THE LANDSCAPE ASSESSMENT TOOL

The Landscape Assessment Tool (LAT) is a free and easy-to-use instrument to help you determine where you can reduce or eliminate outdoor water use. After using the Tool, refer to the Fact Sheets for help on how to proceed. For example, to remove turf or reduce your lawn area, refer to Fact Sheets about: how to remove lawn, overseeding, the basics of xeriscape, lawn alternatives, etc. Other Fact Sheets include edible gardening practices to conserve water, tips on changing outdoor water use habits, and altering your current irrigation system to conserve water. *(see complete list of Fact Sheets at the bottom of this page)*

The development of this Tool is an Okanagan Xeriscape Association initiative following the release of the Okanagan Basin Water Board's (OBWB) report Okanagan Water Supply and Demand Project, Phase 2 in March 2010. This study reports that in the Okanagan Valley domestic water use is 675 litres per person per day. Compare this to the provincial average (490 litres/day) and the national average (329 litres/day). The report states "outdoor domestic landscaping accounts for a year round average of 525 litres per person per day" and that "during the…irrigation season, total domestic water use by Okanagan residents averages more than 1,000 litres per person per day" – and we live in the driest area of the country!

The Landscape Assessment Tool is designed for use by Okanagan homeowners* who are concerned about how much water they use outdoors for such reasons as rising water costs, unnecessary use of a valuable resource, impact on the environment (wildlife, groundwater health, food crops), etc.

The LAT is particularly helpful for those who have already made the decision to reduce outdoor water consumption. Once the Assessment is done the Fact Sheets can help you decide where you want to make changes to your landscape. Even if the decision is to make dramatic changes, the project does not have to be done all at once. It is advisable, however, to sketch out your plans for the entire landscape to help you stay on track and proceed in a logical manner.

** The LAT is readily adaptable to commercial applications or multiunit properties such as strata developments, apartment buildings, etc.*

TIPS

- Encourage participation by all members of your household.
- Do the Assessment on a day when the weather is enjoyable.
- Before steeping outdoors, gather the supplies you need: paper, pencil,

clipboard or a similar hard surface, and tape measure.

- Dress comfortably.
- Concentrate on the task; avoid interruptions.

THE LANDSCAPE ASSESSMENT TOOL

LIST OF LAT FACT SHEETS

1- LANDSCAPE ASSESSMENT TOOL- INTRODUCTION
2- LANDSCAPE ASSESSMENT TOOL- LAWNS
3- CHANGING HABITS
4- DORMANCY PATIO MEADOW
5- HARVESTING RAINWATER
6- LASAGNA GARDENING
7- LAWN ALTERNATIVES
8- REMOVING LAWN
9- USING LOW-WATER LAWN SEED
10- FRUIT AND VEGETABLES
11- XERISCAPE
12- CEDAR ALTERNATIVES

The Landscape Assessment Tool

Assessing the Lawn

The Landscape Assessment Tool (LAT) is a free and easy-to-use instrument to help you determine where you can reduce or eliminate outdoor water use. After using the Tool, the results can be used to help you get started on moving to a water-efficient landscape.

The development of this Tool is an Okanagan Xeriscape Association initiative following the release of the Okanagan Basin Water Board's (OBWB) report Okanagan Water Supply and Demand Project, Phase 2 in March 2010. This study reports Okanagan Valley residents use 525 litres of water outdoors **per day, year-round**, making us the highest water users in both British Columbia (490 litres) and Canada (329 litres). Additionally, **50% or more** of the outdoor water is applied to the lawn[1].

Most yards in the Okanagan Valley include a green space, typically a Kentucky Bluegrass (*Poa pratensis*) lawn. This is a good area to start your Landscape Assessment.

The benefits of a lawn include:

- provides an open area for play and/or entertaining
- in the design sense, gives your eyes a 'rest' area and is a good transition planting
- between areas
- helps cool and clean the air (through the biological processes of evapotranspiration
- and photosynthesis)
- helps to control erosion and runoff

However, Kentucky Bluegrass is a foreign species and the semi-arid climate of the Okanagan presents it with tough growing conditions. It only grows well with regular and consistent irrigation.

1. Sketch the Shape of the Lawn

If you have more than one lawn area, sketch all areas and label each region "A", "B", "C", etc.

2. Calculate the Area of the Lawn (sq. ft.)

- Use the tape to measure the length and width (in feet) of your lawn.
- Multiply the length by the width – this is the area (in square feet) of your lawn.
- If you have more than one lawn area, repeat the calculation(s), then total the results.

NOTE: If you don't have a rectangular lawn, sketch the shape of the area(s), divide them into rectangular or shapes on paper, then proceed. Remember to add up your calculations to get the total area.

3. How Practical are the Lawn Areas?

Circle the number (1-4) that best described the lawn region, as shown in the Sample below. Use a separate chart (refer to page 5) for each lawn region.

