



**Offices of Agricultural Commissioner
Weights and Measures**

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To: Property Owners & Operators
Irrigation and Drainage Districts

From: Louie B Mendoza Jr., Agricultural Commissioner

Re: Best Management Practices for the control of Winged Water-Primrose (WWP)

Winged Water-Primrose (*Ludwigia decurrens*) is a non-native weed that was identified in Butte County rice fields in 2011. In February of 2016, the California Department of Food and Agriculture Division of Plant Health's pest ratings made the determination that WWP is an "A" rated weed pest and a "P" rated seed pest (prohibited). These ratings have the potential to impact certified rice fields and the movement of seed as well as the export of rice to other countries.

After the initial identification of Winged Water-Primrose in Butte County, it was determined by Farm Advisors and the Agricultural Commissioner that the distribution extends over several square miles. Most infestations are along borders of rice fields and irrigation and drainage canals.

WWP flowers and produces seed capsules at every leaf node starting when the plant is small (~ 1 foot tall). Seed capsules contain thousands of seeds which are viable before the light brown seed coat is formed. Early monitoring and control are essential. The seed capsules can float on the water surface and are readily dispersed along irrigation canals. The seed can germinate in shallow water or moist soil. Based on field observations WWP will germinate from mid-May through mid-September. Season long vigilance is required. Once established, WWP will survive in a flooded rice field and set seed. Also, part of the WWP root system floats in the water. Root segments will quickly produce new plants. Care must be taken when physically removing the plants to ensure that root segments are not allowed to move in the water canals. This suggests that mowing of levees as a means of control may potentially increase dispersal of this weed. Field observations also indicate that WWP is spread by tillage and harvest equipment.

Results from UC Researchers Albert Fischer and Jim Eckert preliminary research on this weed: "**Behavior of *Ludwigia decurrens* (winged primrose willow) and herbicide options for control**" are available via the UC Rice Blog (<http://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=7778>).

In an effort to manage and control WWP and stop the spread, the Agricultural Commissioner is requesting that Best Management Practices (BMP's) be followed. The BMP's were developed by stakeholders including UC Extension, Rice Experiment Station, irrigation districts and rice industry representatives. The ultimate goal for the the Winged-Water Primrose project is eradication of this invasive weed, however, in the short term our goal is to "manage and control" the weed.

Best Management Practices for the control of Winged Water-Primrose (WWP)

1. Monitoring and Surveillance of WWP:

- a. Staff from the Agricultural Commissioner's office and Rice Experiment Station will conduct routine surveys of fields and ditch banks beginning in mid-April through September. **We ask for your full cooperation with this project, including easy access to the fields in the control zone.**
- b. Any potential or suspected WWP locations should be reported to the Agricultural Commissioner at 530-538-7381 or to the Rice Experiment Station at 530-868-5481. This process will allow for verification, monitoring, and recording of WWP sites.

2. Use of Herbicides to control WWP:

Herbicides options may vary depending on the location of the weed (e.g. field edge, in the field, production system, ditch bank etc.). Follow all herbicide label requirements, the application of herbicides must comply with the label for the site to be treated, rates, and timing. The UC research report mentioned on the first page presents results on herbicide efficacies to control WWP.

- a. Treatment of WWP sites will be done in cooperation with participants including confirmation with grower, land owner or agency.

3. Water Management:

Maintain continuous flood and recommended water levels in fields (checks) that have been found with WWP. Leather's method, pin point flood, dry down weed control techniques provide suitable conditions for the growth of WWP.

4. Rogueing:

When needed, rogue WWP plants, as well as floating shoots, and place in a plastic bag at site. Promptly dispose plastic bags containing WWP at designated dumpster at BUCRA "Riceton" facility (8am-3pm) or at the landfill. Do not carry the rogued WWP around in the pickup for a few days. Circumstances where rogueing may be preferred include: infestation across a field, organic rice fields or if plants have already produced seed pods. Herbicide treatment does not appear to kill the seeds. The plant may be dead but the seeds remain viable. Care should be taken to remove all of the floating root system when rogueing to discourage vegetative propagation.

5. Burning:

The Agricultural Commissioner has contacted the Butte County Air Quality Management District (BCAQMD) to prioritize fields/checks/ditches and drains containing WWP for burning. BCAQMD burn permits are required and air quality restrictions must be followed.

6. Tillage and harvest equipment:

All equipment that has entered WWP areas or sites, should be cleaned (washed) at site prior to the movement out of the WWP area/site. It is recommended to till and/or harvest the fields where WWP has been found last.

Certified Rice Seed: Growers should only plant certified rice seed, since the pest is not permitted in seed production fields or in any class of certified rice seed. Farm saved seed originating in the control zone is not recommended. Varieties of rice that are not in the official seed certification program should not be used if the seed source is from impacted areas.

Attached is a map of confirmed WWP sites/locations and pictures of what WWP looks like at different growth stages. We will provide updated WWP information and links at our website. Should you have any questions, please contact **Robert Hill, Evan Padgett**, or myself at **530-538-7381**.