# Aquatic Weed Management (Lakes And Ponds)

## Table 1. Floating weed (unattached, leaves/steams above water).

| Formulated product and rate | Types of aquatic weed or site | Remarks and precautions |
|---|---|---|
| Galleon (penoxsulam) @ 2-5.6 fl oz/A + 0.25% nonionic surfactant foliar or 25-75 ppb total water | Water hyacinth, duckweed, common salvinia, giant salvinia.* | Can be used to control floating weeds in 2,4-D-restricted areas. Also, can be used as an in-water/subsurface application at 25-75 ppb. *With difficult-to-control weeds, such as giant salvinia, a minimum 60-day contact time is required if applied subsurface; 75 day minimum contact time often results in improved control. Do not apply this product subsurface if rapid dilution is expected. |
| Clearcast or Imox (imazamox) @ 16-64 oz/A + surfactant | Water hyacinth, common salvinia and frog's bit. | Can be used to control water hyacinth in 2,4-D-restricted areas. |
| 2,4-D amine, DMA 4 IVM, Shredder Amine, WEEDestroy AM-40, Weedar 64, or others @ 64 oz/A | Floating mats of alligatorweed, water hyacinth. | Apply on foliage when weeds are actively growing. Spray to uniformly wet foliage. Avoid use in waters used for irrigation. |
| Diquat, Reward, Tribune or others (Diquat) @ 64-128 oz/A + 0.25% surfactant | Duckweed species, water hyacinth, water lettuce, giant/common salvinia, mosquito fern. | Apply on foliage when weeds are actively growing. Apply as a surface spray. Follow label for water restrictions after application. Apply up to 128 oz/A with 50-200 gallons of water per acre (50-200 GPA). |
| Habitat, Polaris, Arsenal, or Imazapyr 2SL, Imazapyr 4SL @ 32-48 oz/A + 0.25 % nonionic surfactant | Duckweeds, water hyacinth. | Apply when weeds are actively growing. Follow potable and irrigation water restrictions. Must be applied by certified commercial applicator only. |
| Rodeo, Refuge, Roundup Custom, AquaPro, AquaNeat, Glyphosate 5.4, or others @ 64-96 oz/A + 0.25% surfactant | Giant salvinia, common salvinia and water hyacinth. | Can be tank-mixed with diquat, flumioxazin, or carfentrazone to increase speed of control when targeting giant salvinia. |
| Clipper WDG/SC, FlumiGard WDG/SC, or Semera, Schooner SC (flumioxazin) @ 6.0-12.0 oz/A + 0.25% v/v aquatic approved surfactant | Common or giant salvinia, water lettuce and watermeal. | For use on water bodies with limited or no outflow. Contact herbicide, coverage important. Very fast acting. As a foliar treatment, it may be tank-mixed with glyphosate, 2,4-D, imazapyr, or triclopyr to increase weed control spectrum. If tank-mixed, reduce rate 1-6 oz/A. |
| Tradewind (bispyribac) @ 1-2 oz/A + 0.25% nonionic surfactant | Alligatorweed, duckweed, water hyacinth and water lettuce. | Can be used to control floating weeds in 2,4-D-restricted areas. Apply to actively growing weeds. |
| Stingray (carfentrazone) @ 6-13.5 oz/A + 0.25% nonionic surfactant | Common/giant salvinia, water lettuce and watermeal. | Fast acting. Contact herbicide, coverage important. May be tank-mixed with glyphosate, imazapyr, penoxsulam, or imazamox to increase weed control spectrum. If tank mixed, use 2-6 oz/A. |

| Formulated product and rate | Types of aquatic weed or site | Remarks and precautions |
|---|---|---|
| ProcellaCOR SC (florpyrauxifen-benzyl) @ 2.0-4.0 PDU + 1% v/v methylated seed oil (MSO) per 100 gallons of water; 1 PDU = 1.35 fluid oz. | Water hyacinth and mosquito fern. | Apply to the foliage of actively growing plants. Follow water use restrictions. DO not apply directly to, or otherwise permit ProcellaCOR SC to come in contact during an application, with soybeans, vegetable crops, flowers, ornamental shrubs, or trees, or other desirable broadleaf plants, as serious injury may occur. Please see the label for additional instructions related to drift management. |
| Renovate 3, Garlon 3A, Triclopyr 3, Trycera, or others (triclopyr) @ 32-64 oz/A + 0.25% surfactant | Water hyacinth. | Apply to the foliage of actively growing plants. |
| Sonar A.S./One/Q/SRP/PR/Genesis, Fluridone @ 10-20 ppb | Giant/common salvinia*, watermeal, crested floating heart and duckweed species. | Slow acting, systemic activity will require at least seven days for noticeable injury. Product half-life is 30 to 90 days; therefore, do not use treated water for irrigation of turf, forage or food crops for 30 days or until herbicide concentration is <5 ppb or FasTEST has been performed. *For difficult-to-control weeds, such as giant salvinia, a minimum 75-day contact time is recommended when applied subsurface. Do not apply this product subsurface if rapid dilution is expected. |
| PRO MSM 60, Cimarron Max Part A (metsulfuron) @ 0.5-1.0 oz/A. Section 24c/Special Local Need (SLN) label in Louisiana. | Giant salvinia ONLY. | To be used only in Louisiana by public agencies (i.e., state/federal/local governmental) or hired contractors to control giant salvinia on public waterways (state/federal/city/county/parish) that are owned/regulated/managed by said agencies. Not for private use or purchase. Do not apply subsurface and do not use water to irrigate plants. |