REGION *A*

ITEM	DESCRIPTION	SCORE
A. Area Lawn Size dictates the amount of water required to maintain health and vigour.	Less than 600 sq. ft.	4
	More than 600 but less than 801 sq. ft.	3
	More than 800 but less than 1000 sq. ft.	2
	More than 1000 sq. ft.	①
B. Use The lawn should be well-used for an intended purpose.	Practical, high usage area, e.g., children's play area, dog run.	4
	Moderately practical, moderate usage area, e.g., outdoor entertaining, shaded seating area.	③
	Relatively practical, low usage area, e.g., pathway.	2
	No practical usage.	1
C. Location The lawn's lot placement increases or decreases its practicality.	This region is in the front, back or side yard.	④
	This region runs along the driveway, fence or sidewalk.	3
	This region is in a shady area.	2
	This region is between the sidewalk and the roadway.	1
D. Distance from House Lawn requires a lot of water; it should be near the house.	Less than 50 ft.	4
	More than 50 but less than 75 ft.	3
	More than 75 but less than 100 ft.	②
	More than 100 ft.	1
E. Lawn Shape The best lawn shape is one similar to the spray patterns of sprinklers.	Circular, square or rectangular; good sprinkler coverage.	4
	Circular, square or rectangular; fair sprinkler coverage.	3
	Irregularly-shaped with good sprinkler coverage.	②
	Long strip less than 15' wide.	1
F. Slope A slope can waste water through runoff or pooling.	This region is level, without sloped areas.	④
	This region has a gradual slope to one side.	3
	This region has more than one slope.	2
	This region has a slope of more than 5%.	1

Just for Fun …

- Estimate the amount of water, in litres or gallons, you use annually to keep your lawn green. Residents on water meters can calculate their total outdoor irrigation use by subtracting winter average use from the totals for April through October.

- Use the following table to determine your water usage. [2] The figures in this table are calculated for the commonly recommended application of 2.5 cm (1") of water per week during the irrigation season (typically April to October).

LAWN AREA in SQ. FT.	ANNUAL IRRIGATION WATER USAGE in LITRES * (GALLONS)
1000	37,551 (9,920 gal)
1500	56,327 (14,880 gal)
2000	75,102 (19,840 gal)

* After deducting the average monthly rainfall during the growing season in Kelowna.

- How close was your estimate to the actual annual average water usage? Are you surprised at the amount of water used on your lawn?

4. Score and Analyze

Total the number of 'points', region by region. Then, analyze your lawn spaces. A single region totaling less than 20 'points' is likely an area where water is being overused or wasted.

5. Review and Research

Review some of the solutions for reducing the amount of water you use on your lawn. Each option is followed by a link to more information.

- Remove some or all of the lawn. More …
- Replace or overseed with a low-water lawn seed blend such as Eco-Lawn. More …
- Xeriscape with trees, shrubs and herbaceous perennials, particularly native low-water species. More …
- Replace with a low-water lawn alternative. More …
- Embrace "Gold is the New Green": allow your lawn to go dormant over the hot summer months. More …
- Create a meadow using native wildflowers and grasses. More …
- Install a patio (use a permeable product), deck, pathways, or other hardscape that does not require water. More …

[2] Based on calculations at www.wildflowerfarm.com.

THE LANDSCAPE ASSESSMENT TOOL: ASSESSING THE LAWN
Lawn Region Chart

Circle the number (1-4) that best described the lawn region, as shown in the Sample below. Use a separate chart for each lawn region.

REGION

ITEM	DESCRIPTION	SCORE
A. Area Lawn Size dictates the amount of water required to maintain health and vigour.	Less than 600 sq. ft.	4
	More than 600 but less than 801 sq. ft.	3
	More than 800 but less than 1000 sq. ft.	2
	More than 1000 sq. ft.	1
B. Use The lawn should be well-used for an intended purpose.	Practical, high usage area, e.g., children's play area, dog run.	4
	Moderately practical, moderate usage area, e.g., outdoor entertaining, shaded seating area.	3
	Relatively practical, low usage area, e.g., pathway.	2
	No practical usage.	1
C. Location The lawn's lot placement increases or decreases its practicality.	This region is in the front, back or side yard.	4
	This region runs along the driveway, fence or sidewalk.	3
	This region is in a shady area.	2
	This region is between the sidewalk and the roadway.	1
D. Distance from House Lawn requires a lot of water; it should be near the house.	Less than 50 ft.	4
	More than 50 but less than 75 ft.	3
	More than 75 but less than 100 ft.	2
	More than 100 ft.	1
E. Lawn Shape The best lawn shape is one similar to the spray patterns of sprinklers.	Circular, square or rectangular; good sprinkler coverage.	4
	Circular, square or rectangular; fair sprinkler coverage.	3
	Irregularly-shaped with good sprinkler coverage.	2
	Long strip less than 15' wide.	1
F. Slope A slope can waste water through runoff or pooling.	This region is level, without sloped areas.	4
	This region has a gradual slope to one side.	3
	This region has more than one slope.	2
	This region has a slope of more than 5%.	1

Fact Sheet

Water Conservation on the Lawn and Elsewhere

Changing your lawn maintenance habits can go a long way to reducing your outdoor water use.

Lawn Watering

- Water in the morning. To avoid water loss to evaporation, water during three hours before to three hours after sunrise.
- Water deeply once or twice a week, instead of shallowly and every day. This will encourage roots to grow deeper into the soil to find water.
- Water when the wind is calm.
- Adhere to watering restrictions; they are in place for a reason!

Irrigation System - Installation

- Be sure a certified irrigation technician installs your system. Search here for a Level 2 Certified Technician in the Okanagan.
- Although it initially costs more, have your irrigation installer use good quality fittings.
- Enquire about parts and installation warranty.
- Use sprinklers that spray water droplets; avoid misting heads as they are more vulnerable to evaporation and wind.
- Use a controller with: a) six or more zones, b) a rain day button, c) two or three different start times, d) days of the week option.
- Be sure the irrigation technician writes the zones and settings into your irrigation instruction manual. Leave it near the controller for quick reference.
- Ensure the irrigation technician shows you how to schedule and/or adjust the contoller.

