |
| 5. Medusahead      | Taeniatherum caput-medusae (L.) |
| 6. Kochia          | Kochia scoparia (L.)            |
| 7. Common Mullein  | Verbascum thapsus               |
| 8. Moth Mullein    | Verbascun blattaria L.          |
| 9. Bur Buttercup   | Ranunculus testiculatus Crantz  |

**BAKER COUNTY WEED ADVISORY COMMITTEE**

The Baker County Weed Advisory Committee represents various Baker County interests. This advisory committee appointed by the Baker County Commission, represents as much as possible all geographical, social and political areas in Baker County and is to advise the county on noxious weed matters.

Goals:

1. To inform citizens of the threat that noxious weeds are bringing to the area.
2. To listen to citizen concerns and share those concerns with the county, advise accordingly.
3. To maintain and improve communication, coordination and working relationship among and between interested and concerned parties.
4. To assist the County in developing control, eradication, containment, and education policies and procedures.

**BY-LAWS OF THE WEED ADVISORY COMMITTEE:**

## MEMBERS:

Appointed by Baker County for a three year fixed term, as established by Baker County's legal department.

## DUTIES:

The Advisory committee shall function in an advisory capacity only.

## OFFICERS:

Chairperson -- The Chairperson shall call and preside at all meetings, nominate all committees, supervise and manage the business affairs and perform such duties incidental to the office of Chairperson.

Vice Chair --The Vice Chair shall assume the duties of the Chair in his or her absence.

Secretary/Treasurer--The Secretary/Treasurer shall be an employee of Baker County; shall keep full and complete minutes of all meetings of the committee; shall send minutes of each meeting directly to the Baker County Board of Commissioners and all Advisory Committee members.

## ELECTIONS:

The Advisory Committee may, by affirmative vote of at least 2/3 of it's members, declare any office or position vacant for:

- a. Unjustified absences from three or more consecutive meetings.
- b. Conviction of an offense punishable by incarceration in a penal institution.
- c. Conduct which is patently unethical or detrimental to the interest of Baker County, or the County Board of Commissioners, or the public image of the Baker County Weed District.

## MEETINGS:

The last Tuesday of the month, unless otherwise scheduled.

### Meeting Procedures

1. The chairperson of the Advisory Committee and the Baker County Weed Supervisor should meet one week prior to a stated meeting to:
  - a. Discuss and list all agenda items for old and new business.
  - b. Develop and send agenda to all members including the Baker County commission.
2. The District Weed Supervisor should attend all advisory committee meetings. The Supervisor is to act in the role as a resource person for the Advisory Committee.
3. Minutes of each advisory meeting to be submitted to the Baker County Board of Commissioners, to members, and on a request basis to interested parties.
4. The meeting itself should be conducted in accordance with Baker County established and approved rules. Items to be discussed during the meeting are the ones listed on the agenda. If possible, items under new business should be briefly discussed and referred to the next meeting.

## **SPECIFIC NOXIOUS WEED MANAGEMENT STRATEGIES**

### **Leafy Spurge Management**

Leafy Spurge is considered one of the worst range weeds in the west because of its ability to spread and to defy control. This weed has caused rangelands to become non-productive and has proven to be a liability to landowners.

The Strategy:

There shall be an area of the Alder Creek spurge infestation, which shall be referred to as "the containment area" (approximately 80 sections). Responsibility for, and implementation and control of the spurge in this area, shall rest with the landowner/manager. The County Noxious Weed Program may enter into assistance agreements to reduce the spurge within this area. Efforts to control leafy spurge are non-discretionary and landowners/managers must show a good faith effort, or be cited under Oregon Weed Law.

The landowner is encouraged to develop a long-range plan with the help of Baker County's Weed Supervisor, ODA, NRCS, and OSU Extension Agent for

grazing, biological and chemical control to reduce the spread, stop its further encroachment and to stop the spread off site. The Noxious Weed Program must take responsibility for keeping spurge off the public use roads in the containment area to stop the threat of spurge movement on vehicles.

The remainder of the county shall consider leafy spurge as an "A" Rated weed to be treated with early detection of new infestations and subsequent eradication as the goal.

An important project that needs to continue is the comprehensive survey and mapping of the areas known to contain spurge. All of the area surrounding Alder Creek and Burnt River should be surveyed and mapped, as well as areas surrounding the small infestations in Pine Valley, Sumpter Valley and the old Ringer Ranch. The small infestations outside of Alder Creek should be treated while this information is being gathered.

All participants in any leafy spurge project must be made aware that this is a very long-term project, but the stakes are high. If we do nothing more than hold our ground we're doing better than most. The alternative is losing the land to the spurge.

### **Mediterranean Sage Management**

Mediterranean sage is known to occur only on a limited acreage between Haines and North Powder, Pine Creek (Hereford area), and North Pine Creek on the Wallowa Loop Road out of Halfway. Since these are the only known sites in Baker County and there are none elsewhere in northeast Oregon, Mediterranean sage should be targeted for an active eradication program.