NOTE: A ft. (acre foot) = volume of water in an area having 1 acre of surface and a depth of 1 foot.

## Table 2. Emergent and marginal weeds (rooted underwater, tops above water or growing on wet soil).

| Formulated product and rate | Types of aquatic weed or site | Remarks and precautions |
|---|---|---|
| Galleon (penoxsulam) @ 2-5.6 oz/A + 0.25% aquatic approved nonionic surfactant | Alligatorweed, parrotfeather, other weeds. | Can be used in 2,4-D-restricted areas. |
| Clearcast or Imox (imazamox) @ 16-64 oz/A + 0.25% aquatic approved surfactant. | Alligatorweed, cattail, parrotfeather and primrose species. | Can be used in 2,4-D-restricted areas. |
| 2,4-D low volatile ester (LVE) @ 4.0 lbs/A in 100 gal water | Broadleaf species (arrowhead, lotus, smartweed, spatterdock, spikerush, primrose/Ludwigia species, white waterlily, yellow waterlily), Cuban bulrush and others. | Apply on foliage when weeds are actively growing. Spray to uniformly wet foliage. Add 10% fuel oil by volume or 1.0 qt. surfactant to spray mix. More than one application may be required for control of some species. Avoid use in waters for crop irrigation. |
| Habitat, Polaris, Arsenal, Imazapyr 2SL, or Imazapyr 4SL @ 16-64 oz/A + 0.25% aquatic approved nonionic surfactant | Many grasses, rushes, sedges, cattail, and broadleaf weeds. Especially useful for controlling trees and brush in water. | Apply when weeds and woody plants are actively growing. Follow potable and irrigation water restrictions. Must be applied by certified commercial applicator only. May be tank-mixed with glyphosate and/or Clipper. Late summer and fall applications may work better than early season applications on emergent weeds. |
| Rodeo, Roundup Custom, Refuge, AquaNeat, Glyphosate 5.4, or others @ 24-120 oz/A broadcast or 0.75-1.5% in spray to wet equipment + 0.25% aquatic approved surfactant. | Broadleaf weeds, grasses, and weedy species such as cattail, maidencane, smartweed, spatterdock, willow, Cuban bulrush and others. | Apply to actively growing weeds. See label for proper stage of growth. No restrictions on the use of the water. Do not apply within 0.5 mile upstream of potable water intakes or in tidewater areas. May be tank-mixed with Habitat/Polaris/Arsenal/etc., Clipper or Stingray. Late summer and fall applications may work better than early season applications on emergent perennial weeds such as cattail. |
| Sonar A.S./One/Q/SRP/PR/Genesis, or Fluridone subsurface (in-water) @ 10-40 ppb | Crested floating heart. | Slow acting, systemic activity will require at least seven days for noticeable injury and minimum 60 day exposure for plant control. Product half-life is 30 to 90 days; therefore, do not use treated water for irrigation of turf, forage or food crops for 30 days or until herbicide concentration is <5 ppb or FasTEST has been performed. Do not apply this product subsurface if rapid dilution is expected. |
| Renovate 3, Trycera, Triclopyr 3, Garlon 3A, or others (triclopyr) @ 32-256 qt/A + 0.25% v/v aquatic approved surfactant | Aalligatorweed, water primrose, other broadleaf weeds, and brush and trees. | Can be applied to impounded water only, not to flowing streams. Apply by air or ground. |
| ProcellaCOR SC (florpyrauxifen-benzyl) @ 4.0-5.0 PDU + 1% v/v methylated seed oil (MSO) per 100 gallons of water; 1 PDU = 1.35 fluid oz. | Crested floating heart. | Apply to the foliage of actively growing plants. Follow water use restrictions. Do not apply directly to, or otherwise permit ProcellaCOR SC to come in contact during an application, with soybeans, vegetable crops, flowers, ornamental shrubs, or trees, or other desirable broadleaf plants, as serious injury may occur. Please see the label for additional instructions related to drift management. |

