

4.2-o NURSERY FACILITY MANAGEMENT

DESCRIPTION

With careful management, plant production can be maximized while protecting soil and water resources. If properly located, designed, and constructed, the discharge of degraded runoff to storm drains, ground water, and water bodies from nursery facilities can be minimized or prevented.

APPLICABILITY

New nursery facilities should be located on high capability lands away from Stream Environment Zones (SEZs) and the backshore. Locate nursery facilities on gently sloping or flat land (5 percent slope or less) that drains away from sensitive lands, wells, or storm drains. Do not locate these facilities within 100 feet of an SEZ, in areas subject to overland flow from upslope areas, and in areas which have less than 4 feet from the soil surface to the groundwater table at any time of the year.



Advantages

- The implementation of improved management practices for nutrient and irrigation inputs can reduce production costs.
- BMP installation and good housekeeping assists nursery owners to sustain compliance with state and federal water quality standards.

Disadvantages

- Proper nursery management may require additional time and resources.

DESIGN CONSIDERATIONS

While nurseries provide many of the native plants needed for revegetation efforts, they may have an adverse impact to surface and ground water. Potential contaminants may include nutrients, hydrocarbons, pesticides, herbicides, pathogens, and/or sediment. Improper planter bed irrigation may also lead to surface erosion. In order to prevent this contamination, nursery facilities must be equipped with appropriate BMPs and staff routinely trained on good housekeeping practices.

BMP DESIGN APPROACH	
<input checked="" type="checkbox"/>	Pollutant Source Control
<input type="checkbox"/>	Hydrologic Source Control
<input type="checkbox"/>	Stormwater Treatment
SCALE OF APPLICATION	
<input type="checkbox"/>	All SFR and MFR < 1 acre
<input checked="" type="checkbox"/>	MFR 1-5 Acre and CICU < 5 acres
<input checked="" type="checkbox"/>	MFR and CICU > 5 acres and all WQIPs
TYPE OF APPLICATION	
<input type="checkbox"/>	Temporary
<input checked="" type="checkbox"/>	Permanent

Production Areas:

- Container planting areas located in high capability land may be placed on gravel, geotextile fabrics, or weed cloth to allow infiltration and minimize erosion, even inside greenhouse structures.
- Container planting areas located on low capability land or near high groundwater should be placed on impervious surfaces and excess runoff water conveyed to a treatment and infiltration facility.
- Install drip irrigation systems and check systems routinely for distribution uniformity, leaks, etc., make corrections to ensure that plants are not being overwatered which will prevent excessive runoff and contaminate leaching.
- If overhead sprinkler systems are used to irrigate, minimize or eliminate the use of fertilizer injection. Shift to using controlled-release and slow-release fertilizers. Do not inject overhead irrigation systems with pesticides.
- Design layout and/or use windbreaks to minimize plant blow over so fertilizer does not spill from containers, to reduce water loss from container substrate due to evapotranspiration, and to reduce influence of wind on water application uniformity. Group plants with similar water and nutrient needs together.
- Provide signage, parking barriers, and/or fencing to prevent encroachment into non-production areas. All non-production areas should be restored to native conditions.

Fertilizer, Pesticide, and Herbicide Use and Storage:

- Fertilizer, pesticide, and herbicide shall be stored indoors or within secondary containment systems. All spills or leaks require immediate clean up. Refer to Section 4.2-n, Hazardous Material Management for more details.
- Refer to Chapter 5 Vegetation and Soil Management for proper use of fertilizer, pesticide, and herbicide.

Mixing and Potting Areas:

- Mixing and potting should be performed under cover.
- Watering of new transplants should occur on gravel or paved surfaces.

Roads and Paved Areas:

- Runoff from roads and paved areas should be directed to appropriate treatment and infiltration BMPs to help remove pollutants such as sediment, organic matter, and contaminants before it leaves the nursery and enters ground or surface waters. Heavily contaminated water may require on-site filtration systems.

Compost and Waste Management:

- Secure trash receptacles from precipitation, wind, and animals.

- Contain all stock and spoil piles within a perimeter barrier and an impermeable cover. Refer to Section 4.5-n, Stockpile Management for more details.

INSPECTION AND MAINTENANCE

- Inspect and maintain all retention, infiltration, and filtering systems. Detention basins, treatment lagoons, vegetated swales, or other BMPs should be operated such that the design storm volume is available for storage of runoff. Solids should be removed as soon as possible following storm events to ensure that needed solids storage volume is available for subsequent storms.¹³
- Develop an operations and maintenance plan with maintenance log book to track and record BMP inspection dates and maintenance activities. Refer to Chapter 6, Inspection, Maintenance, and Monitoring for examples.
- Conduct routine employee training on good housekeeping procedures specific to the facility. Track and record training dates and participants.

EFFECTIVENESS CONSIDERATIONS

Good planning and employee training will minimize potential for stormwater contamination from commercial nurseries.

¹³ EPA, 2008, *Management Measure for Facility Wastewater and Runoff from Confined Animal Facility Management (Small Units)*. http://water.epa.gov/polwaste/nps/czara/upload/czara_chapter2_agriculture.pdf

