Windbreak Renovation

ren·o·vation \re-nə-vā-shən\

1. To restore to an earlier condition, as by repairing or remodeling.
2. To impart new vigor to; revive.
Presently, one of the most significant natural resource issues facing rural North Dakota is the decline of established farmstead and field windbreaks.

In North Dakota there are approximately 55,000 miles of field windbreaks with 40,000 of those miles in need of renovation.

Decline of Mature Windbreaks

- disease
- insects
- age
Partnerships

• North Dakota NRCS CCPI Project 2010 - 2015
  – Cooperative Conservation Partnership Incentive
    • opportunity to inspect windbreaks
    • funds to producers to offset renovation costs
  – Funds were awarded to be available to *producers*
    for the renovation of existing windbreaks.
    • The SCD receives none of these dollars but benefits from increased tree plantings and exposure.
    • Invitations to farms opens discussion for other conservation concerns, as well.

  – North Dakota NRCS
  – North Dakota Forest Service
  – NDSU Extension Service/Research Center
Windbreak Renovation

ren·o·vation  \( \text{re-nə-vā-shən} \)

1. To restore to an earlier condition, as by repairing or remodeling.
2. To impart new vigor to; revive.
Objective

Introduce a method of windbreak renovation that does not destroy established protection. Row removal with chain saw, hydraulic saw or shear, without removing roots.

1) minimizes soil disturbance
2) expedites disposal of felled trees
3) allows for prompt replanting
Obstacles

Field windbreaks are getting pushed out reduced tillage and improved farming practices implies less need for erosion control.

Traditional methods are drastic.
Not a priority resource concern.
Invitation to farm.
Cost / cost-share.
Equipment.
Limited contractors to do tree removal.

It’s not as easy as it sounds!
... windbreaks were commonly called shelterbelts because they provided shelter from the wind. Protection for homes, livestock and soil drove the demand for shelterbelts. In this day of well-insulated homes, climate-controlled tractors and confined animal feeding operations the call for shelter isn’t as apparent as it once was.
Participation

108 Farm visits
81 Applications
62 Contracts

August 2009 – May 2012
For Renovation Consideration ONLY
Windbreak Evaluation

LANDOWNER OBJECTIVES: Long term wind and snow protection for the farmyard.

**Stand 1**
- **AGE:** 50+
- **ACRES:** 2.7 acres
- **DESCRIPTION:** North south rows, east of the farm, across road.

<table>
<thead>
<tr>
<th>Row</th>
<th>Species</th>
<th>Spacing-ft</th>
<th>*DBH-in</th>
<th>% missing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Btwn row</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Caragana</td>
<td>12</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Buckthorn</td>
<td>15</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td>3-4</td>
<td>Boxelder</td>
<td>15</td>
<td>15</td>
<td>&lt;10</td>
</tr>
<tr>
<td>5-6</td>
<td>Cottonwood</td>
<td>15</td>
<td>24</td>
<td>&lt;20</td>
</tr>
<tr>
<td>7-10</td>
<td>Elm</td>
<td>15</td>
<td>25</td>
<td>&gt;25</td>
</tr>
<tr>
<td>11</td>
<td>Pine/Boxelder/Juniper</td>
<td>15</td>
<td>5</td>
<td>20</td>
</tr>
</tbody>
</table>

**Recommendation:** Coppice Caragana, remove buckthorn & elm.

<table>
<thead>
<tr>
<th>Year</th>
<th>Task</th>
<th>Planned footage</th>
<th>Estimate Cost-share</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coppice Caragana</td>
<td>~ 900’</td>
<td>~$107.14/100’ = $964 per row</td>
</tr>
<tr>
<td></td>
<td>Remove Buckthorn &amp; Elm</td>
<td>~4500’ (5 rows)</td>
<td>~$107.14/100’ = $4821</td>
</tr>
<tr>
<td></td>
<td>Replant 3 rows, between stumps</td>
<td>~3600</td>
<td>~39.55/100’ = $1,423</td>
</tr>
<tr>
<td>Row</td>
<td>Species</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>caragana</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>caragana</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>siberian elm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>elm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>elm - dead</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Honeysuckle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Recommendation:** Plant north of existing old belt and remove old belt after new belt is established.

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<table>
<thead>
<tr>
<th>Row</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>caragana</td>
</tr>
<tr>
<td>2</td>
<td>honeysuckle/caragana</td>
</tr>
<tr>
<td>3</td>
<td>elm- dead</td>
</tr>
<tr>
<td>4</td>
<td>ash</td>
</tr>
<tr>
<td>5</td>
<td>elm</td>
</tr>
<tr>
<td>6</td>
<td>ash</td>
</tr>
<tr>
<td>7</td>
<td>elm – dead</td>
</tr>
</tbody>
</table>

**Recommendation:** Remove north ½ of existing belt (keeping 200’ north of the barn), and plant west just next to the existing old belt. Remove old belt after new belt is established.
Renovate established windbreak, without destroying the entire windbreak.
Energy Conservation

To farms, communities, fields and ANIMALS
Supplemental Planting

Method #8
Gap Planting
Natural Regeneration
Establish and regenerate forested wildlife habitat
Row Removal & Replacement
Row Removal & Replacement
What works for us ... might work for you

Actions speak loudest of all --

-- word of mouth will make or break your program
Versatility of Planter
Sod or tilled site
or cropland without tillage
Between-row maintenance
Diligent Crew
Wells County Soil Conservation District
Anne Ehni

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