Irrigation System - Maintenance

- Adjust your controller as required during the growing season. Your lawn requires less water in the spring and fall than during the peak season (July/August).
- Use the rain day setting on your controller or have a rain/moisture sensor on your system.
- Have your irrigation system blown out in the fall to avoid damage caused by water freezing in the pipes over the winter.
- Perform spring maintenance. Ensure all sprayers and emitters are working properly.
- Use the tuna can method (see below) to assess the coverage of your lawn sprinklers.

… continued

Lawn Maintenance

- 'Good' soil – one that is at least 3-4" deep and contains a good level of humus or organic material to retain moisture and provides root access to oxygen and nutrients – is the key to a healthy lawn.
- Once your lawn is established, practice grasscycling: leave grass clippings on your lawn. They decompose quickly to recycle organic matter and nutrients back into the soil to feed the lawn.
- Set your mower blades to cut the grass to a height of 3".
- Mow regularly to avoid removing more than 1/3 of the blades each time. This reduces stress on the lawn … and makes your job a lot easier too.
- Avoid using chemical fertilizers. They make your lawn grow faster which means it will need more water and more mowing. Chemical fertilizers also cause beneficial soil microorganisms to die, leaving your lawn dependent on regular doses of chemical fertilizers. A high percentage of the fertilizer ends up leaching into groundwater and then into our drinking water.
- Work towards getting your lawn 'off drugs' by using compost or organic matter to improve the soil and lessen the need for synthetic fertilizers. If you 'inherited' lawn that was laid on poor soil, be sure to aerate when the lawn is growing actively (early fall or late spring). Topdress with a good quality compost to slowly bring the lawn back to a naturally healthy state.
- Allow your lawn to go dormant in the summer. It will reawaken as the cooler, moister fall weather approaches.
- Mow the lawn when it is relatively dry.
- Keep the blades of your mower sharpened to avoid stress to the lawn.
- You can further reduce your footprint by using an electric mower. One hour running a gas mower is equivalent to the pollution of driving a car 800 km. A push mower is even better – good exercise and. your neighbours will likely appreciate the quiet too!
- It is best to eliminate the use of pesticides and herbicides on your lawn. They are harmful to pets and humans, especially children. They also leach into the groundwater and ultimately contaminate our drinking water. A healthy lawn quite ably competes with non-beneficial insects, pests, and weeds.

Other Ways to Reduce Outdoor Water Use

- Use the Landscape Assessment Tool and accompanying Fact Sheets.
- Adjust sprayers to eliminate watering hardscape such as patios, driveways, sidewalks, roads, etc.
- Sweep your path and driveway – no need to use water.
- Commercial car washes often recycle water. Use these businesses to wash your vehicle or drive it onto your lawn to recycle your water. Use a 'green' soap, if any at all.
- Eliminate narrow strips of lawn and steeply sloped grassed areas. They are difficult to water efficiently and mowing a sloped area can be hazardous.
- Use rain barrels to capture water from your roof. Click here for more on harvesting

… continued

rainwater.

- Convert to drip irrigation wherever possible. It is much more efficient for everything except the lawn. In-line grid systems are the best. An existing underground system is readily adaptable.
- Read the City of Kelowna's Landscape and Irrigation Guide to Water Efficiency.

Re-Using your Tuna Can

Lawns need about about 1 inch of water per week -- 1½ inch when it is very hot. Place empty tuna cans or measuring cups around the yard (all within range of the sprinkler, some close, some farther away). Turn on the sprinkler for 30 minutes. After 30 minutes, measure the amount of water collected in each can. Check to see if there was even distribution of water in all the cans/cups. If the cans/cups collected 1 inch of water, then you know you need to water for 30 minutes. If the cans collected more or less than 1 inch of water, then calculate approximately how long you need to water your lawn so it receives 1 inch of water in each watering session.

Fact Sheet

Lawn Alternatives

Should the Landscape Assessment Tool results indicate you do not really have any practical reason for a grassy area, consider removing the lawn entirely and replacing it with a lawn alternative.

Lawn alternatives are simply low growing plants (groundcovers) that spread to form a mat of 'green' space. Some tolerate traffic, many are evergreen, many bear flowers, some produce berries.

Most importantly, this Fact Sheet offers some ideas for lawn alternatives that are low-water and low-maintenance.

Consider removing your lawn using the 'lasagna gardening' method, as it is the most environment-friendly way of accomplishing the task.* Then, plant your selected lawn alternative into the mulch. Click here for more on 'lasagna gardening'.

* Lasagna gardening and sheet mulching are not effective on sandy soils.

Here are a few of the many options for lawn alternatives, including suitability, cultural requirements, comments, etc. Click here for information about low-water turf seed blends.

