Vegetation Management

Mike Pacheco
Water Manager - IID
Objectives

- Use of Integrated Pest Management (IPM) to determine the best vegetative control methods for the District.
  - IPM: using a combination of techniques to prevent and control pests.

- Identify and preserve desirable/beneficial plant species.

- Identify and eliminate undesirable/noxious weeds.
Vegetation Control Methods

- **Mechanical Control**
  - *Physical removal of undesired weed species*
  - Mowing, pulling, grading, dredging, etc.

- **Biological Control**
  - *Triploid Grass Carp*
Vegetation Control Methods

- **Chemical Control**
  - Use of herbicides to control undesired weed species
  - Pest Control Adviser (PCA) must write a recommendation
Vegetation Control Procedures

- Chemical Application Process

  - Pest Control Advisor (PCA) prepares a recommendation of chemicals to control undesirable weed species.
  - Recommendation forwarded to weed spray contractor.
  - Contractor generates schedule and returns to PCA and Division for approval.
  - After completion of spraying PCA inspects work and may approve or ask weed spray contractor for re-spray.
GIS Weed Spray Map

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Undesirable Species- Target Pests

Salt cedar (Tamarix spp)
Undesirable Species - Target Pests

Arrowweed (*Pluchea sericea*)
Undesirable Species - Target Pests

Common Reed (*Phragmites australis*)
Undesirable Species - Target Pests

Curly Dock (*Rumex crispus*)
Undesirable Species - Target Pests

Mexican Sprangletop (Lepochloa fusca)
Beneficial Species

Salt grass (Distichlis spicata)
Beneficial Species

Salt Heliotrope (Heliotropium curassavicum)
Beneficial Species

Bermuda Grass (Cynodon dactylon)
Spray Contractor

- Current contract is with Eynon Management, Inc.
Spray Contractor

- Current contract April 2016 to September 2019

- Total contracted amount:

<table>
<thead>
<tr>
<th></th>
<th>North End</th>
<th>South End</th>
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<tbody>
<tr>
<td>Annual Amount</td>
<td>$588,663.90</td>
<td>$620,754.45</td>
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<td>Total Amount (3.5 years)</td>
<td>$2,060,323.66</td>
<td>$2,172,640.60</td>
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**Herbicides Used**

- **Glyphosate (Roundup)** - Systemic, non-selective - controls virtually all annual and perennial weeds, but is most phytotoxic to annual grasses.
  *Most used.*

- **Triclopyr (Amine)** - Systemic selective foliar, controls many annual broadleaf weeds as well as many tree and brush species. Does not harm grass species.

- **Imazapyr** - Non-selective, controls many annual and perennial weeds such as grasses, broadleaves, vines, brush and trees.

- **Imazamox** - Systemic aquatic herbicide that moves throughout the plant tissue and prevents plants from producing a necessary enzyme.
The NPDES permit program, created in 1972 by the Clean Water Act, helps address water pollution by regulating point sources that discharge pollutants (pesticides) to waters of the United States.

- Monitor applications of each pesticide the District uses.
- Submit monitoring data and vegetation control methods to the state annually.
Mechanical Cleaning

Salt Cedar and Curly Dock infestation

Mayflower Drain Before
Grasses left on banks for stabilization

Mayflower Drain After
Vegetation Management

- Questions??