The Strategy:

The Oregon Department of Agriculture and Baker County has done some of the mapping of this site and initiated a containment effort. The infestation appears to have started from road and mining equipment then spread with wind, water and equipment. The Oregon Department of Agriculture and Baker County should cooperatively control this infestation with funding assistance from the Oregon Department of Transportation, BLM, and the private landowner.

### **Knapweed Management**

Diffuse, Russian and Spotted Knapweed represents a very severe threat to Baker County from a crop, wildlife and livestock prospective. The knapweeds can be found scattered throughout the county at increasing levels. If prompt action is taken, a serious knapweed problem such as exists in northern Union or

the Columbia Basin counties can be avoided. Knapweeds should be the focus of an intensive education campaign so that every range and forest user should be looking for it.

The Strategy:

An active county program to keep knapweeds from reproducing on state and county roads would help stop most of the new infestations. Cost-share control programs with the known acreage on private land would not cost much at this point. An important project to complete is an extensive county-wide survey and mapping effort. This would yield information concerning all of the priority weeds.

### **Dalmatian Toadflax Management**

Dalmatian Toadflax is another range/pasture invader that is posing a serious threat to Baker County lands. There are scattered infestations around the county which need to be dealt with. Toadflax has an extensive root system and its waxy leaf makes this an extremely difficult plant to control.

The Strategy:

Toadflax is moving into Baker county along Highway 7 from Grant County. At present plants are encountered in and around the Sumpter area and have the potential to takeover the Sumpter Valley Dredge tailings. Cooperation and coordination will be required from Sumpter area residents if this weed is to be controlled.

The old Melhorn Mill site in Halfway is currently being sprayed to stop toadflax. This infestation should remain a top priority.

The gravel pit below Huntington along the Snake River Road and the surrounding range supports the largest known area of toadflax in the county. The gravel area itself must be kept clear of toadflax to avoid spreading the problem to new areas. A cooperative program with the B.L.M. and the private landowners needs to be developed to stop the toadflax from further spread.

### **Yellow Starthistle Management**

Yellow starthistle has been the target of various levels of attack for a number of years. At this time it would appear that it is not possible to pursue complete eradication of yellow starthistle in Baker County.

### The Strategy:

A containment area (approximately 110 sections) has been developed encompassing the known area where yellow starthistle is being found and an action plan has been formulated with the landowners and area federal land managers to: a) reduce the economic impact of yellow starthistle within the containment zone and, b) stop the spread out of this zone. The remainder of the county should be considered an eradication zone for yellow starthistle.

An integrated approach to controlling yellow starthistle will be necessary within the containment zone, which will include some seeding of more competitive species of grass, grazing management, herbicide use and biological controls. The Weed District, Keating SWCD, BLM, ODA, and the affected landowners should devise an effective containment agreement that would address equipment, livestock, hay and dried plants movement to avoid seed dispersal to other areas.

### Rush Skeletonweed Management

There is an explosion of rush skeletonweed occurring in the Panhandle of Baker County. An Extensive inventory has included sighting of this invasive weed over a gross area of more than 70,000 acres.

Skeletonweed is of particular concern because of its ability to spread rapidly over long distances and to degrade rangelands rapidly. The population center is near the junction of the Snake River and the Powder River. Plants are being discovered in Eagle Valley, Pine Valley, Dry Creek, North Pine Creek and Oxbow.

### The Strategy:

Field surveys need to occur and be followed by chemical treatment of each plant or group of plants. This plant should not be pulled because of its ability to re-sprout vigorously.

A containment area boundary (approximately 120 sections) has been drawn where sightings have occurred. Area residents are being alerted to this new weed threat and aggressive action taken at all known sites.

## **BLUE PRINT FOR BUILDING ACTION ITEMS**

The noxious weed program will build upon the following principles:

### **STEP #1 - Awareness, Education, and Training**

Awareness is when people responsible for supporting, implementing, or taking part in a weed management program realize there is a weed problem. When people recognize leafy spurge, spotted knapweed, and other undesirable plants as problems, they have weed awareness.

Education about the impacts noxious weeds have on natural resources, wildlife, and the economy occurs after people are made aware of weeds. Training takes place after people become aware and realize that noxious weeds are detrimental to our natural resources, but need assistance in how to manage the weeds effectively.

### **STEP #2 - Funding and Program Justification**

To increase funding and justify our management plan, we need to:

1. Demonstrate the impacts of that noxious weeds are bringing to Baker County.
2. Establish an operating budget for the entire program.
3. Designate who performs which parts of the program.

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### **STEP #3 - Inventory (Zoning and Weed Mapping)**

Mapping may be the single most useful part of our noxious weed control plan. We must "Know what is out there", if we expect to manage the land successfully. A map can be an aerial photograph, drawing, topography map, road map, section or county map, or property map. A good inventory and mapping system:

1. Defines the problem
2. Brings awareness
3. Helps monitor program effectiveness
4. Helps develop prevention and integrated weed management action plans
5. Tells about the land and the weeds on it

6. Provides a historical weed infestation record
7. Provides data to evaluate weed management options

#### STEP #4 - PREVENTION AND EARLY DETECTION

Prevention, early detection, and eradication of early detected noxious weed species are the most practical means of weed management. Prevention is best accomplished by ensuring that new weed species' seed or vegetative reproductive plant parts are not introduced into an area.