DUTCH WHITE CLOVER

- tolerates low to moderate traffic; when mixed with a drought-tolerant lawn seed blend, it withstands moderate to heavy traffic
- drought resistant
- greens early in the spring
- mow in mid-summer to maintain orderly appearance
- flowers attract bees
- inexpensive
- grows in poor soil
- improves soil through nitrogen fixing
- use a mix of clover and grass in areas where erosion is an issue

CREEPING STONECROP (SEDUM)

- does not tolerate foot traffic
- drought resistant once established
- 'semi-evergreen' – may retain some leaf colour through winter
- variety of flower colours and foliage colours and shapes
- thrives in nutrient-poor, well-drained soil
- full sun to part shade

TURKISH SPEEDWELL (VERONICA LIWANENSIS)

- tolerates light traffic
- drought resistant in part shade
- evergreen – leaves turn a bronzy colour in extreme heat and sun
- flowers mid spring to early summer
- full sun to part shade

BLUE RUG JUNIPER

- occasional light traffic
- especially good on slopes
- tolerates some shade
- very little water requirement once established
- tolerates many soil conditions, provided it is well-drained
- evergreen

WOOLLY OR CREEPING THYME

- light traffic; woolly thyme foliage emits a pleasant fragrance
- full sun
- mother-of-thyme is another groundcover thyme that spreads relatively quickly
- all have pink to light purple flowers
- low water requirement once established
- shear with a mower after bloom to encourage robust growth
- all are evergreen but may need some clean-up in spring

KINNIKINNICK (BEARBERRY)

- no traffic
- slow to establish, then grows at a moderate to fast rate
- full sun to partial shade
- low water requirement in part shade once established
- light pink flowers in mid spring
- colourful berries in fall
- evergreen
- prune winter dieback in spring, if necessary
- try to plant native kinnikinnick, not a cultivar
- best in poor soils

COMMON YARROW

- tolerates heavy traffic
- spreads by rhizomes – keep it in control
- full sun
- water every 2-3 weeks until established, then no supplemental water required
- plant the native common yarrow
- tolerant of poor soil
- mow every 6 weeks during growing season: flower stems are not 'nice' on bare feet!
- semi-evergreen

NOTE

For areas of dry shade consider Japanese spurge, periwinkle, sweet woodruff, lamium or English ivy. Be sure to contain these spreaders.

… continued

Fact Sheet

Tips on How to Remove Lawn

SOD CUTTER

A sod cutter is a gas-powered machine that is maneuvered much like a rototiller. The height (depth of the cut) of the blade is adjustable. Sod cutters can be rented from local rental centres.

ADVANTAGES

- Removes most of the existing grass roots.
- Removes a thick layer of weed seeds.

DISADVANTAGES

- Very hard, heavy work.
- Removes the most nutrient-rich layer of soil.
- Must remove sod under trees by hand to avoid root damage.

COMMENTS

- Mark pop-up sprayers to avoid damage.
- Exercise care when using a sod cutter on slopes or uneven ground.
- Mow the grass before you begin; remove the turf when it is not too wet.

ROTOTILLER

This method takes patience, as you need to rototill several times. Between each tilling, let the lawn sit four to six weeks to allow the grass/weeds to re-sprout.

ADVANTAGES

- Easier to maneuver than a sod cutter.
- Retains the layer of soil containing the most nutrients and organic matter.

DISADVANTAGES

- Area will be distrupted for several months.
- Must remove sod under trees by hand to avoid root damage.

COMMENTS

- Do **not** rototill if your turf contains bindweed or <u>any</u> noxious weed that propagates by rhizomes.
- Unless you are certain your underground irrigation system is deeper than the tines of the rototiller, do **not** use this method.
- Mark sprinkler heads of underground irrigation before beginning.
- Be prepared to spend time raking and leveling the tilled area.

'LASAGNA GARDENING'

This is a layered mulch system. New plantings can be planted through the mulch, but if you've planned where new trees and shrubs are to go, it is easier to plant <u>before</u> beginning. Click here for a Fact Sheet on removing your lawn successfully using lasagna gardening.

... continued

SPRAYING WITH ECO-CLEAR

If you are planning to overseed or reseed your existing turf, this method is an option to consider closely. Use a 'mild' herbicide called 'Eco-Clear'. This product is a blend of acetic and citric acids. Always follow the label directions closely. Keep humans and pets off recently sprayed areas.

ADVANTAGES	DISADVANTAGES	COMMENTS
• Little labour involved. • Kills turf and growing weeds.	• Eco-Clear is relatively new on the market; it is expensive. • May need several applications to kill some perennial weeds. • Does not kill weed seeds, only vegetative growth. • Do not spray on a windy day or when rain is forecast within 24 hours.	• Residential use of cosmetic herbicides by other than certified applicators is being reviewed in BC. Many communities have already banned such use. • Eco-Clear is a post-emergent, foliar spray; it is only effective on actively growing vegetation.

SOIL SOLARIZATION

Solarization is accomplished by completely covering an area with clear or black plastic during July and August. The intense heat that builds up under the plastic kills the turf and weeds.

ADVANTAGES	DISADVANTAGES	COMMENTS
• Easy to do. • Does not remove organic matter or nutrients from the soil.	• Can cause an anaerobic effect, killing beneficial micro and macro organisms in the soil. • Heavy winds can displace the plastic; anchor it very well with stones, soil, or wood. • Unsightly.	• Mow the grass as short as possible and water well before covering the area with the plastic. The combination of heat and water speeds up turf decomposition. • Use a 4-6 mils weight of plastic. • Typically, leave the plastic on the soil for 6-8 weeks.

Fact Sheet

Embracing Dormancy, Installing a Patio, or Creating a Meadow

This Fact Sheet introduces three other options for reducing water use on your lawn.