## Table 3. Submersed weeds (majority of plant grows underwater, usually rooted or anchored).

| Formulated product and rate | Types of aquatic weed or site | Remarks and precautions |
|---|---|---|
| Copper sulfate @ 2.0-3.0 lbs/A foot of water | Algae (scums and mosses). | Apply at bloom. Apply crystals or powder at any stage of algae growth by any method to give rapid and uniform distribution. Repeat as necessary to maintain control. If entire waterbody is treated at one time or dissolved oxygen level is low, decaying weeds can remove enough oxygen and may result in fish suffocation. Therefore, limit treatment to no more than half the waterbody. Repeat treatments should be delayed by 10 to 14 days. Apply 3.0 lbs/A ft. in ponds with soft water. |
| Aquathol K (liquid) @ 0.5-5.0 ppm Aquathol Super K (Granular) (endothall, dipotassium salt) @ 0.5-5.0 ppm | Coontail, fanwort, hydrilla, milfoil species, pondweed species, southern naiad, water stargrass. | Apply at active growth stage. Can be injected into the waterbody or sprayed over surface. If entire waterbody is treated at one time or dissolved oxygen level is low, decaying weeds can remove enough oxygen and may result in fish suffocation. Therefore, limit treatment to no more than half the waterbody. Repeat treatments should be delayed by 10 to 14 days |
| Copper Chelates (Cutrine-Plus, Captain, Captain XTR, Argos, or others) @ 0.2-1.0 ppm (see individual labels for gallons per acre foot) | Algae (scums and mosses). | Apply at bloom. Apply as a surface spray or injection. If entire waterbody is treated at one time or dissolved oxygen level is low, decaying algae or plants can remove enough oxygen and may result in fish suffocation. Therefore, limit treatment to no more than half the waterbody. Repeat treatments should be delayed by 10 to 14 days. Toxicity to fish depends on water hardness. See label for additional details. |
| Hydrothol 191 (endothall, dimethylalkylamine salt) @ 0.6-3.6 pt/A ft of water | Filamentous algae (scums and mosses). | Apply at bloom. Apply as a surface spray. If entire waterbody is treated at one time or dissolved oxygen level is low, decaying weeds can remove enough oxygen and may result in fish suffocation. Therefore, limit treatment to half the waterbody. Repeat treatments should be delayed by 10 to 14 days. Follow label instructions concerning fish toxicity. |
| Sonar A.S./One/Q/SRP/PR/Genesis or Fluridone @ 10-20 ppb as a total water treatment | Coontail, fanwort, milfoil, hydrilla, elodea, southern naiad, pondweeds. | Due to the slow activity of this herbicide, apply throughout the entire waterbody to actively growing plants. Longer exposure periods (>60 days) increase the likelihood of achieving complete control. Product provides slow control/kill. Repeat applications may be necessary for difficult to control weeds such as hydrilla. Due to excessive rainfall, product re-application (i.e., bump treatment) may be required if herbicide concentrations fall below lethal doses (5 ppb) if control has not been achieved. Do not apply this product subsurface if rapid dilution is expected. |
| Diquat, Reward, Tribune, or others (diquat) @ 1.0-2.0 gal/surface-acre | Coontail, southern naiad and milfoil species. | Apply at active growth stage. If entire waterbody is treated at one time or dissolved oxygen level is low, decaying weeds can remove enough oxygen and may result in fish suffocation. Therefore, limit treatment to no more than half the waterbody. Repeat treatments should be delayed by 10 to 14 days. Apply as a direct-pour or subsurface injection. Short residual. Water may be used for irrigation five days after treatment. Can be tank-mixed with copper, Aquathol K, or Clipper for hydrilla control. |