#### STEP #5 - Planning and Plan Implementation

There are at least seven reasons why weed management planning works:

1. It improves our weed control knowledge
2. It saves time and money
3. It forces us to evaluate all factors of weed control
4. It helps us visualize the total weed program
5. It prioritizes control efforts
6. It creates a historical record-keeping system
7. It enables us to participate in federal, state, county, or other weed control projects.

Keeping accurate records of the details of each treatment in prioritized units insures that your planning is accurately translated into action.

#### STEP #6 - Monitoring and Evaluation

Monitoring means repeated, systematic observation. Monitoring is "determining the truth" or observing the results about how the program is working. For building awareness, continuing education, implementing training, funding and justifying the program, and being able to plan and to modify the plan, you must know what you are doing.

Evaluation is relating information obtained from monitoring relative to a goal. The purpose of evaluation is to answer the questions:

A. Does the weed management program come as close to accomplishing the goal as is possible with the resources at hand?

B. Is the goal still desirable and realistic?

#### STEP #7 - Record System

A record system will help identify factors that influence success such as herbicides, application rate, temperature, moisture conditions, growth stage of weeds, and wind. Being extremely busy most of the year and no one can remember all the critical details involved in a successful noxious weed control effort. But records can. They can make the difference between success and failure.

# Backpack Sprayer Calibration

## *No Math Version!!*

- Step 1:** Establish a calibration plot that is exactly: 18.5 feet wide x 18.5 feet long
- Step 2:** Spray the calibration plot uniformly with water, noting the number of seconds required: Time Required to spray plot = \_\_\_\_\_ seconds.
- Step 3:** Spray into a bucket for same number of seconds.
- Step 4:** Measure the number of ounces of water in the bucket:  
Volume sprayed = \_\_\_\_\_ ounces
- Step 5:** The number of ounces collected from the bucket is equal to the number of gallons per acre the sprayer is delivering: Gallons Per Acre (GPA) = \_\_\_\_\_

## *Adding the Correct Amount of Herbicide to Tank for Liquid Herbicide Formulations*

- Step 6:** Record sprayer output in gallons/acre (calculated from Step 5).  
Output (volume) = \_\_\_\_\_ GPA
- Step 7:** Determine volume of full spray tank.  
Tank volume = \_\_\_\_\_ gallons
- Step 8:** From the herbicide label determine amount of herbicide concentrate to apply per acre.  
\_\_\_\_\_ Herbicide per Acre (quarts or pints)
- Step 9:** Determine the amount of herbicide to add to each gallon using the chart below.
- Step 10:** Calculate the amount of herbicide to add to each tank.  
\_\_\_\_\_ Amount of herbicide/gallon x \_\_\_\_\_ number of gallons in a tank =  
\_\_\_\_\_ Total amount of herbicide to add to a tank.

### **Spray Volume**

### **Amount of Herbicide to Add to Each Gallon**

#### **Recommended Herbicide Rate/Acre**

Gal. / A	1 pint	1 quart	2 quarts	3 quarts	4quarts
15	6 tsp	2 fl oz.	4 fl oz.	6.25 fl oz.	8.5 fl oz.
20	5 tsp	10 tsp	3.25 fl oz.	4.75 fl oz.	6.33 fl oz.
30	3 tsp	6 tsp	2 fl oz.	3.25 fl oz.	4.25 fl oz.
40	2.33 tsp	4.75 tsp	1.66 fl oz.	2.33 fl oz.	3.25 fl oz.
50	2 tsp	3.75 tsp	1.25 fl oz.	2 fl oz.	2.5 fl oz.
60	1.66 tsp	3.25 tsp	6.33 tsp	1.66 fl oz.	2 fl oz.
70	1.33 tsp	2.75 tsp	5.5 tsp	1.33 fl oz.	1.75 fl oz.
80	1.25 tsp	2.33 tsp	4.75 tsp	7.25 tsp	9.5 tsp
90	1 tsp	2 tsp	4.25 tsp	6.33 tsp	8.5 tsp
100	1 tsp	2 tsp	3.75 tsp	5.75 tsp	7.66 tsp
120	0.75 tsp	1.5 tsp	3.0 tsp	4.75 tsp	6 tsp

**Example:** Assume that the calibration of your sprayer (Steps 1 – 5) yields an output of 30 GPA and your sprayer holds 3 gallons. Your herbicide label for the target weed species dictates a herbicide application rate of 1 pint/acre. Go to the chart and read across from 30 Gal. / A to the 1-pint column – the amount of herbicide to add per gallon is 3 tsp in the chart. Since your sprayer holds 3 gallons of total solution, you would add 9 tsp of herbicide in addition to the water in each tank.

Liquid Conversions:

tsp = teaspoons

3 teaspoons = 1 tablespoon

2 tablespoons = 1 fluid ounce

TBS = tablespoons

8 fl ounces = 1 cup

1 cup = 16 tablespoons

fl oz. = fluid ounces