EMBRACING DORMANCY

The simplest of these options is to embrace "Gold is the New Green", that is, allow your lawn to go 'gold' during the hot and dry summer months. As illustrated in the image to the left, it appears the lawn is dead. In fact, the Kentucky Bluegrass is in dormancy, a natural state for cool season grasses. When the cooler, wetter weather arrives in September, the lawn will green up again, much as it does in the spring at the beginning of the growing season.

In the meantime, enjoy the low maintenance!

For more information on changing your watering habits, click here.

INSTALLING A PATIO

Like any of the options presented in the Landscape Assessment Tool Fact Sheets, be sure to plan or design any changes on paper before beginning the work.

Depending on your skill level, how much time you have to devote to the project, and how complex the work is, you may wish to hire a contractor to install a hardscape patio where you previously had lawn.

Our recommendation is the use of a permeable product such as paving stones, permeable pavement, decomposed granite, etc. This allows rain to penetrate into the soil, minimizing run-off problems and maintaining a healthy ecosystem for subsurface micro and macro organisms.

CREATING A MEADOW

A meadow is a great option for either a lawn replacement or a transition zone between wild (native) and conventional areas in your yard. They are beautiful to look at and provide nectar, food and shelter for birds and pollinators.

Similar to seeding a low-water blend of lawn seed, it is important that particular effort be put into preparing the site by removing as many weeds as possible. If the soil is disturbed (through tilling or sod removal), be sure to allow time for weed seeds to germinate (perhaps more than once) to ensure your meadow is a success. It is also important to be able to recognize the weeds so you will be able to differentiate between weed seedlings and your meadow mix when you are weeding your new meadow.

… continued

TIPS

- Choose a sunny location.
- Be sure to use seeds and plants that are native to the Okanagan Valley; avoid scattering a 'Wildflower Meadow Mix' as these products often contain undesirable species and/or weed seeds.
- Use a mix of wildflower seeds and native grass seeds to get a natural look. Plugs (small plants rooted in containers) can 'jump start' your meadow project as they do not have to go through germination and the treacherous seedling stage.
- The best time to seed is in early spring for late summer/early fall. If your species selection includes annuals, seed in the spring so the plants can complete their life cycle and product new seed before frost.
- Try mixing the seeds with vermiculite or sand to obtain more even distribution.
- Seed on a day with very little or no wind.
- After seeding, rake the area lightly to give some coverage to the seeds, then tamp it down.
- Water the area thoroughly and keep seeds moist with daily light sprinkling until they have germinated. Continue to water until the plants are well established, paying particular attention in the hot summer months.
- Do not fertilize your meadow.
- Weeding will be necessary, especially in the first year. After two or three years, the meadow should be robust enough to minimize weed seed germination.
- Begin weeding maintenance when the meadow has grown to the point where undesirable growth can be identified.
- Mow or cut your meadow in late fall to encourage reseeding.
- Be patient! Some wildflowers do not bloom until their second season.

Fact Sheet

Replacing or Overseeding Your Lawn with a Low-Water Seed Blend

There are several low-water seed blends on the market in the Valley: fescue blends including the popular Eco-Lawn™; Enviro-Turf, which is a blend of three fescues and perennial rye grass; buffalo grass; and blue grama grass. From the chart below, select the product that best suits your growing environment.

PRODUCT or SEED (see photo above)	SHADE TOLERANCE	WATER NEEDS	IDEAL SOIL	GROWTH SPREAD	COOL or WARM SEASON*
Eco-Lawn™	Excellent	Low	Sand/silt-loam	Clumps	Cool
Enviro-turf	Excellent	Low to medium	sand/silt loam	Clumps	Cool
Buffalo Grass	None – requires full sun.	Low	Silt-clay	Stolons	Warm
Blue Grama	Low	Low	Silt-clay	Clumps	Warm

* In the Okanagan Valley, cool season grasses tend to be green year-round due to heavy irrigation. They are naturally dormant (brown) in the summer's dry heat. Warm season grasses are dormant from October to April/May. The ideal time to seed a cool season lawn is late August to late September. Seeding in April also works well. Warm season grasses need more warmth to germinate and grow; late spring to mid-June is the best time to seed or plant plugs for these grasses.

Note: Buffalo grass plugs (small rooted plants) may be available.

. . . continued

IMPORTANT!

To experience a successful lawn installation, regardless of the method, pay particular attention to:

- preparing the site including killing or removing as many weeds as possible
- ensuring the seed receives regular moisture during germination through to establishment (typically one year)

NOTE: The best place to have a successful lawn is a flat location with good soil, that is easy to water (created in the shape of the sprinkler pattern) and easy to mow.

Click here for general instructions on seeding a lawn.

There are a few ways to overseed your lawn; choose the method that best fits the current state of your lawn. In all cases, remove or destroy as many weeds as possible!

LAWN STATE: GOOD CONDITION

- Use Eco-Lawn™, Enviro-Turf or another fescue blend.
- Mow the lawn as short as possible, then rough it up with a garden rake or lawn cultivator. You want the seed to come in contact with soil. Alternately, aerate the lawn.
- Cover with 1/8 – 1/4" of compost or enriched soil and tamp down.
- Seed according to package directions.
- During germination, keep the seeds moist with daily short watering. If you wish to have your low-water lawn overtake the Kentucky bluegrass lawn, repeat this procedure for 3-4 years (in April and August/September, if possible). Note that once the new lawn seed is established (after the first year), a reduction in supplemental water will result in the remaining Kentucky bluegrass going dormant. This gives the more drought tolerant grasses an advantage to get established.