| Formulated product and rate | Types of aquatic weed or site | Remarks and precautions |
|---|---|---|
| Galleon (penoxsulam) @ 25-75 ppb as a total water treatment | Hydrilla, Eurasian watermilfoil and southern naiad. | Due to the slow activity of this herbicide, apply throughout the entire waterbody to actively growing plants. Longer exposure periods (>60 days) increase the likelihood of achieving complete control. Product provides slow control/kill. Repeat applications may be necessary for difficult to control weeds such as hydrilla. Due to excessive rainfall, product re-application (i.e., bump treatment) may be required if herbicide concentrations fall below lethal doses (5 ppb) if control has not been achieved. A 60-day contact time required. Do not use in moving water or where rapid dilution is expected. |
| Tradewind (bispyribac) @ 20-45 ppb as a total water treatment | Hydrilla, and Eurasian watermilfoil. | Must maintain desired concentration for minimum of 60 days. Not for use in moving water. |
| Clipper WDG/SC, FlumiGard WDG/SC, Pond-Klear, or Semera, Schooner SC (flumioxazin) @ 100-400 ppb as a total in-water treatment | Hydrilla, fanwort, southern naiad, pondweeds, milfoil species, coontail. | For use in water bodies with limited or no outflow. Fast acting. Follow instructions on timing of application and possible oxygen depletion following application. Herbicide efficacy/activity will decrease as water pH increases to 8 and higher. Can be tank-mixed with other herbicides to increase control. If entire waterbody is treated at one time or dissolved oxygen level is low, decaying weeds can remove enough oxygen and may result in fish suffocation. Therefore, limit treatment to no more than half the waterbody. Repeat treatments should be delayed by 10 to 14 days. |

## Table 4. Use restrictions for treated water (number of days).

| Herbicide | Human Drinking | Human Swimming | Human Fish consumption | Animal Drinking | Turf Irrigation | Forage Irrigation | Food Crop Irrigation |
|---|---|---|---|---|---|---|---|
| 2,4-D Amine, DMA 4 IVM, Shredder Amine, WEEDestroy AM-40, Weedar 64 | 21[e] | 0 | 0 | 21[e] | 21[e] | 21 | 21[e,f] |
| Aquathol Granular | 7 | 1 | 0 | 7 | 0 | 7 | 7 |
| Aquathol K | 7-25 | 1 | 0 | 7-25 | 0 | 7-25 | 7-25 |
| Clearcast, Imox | 0[i] | 0 | 0 | 0 | k | k | k |
| Clipper WDG/SC, FlumiGard WDG/SC, Pond-Klear, Semera, Schooner SC | 0 | 0 | 0 | 0 | 5 | 5 | 5 |
| Chelated Copper | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Copper Sulfate | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Diquat, Reward, /Tribune, Harvestor, Littora, Weedtrine-D, others | 2 | 0 | 0 | 1 | 2 | 5 | 5 |
| Galleon | 0 | 0 | 0 | 0 | h | 0 | i |
| Habitat, Polaris, Ecomazapyr 2SL, Imazapyr 4SL | 2[n] | 0 | 0 | 0 | 120[g] | 120[g] | 120[g] |
| Hydrothol | 7-25 | 1 | 0 | 7-25 | 7-25 | 7-25 | 7-25 |
| ProcellaCOR SC | 0[i] | 0 | 0 | 0 | 0 | m | m |
| Renovate 3, Garlon 3A, Triclopyr, Trycerap,q,r | 0 | 0 | 0 | 0 | 120[s] | 120[s] | 120[s] |
| Rodeo, Glypro, AquaPro, Glyp`ro, Roundup Custom, AquaNeat, Glyphosate, others | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sonar A.S./One/Q/SRP/PR/Genesis, Fluridone | - | 0 | 0 | 0 | 7-30[d] | 7-30[d] | 7-30[d] |
| Tradewind | 0 | 0 | 0 | 0[g] | 0 | 0 | 0 |
| Stingray | k | 0 | 0 | k | k | k | k |

[a] Do not use in human, animal or irrigation water.
[b] Not recommended for use in commercial fishing areas.
[c] See label for distance allowed from potable water intakes.
[d] Restriction suggested by manufacturer.
[e] Shorter interval may be used depending on amount of 2,4-D acid present.
[f] Do not use on irrigation ditches.
[g] Or until residues = 1.0 ppb or less.
[h] Concentration < 30 ppb.
[i] Concentration = 1 ppb, except rice = 30 ppb.
[j] Concentration < 50 ppb within 0.25 miles of water intake.
[k] See label.
[m] See label for specific label irrigation restrictions.
[n] Do not apply within ½ mile of potable water intake.
[o] Do not use in water utilized for crawfish farming.
[p] Except for lactating dairy animals, there are no grazing restrictions following application of this product.
[q] During the season of application, withdraw livestock from grazing treated grass at least three days before slaughter.
[r] Potable water intake must be turned off until the triclopyr level in the intake water is determined to be 0.4 (ppm; or 400 ppb) or less by laboratory analysis.
[s] As an alternative to waiting 120 days, treated water may be used for irrigation once the triclopyr level in the intake water is determined to be non-detectable by laboratory analysis.