LAWN STATE: FAIR CONDITION

- If your lawn is in fair condition, you have a couple of options.
  Option 1: Use Eco-Lawn™, Enviro-Turf or another fescue blend. Follow the instructions for a lawn in Good Condition (above).
  Option 2: If there are more bare patches than not after removing or destroying weeds, you may want to cover the area with topsoil or a topsoil/compost mix and seed into bare soil. Choose the lawn seed based on where the lawn is sited on your landscape. (See chart on previous page.) Test the soil for pH, as most turf grasses prefer acidic to neutral soil. Click here for general instructions on seeding a lawn.

LAWN STATE: POOR CONDITION

- If your lawn is in poor condition and badly infested with weeds, consider removing the lawn then start again.
- Or, you can cover the area with topsoil or a topsoil/compost mix to a depth of 2-3". Do not simply cover the area if you have bindweed or another noxious weed in your lawn.
- Choose the lawn seed based on where the lawn is sited on your landscape. (See chart on previous page.) Test the soil for pH, as most turf grasses prefer acidic to neutral soil. Click here for general instructions on seeding a lawn.

Fact Sheet

Harvesting Rainwater

Even though we typically do not have much moisture during July, August and (often) September in the Okanagan Valley, opportunities exist for collecting and dispersing rainfall at other times of the year. If an effective rainfall collection and dispersal system is in place, enough rain falls annually to adequately water turf-free yards for the entire year.

A virtually fail-safe water catchment and conservation system can be achieved by taking a multi-faceted approach.

Five ways to conserve water are shown in the table below*; two of the methods are xeriscape principles, and all offer other benefits as well.

- The least expensive place to store water is in the soil. Contouring involves creating a swale or series of swales (also called bioswales) to collect water and allow it to percolate slowly into the soil.
- Every home has a rainwater collection system built right into it: the roof. Collect the rainwater in a series of water barrels or a rainwater tank. Excess collected water can be redirected into a swale, rain garden, pond or other practical storage system.

METHOD	BENEFITS
Use soil materials with high organic matter content	Holds moisture, adds fertility, stores nutrients, boosts soil life, 'fluffs' soil, sequesters carbon.
Mulch deeply	Slows evaporations, cools soil, adds fertility, boosts soil life, smothers weeds, provides habitat for beneficial insects and microorganisms.
Plant according to water needs	Conserves water, less weed growth, plants survive drought, encourages native plants.
Plant densely	Shades soil, smothers weeds, increases biodiversity, increases yields.
Contour soil	Catches water, directs water where needed, helps plants and soil life survive both wet and dry periods, builds humus, adds visual interest.

RESOURCES

- Gaia's Garden: A Guide to Home-Scale Permaculture by Toby Hemenway (2nd Ed.)
- Introduction to Permaculture by Bill Mollison with Reny Mia Slay
- Rainwater Harvesting for Drylands, Vol. 2 by Brad Lancaster.
- Sustainable Landscaping for Dummies by Owen Dell.
- Numerous websites, blogs and videos.

Fact Sheet

How to 'Remove' Lawn Using Lasagna Gardening

'Lasagna gardening' is a layered mulch system. It is effective at killing turf without disturbing the soil surface. Disturbing the soil encourages weed seed germination. Also, you do not lose valuable topsoil nutrients using this method; instead, the organic mulch further enriches the soil and improves its texture.

ADVANTAGES	DISADVANTAGES	COMMENTS
• Easy to do and inexpensive. • Valuable topsoil stays in place. • Adds organic matter to the soil.	• If planting is being done before sheet mulching, you must manually remove turf from areas where plantings are planned.	• Sheet mulching is not effective in fast-draining soils. • Do not sheet mulch over septic drainage fields. • Be sure to mark popup sprayers to avoid covering them with the sheet mulch. You want to convert them to a drip and/or micro irrigation system.

1. Prepare the Site

- Mow the lawn and weeds as short as possible; remove any plant material you do not want in the transformed area.
- Deeply water the cut lawn. Once the area is covered with layers, the moisture, combined with the lack of oxygen and light, introduces a fungus that helps hasten the death of the lawn.
- Dig holes in areas where trees or shrubs are planned. It is easier to plant now than trying to cut through the cardboard/newspaper layer of the mulching. Be sure to remove any weed roots prior to planting.
- Amend the soil with organic matter and/or compost only if a soil test shows a deficiency. NOTE: Amending a planting hole in heavy soil can create a bog garden where plant roots will rot.
- Water the plant thoroughly.

2. Add the Sheet Compost Layers

- Lay 2-3" of manure, followed by 3-4" each of organic material such as leaves, mulched vegetative stems, grass clippings, or straw.
- Soak the area with water.

… continued

3. Add a Weed Barrier

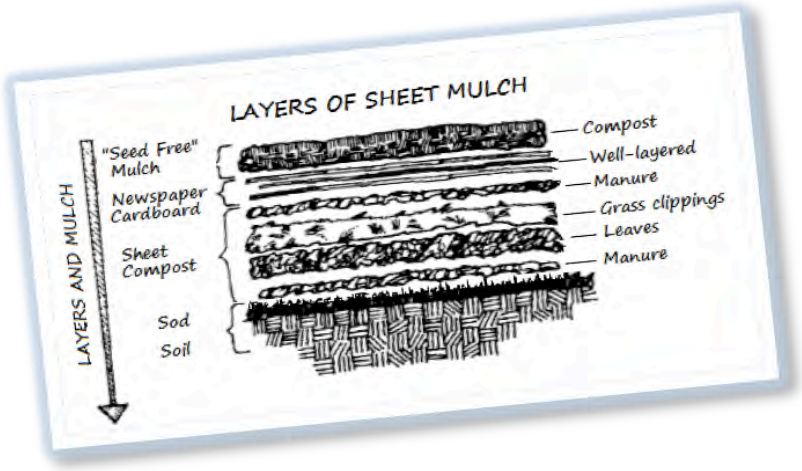
- Put down an organic weed barrier; it is essential the barrier allow water and air to pass through. Do not use plastic.
- Recycled cardboard or a thick layer of newspaper work well. Make sure the layers overlap. Two or three layers (more for newspaper) may be required to achieve a 1/2" thickness.
- Leave a generous opening (for air circulation) around the root crown of established or newly planted trees and shrubs.
- Wet down the weed barrier.

4. Layer Compost and Mulch

- Lay 2" of compost. It is critical this compost is free of both weeds and weed seeds.
- Once again, water your project.
- The final layer is bark mulch. Spread an 3-4" layer of bark mulch. Not only does this layer keep everything 'in place', it is a great weed barrier in itself. Also, the bark mulch will gradually decompose, adding even more organic matter to the planted area.

TIPS

- A simpler method is to place the cardboard directly on the turf, then cover with 4-6" of mulch. Be sure to water each layer.
- Prepare, plant, and place the layers for one area before repeating the process in another.
- Choose a day without wind.
- Have all the materials on-site before you begin.
- Drip or micro irrigation is laid on the top layer of compost layer, underneath the bark mulch.



- Do not sheet mulch right up to the stems or trunks of large shrubs and trees. Leave at least 6" cm of bare soil around the stems (trunk) of larger shrubs or trees.
- Decomposition occurs more quickly in heat. Try sheet mulching in the spring to take advantage of the upcoming warmer months.
- Smaller plant material can be added once the lawn is dead or even when decomposition is well underway. If it is not fully decomposed, use scissors or a sharp knife to cut an 'X' in the cardboard/newspaper layer before digging the planting hole.
- The fall is a terrific time to plant. At the same time, you can 'top up' the surface layer of mulch, if necessary.
- *'Many hands make light work!'*

Fact Sheet

Vegetable and Fruit Gardening

More and more homeowners are growing vegetables and small fruits. Here are just a few of the many reasons edible gardening is increasingly popular:

- combat the rising cost of produce
- reduce one's carbon footprint
- ensure toxin-free fruits and vegetables
- 'reconnect' with the earth.

Or, it may simply be the joy of nurturing a seed from germination through its life cycle.

Without a doubt, there is an unbelievable sense of accomplishment in harvesting and storing food you've grown yourself.

The practice of conventional, non-commercial row gardening is slowly giving way to growing food in raised beds and watering by hand or with drip irrigation.* In addition to plants shading the roots of their neighbours and reducing evaporation, the raised beds are superior in a number of ways:

- the soil can be a blend of products formulated specifically for food growing and to help ensure a bountiful harvest
- a good blend does not contain dormant weed seeds, thus reducing weeding maintenance
- simply add compost and/or grow a 'green manure' to boost nutrients year-to year
- crop rotation and succession planting is much easier to manage
- the close spacing of plants leaves less room for weeds to grow
- if beds are built so the garden can easily be reached from either side, there is never an issue with soil compaction as there is no need to walk on the planting area
- the drip method of irrigation ensures water is going directly to the roots – it is not sitting on the foliage nor is it broadcasting spray that is both wasteful and encourages weed growth.

Drip irrigation for food gardening should be on a dedicated zone(s) as food crops generally require more frequent watering than a xeriscape. It is inexpensive and easy to install and can be adapted from a pop-up sprayer formerly used in a lawn area. Click here for more information on conserving water in the vegetable garden.

* Cane fruits and some vegetables (for example asparagus) perform better planted directly into the ground.

Fact Sheet

The Principles of Xeriscape

The word 'xeriscape' ('zir-ə-skāp, 'zer-ə-skāp) originates from the Greek word *xeros*, meaning 'dry'. The word was first used (and was trademarked by) the Denver Water Board in Colorado.

There are many definitions of the term, but they all have one thing in common: conserving water in the landscape.

Similarly, there are many reasons to xeriscape:

- achieve 50% or more reduction in water use
- lower water use results in lower maintenance
- increase the value of your property with an attractive water conserving landscape
- create a landscape that will survive restricted water use during peak periods or drought conditions
- eliminate the need for toxic herbicides and fertilizers
- have a tangible, enjoyable way to reduce your impact on our environment
- provide food and habitat for many Okanagan species by using low-water native selections

Contrary to the common perception of xeriscape as large expanses of rock mulch with a few cactus and yucca providing the only signs of vegetation, a properly designed and installed xeriscape can be a colourful, lush, low-water landscape that provides year-round interest and beauty.

Xeriscape follows seven established principles. Generally, each principle builds on the one before it. To achieve the full benefits of xeriscape, implement all seven principles.

1. Planning and Design
2. Soil Analysis and Amendments
3. Practical Turf Areas
4. Plant Selection
5. Irrigation
6. Mulch
7. Maintenance

Water management and conservation is identified as an important matter in the Okanagan (and, indeed, globally). There are many excellent informative resources available locally, as well as a growing availability of appropriate plant material, both native and adapted species.

- Okanagan Xeriscape Association (OXA) at www.okanaganxeriscape.org. Be sure to check out the Plant Database.
- xeriscape classes offered by OXA and Okanagan College (www.okanagan.bc.ca)
- xeriscape garden tours guided (G) and self-guided (SG): un-H2O Garden (SG); Meadowlark Festival (G); Summerland Ornamental Gardens (SG); Grasslands Nursery - Summerland (SG); tours hosted by Valley garden clubs (G).

Fact Sheet

Alternatives to Pyramidal Cedars and High Water Use Shrubs

Cedar hedges. One sees them 'everywhere' in the Okanagan and, although they are functional and inexpensive to purchase, they have a stressful existence in the dry Okanagan Valley.

Growing a hedge using pyramidal cedars has a number of benefits including:

- fast-growing
- can be pruned or trimmed
- evergreen
- inexpensive hedging material.

However, there are cultural requirements that create drawbacks to using pyramidal cedars in our region. They require:

- a lot of water, compared to alternative hedging plants (see below)
- annual fertilizing
- full sun exposure.

Other disadvantages to growing cedars in the Okanagan include:

- they are a favourite browsing material for deer
- the climatic stresses result in dead or dying cedars needing replacement.

Alternatives to Cedar Hedges

There are some excellent alternatives to pyramidal cedar hedges. These plants create a lush, full hedge without drawing heavily on our water resource.

HEDGING YEW

- tolerates full sun to shaded areas
- tolerates wide range of well-drained soil types, but prefers sandy loam
- evergreen
- not attractive to deer
- low-water once established
- tolerates heavy pruning
- **Both the arils ('berries') and foliage of yew are toxic and should not be ingested.**

PYRAMIDAL JUNIPERS

- several cultivars are available, including 'Spartan' junipers that look much like hedging cedar
- grows at a moderate rate, except for 'Spartan' which is fast-growing
- tolerates full sun and light shade
- tolerates a wide range of well-drained soil types
- low water requirements once established
- do not require fertilizing
- evergreen
- deer-resistant

… continued

Alternatives to Pyramidal Cedars and High Water Use Shrubs

OREGON GRAPE

- native plant, well-adapted to native soils
- tolerates full sun but prefers some light shade
- evergreen (broadleaf)
- fragrant flowers in spring; colourful edible berries in fall
- deer-resistant
- restrict watering once established to discourage suckering and 'ill-mannered' growth (or enclose with a root barrier)
- prickly leaf edges make it a good barrier plant

PRIVET

- deciduous, but holds bluish-black berries through the winter
- very dense foliage, providing a good shelter and nesting site
- tolerates trimming
- low-water once established

There are many shrubs that can replace those that use a lot of water. A selection of low-water deciduous shrubs can make a very attractive hedge as well. Choices include:

- Arnold's Red Honeysuckle
- Forsythia
- Wayfaring Tree
- Smokebush (*Cotinus coggygria*)
- Mock Orange
- Lilac
- Beauty Bush
- Barberry
- Saskatoon
- Rosa rubrifolia (needs root barrier)

Tall ornamental grasses can also be used as a hedge. Although they are cut back in the spring, they grow quickly and can screen through the winter.

Be creative: a mix of deciduous and evergreen shrubs, at varying mature heights and differing bloom times and foliage colours can create an outstanding hedge or screen.

Check the plant database at www.okanaganxeriscape.org for more options.

THE LANDSCAPE ASSESSMENT TOOL: ASSESSING THE LAWN
Lawn Region Chart

Circle the number (1-4) that best described the lawn region, as shown in the Sample below. Use a separate chart for each lawn region.

REGION

ITEM	DESCRIPTION	SCORE
A. Area Lawn Size dictates the amount of water required to maintain health and vigour.	Less than 600 sq. ft.	4
	More than 600 but less than 801 sq. ft.	3
	More than 800 but less than 1000 sq. ft.	2
	More than 1000 sq. ft.	1
B. Use The lawn should be well-used for an intended purpose.	Practical, high usage area, e.g., children's play area, dog run.	4
	Moderately practical, moderate usage area, e.g., outdoor entertaining, shaded seating area.	3
	Relatively practical, low usage area, e.g., pathway.	2
	No practical usage.	1
C. Location The lawn's lot placement increases or decreases its practicality.	This region is in the front, back or side yard.	4
	This region runs along the driveway, fence or sidewalk.	3
	This region is in a shady area.	2
	This region is between the sidewalk and the roadway.	1
D. Distance from House Lawn requires a lot of water; it should be near the house.	Less than 50 ft.	4
	More than 50 but less than 75 ft.	3
	More than 75 but less than 100 ft.	2
	More than 100 ft.	1
E. Lawn Shape The best lawn shape is one similar to the spray patterns of sprinklers.	Circular, square or rectangular; good sprinkler coverage.	4
	Circular, square or rectangular; fair sprinkler coverage.	3
	Irregularly-shaped with good sprinkler coverage.	2
	Long strip less than 15' wide.	1
F. Slope A slope can waste water through runoff or pooling.	This region is level, without sloped areas.	4
	This region has a gradual slope to one side.	3
	This region has more than one slope.	2
	This region has a slope of more than 5%.	1