Eastern Red Cedar Summaries

Lower Loup – Rich Woollen

1. What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Soil Erosion (wind), Excess Water (drifted snow), potential water quality, pesticide transport: wildlife habitat; Livestock Production (Shelter)
    - Livestock production, water quality (buffers), Cropland protection
    - In our district the resource concern being addressed by the ERC is the conservation of energy, livestock and wildlife wind protection
    - All of them
2. Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - To some degree, it may require additional rows using more space to achieve the same level of protection
    - Depending on location, desired cooperator objectives, and design constraints, other species may or may not accomplish the desired goal as adequately as the use of at least some ERC
    - We have a wide variety of soils in our district. Some will not allow much of anything else to grow other than ERC. Cooperators love the idea of Pine trees or RMJ, but if it will not survive in certain conditions, then it is not an option. If the other trees had the survivability as the ERC, then yes, they would be just as fitting to address our resource concern.
    - Possibly…but it will take the next generation of landowners to implement this species shift…25-50 years.
3. If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - SW white pine (?), limber pine (?)
    - Rocky Mountain juniper may be a good alternative in the west where cercospora blight is not a threat to tree health. Ponderosa pine or jack pine, perhaps in combination with shrubs may provide alternatives to ERC. However, I don't know that in some locations there is a species that can provide for many desired outcomes as well as ERC. ERC is a well-adapted native tree species with low branching, good drought tolerance, and minimal insect and disease concerns.
    - Ponderosa pine and jack pine are the only two alternative species. R.M. Juniper is not a suitable replacement.
    - All of them.
4. How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - ERC is a greater concern for management increasing from west to east. Unmanaged landscapes are significantly more at risk than managed areas regardless of land use.

- Yes. Perceived negative impacts may vary. The need for controlling the spread of ERC may be more necessary in rangeland and riparian corridors versus cropland. The need for management is a key consideration when considering ERC presence in the landscape.
- The issues from the western part of the state differ from the eastern. Western Nebraska can plant R.M. Juniper without them developing the Cercospora Blight that we tend to get in the eastern part of the state. In turn, the eastern part of the state has better luck with spruce and pine surviving.
- They don't for NRD's…" west of the 100th meridian"!

5. What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - What is the carbon footprint of a steel fabricated windbreak vs a planted windbreak? Supporting the planting of windbreaks is the answer, not placing steel panels everywhere. Paying a higher cost share rate for potted stock and/or development of other species would be preferable.
    - Windbreak design considerations that m ay be somewhat nontraditional. For example, planting a conifer and shade tolerant shrub in the same row or two rows, one of a conifer and another of a shrub at a close between row spacing to improve density long term. The use of container seedlings to improve overall conifer survival and animal protection are beneficial considerations.
    - All the above
    - None…" west of the 100th meridian". Exception would be fabricated windbreaks… and the only building product that qualifies would be WOOD. Any other building product (steel, plastic, concrete etc.) does not qualify since the carbon footprint (think "Environmental Quality Incentive Program – EQIP) to make these 3 products is off the charts compared to WOOD. Natural resources (water, fossil fuels, CO2 emissions) required to make these 3 products puts them in the minus category…well below "carbon neutral" WOOD. Based simply on their carbon footprint…these 3 will never be able to compete with WOOD.

Lewis & Clark – Steve Rasmussen

1) What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)

- Many of the weather-related resource concerns (especially winter weather and wind) are addressed with the use of ERC. Energy savings around the farmstead; Wind caused soil erosion; Livestock protection in the winter; Water caused erosion control and riparian forest buffers; Water collection and distribution (field windbreaks drifting snow onto fields); Snow control and safety (living snow fences along travel routes); Wildlife habitat (winter protection and escape locations)

2) Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)

- For the main benefits that the ERC provides (winter wind and snow control), a conifer is best. ERC is the only native conifer to the LCNRD area and it provides density to the ground as the tree grows older. Ponderosa pine (native to northcentral and northwest NE can provide some of the same protection at a young age, but then does retain the branch and needle density lower as the tree matures. RM juniper is used in western NE with less humidity but in eastern Nebraska, it is susceptible to fungus diseases. Spruces are hard to establish, grow slower and are not as hardy for conservation tree uses unless given special care. On some soils in the LCNRD, ERC is the only conifer recommended by NRCS specs and expected to grow and survive to provide the benefits of the planting objectives. Without ERC available for those sites, the landowner would not have as adequate wind and snow protection. Until a suitable replacement is found and proven, ERC should remain to be used.

3) If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)

- For winter winds and snow protection, an evergreen (conifer) does the best job. On some soil types, ERC is the only evergreen NRCS specs allow for planting. On those soils, there is no alternative. These are poor soils and droughty sites that ERC is the best adapted. Also, on sites with limited width for the planting, ERC gives the most adequate wind and snow protection when there is only space for 1 or 2 rows. Many cooperators do not want to plant a windbreak more than 4 rows wide. Without a conifer component, windbreaks with shrubs and deciduous trees need to be 10 – 12 rows wide to give the same density / porosity as a windbreak with evergreens and shrubs.

4) How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)

- The ERC concern is more noticed on rangeland dominated areas where ERC is an opportunist species that establishes and encroaches under limited management efforts and lack of attention. It can be an issue in woodlands and riparian areas if left unattended. It is not an issue in crop ground dominated areas (example would be livestock windbreaks with cedar in

corners of pivots or single row field windbreaks for snow distribution, soil erosion control and increased crop yields). Areas with a major percentage of acres are in row crop / cultivated do not have a problem with ERC spread. Large areas of areas of the state with corners of center pivots planted with ERC for winter livestock protection or wildlife habitat do not have ERC spreading issues. Each LWG should be allowed to make a local decision on whether to allow cost share and use of ERC.

5) What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)

- Construction of fabricated windbreaks do not provide all the multiple benefits of a planted windbreak. Steel windbreaks are an energy intensive cost. Soil protection, carbon sequestration, oxygen production, reducing air borne contaminates, wildlife habitat (all seasons), landscape aesthetics, improved mental health associated with trees/green plants, potential wood products (edibles, biomass, wood products, etc.) and other nontangible benefits that come from tree and shrub plantings. Potted plants have a potential to help with survival and initial establishment. Identifying different evergreen species that can be used in place of ERC (and then allowing the non-native evergreens to be promoted and cost shared). Substituting other evergreens whenever possible (soils and sites allow) is desired. NRCS has done a good job is reducing the number and amount of ERC in conservation plantings over the past 10 – 20 years. One – two rows of ERC in conservation tree plantings is not the issue of the ERC expansion in the state. Lack of attention and management over the past 50 years has allowed ERC to expand.
- The planting of ERC should not be treated as a "one size fits all" issue for the state. I believe the issue of planting and cost sharing ERC should be left to a local decision on an NRD or LWG level that knows the local resources best. Nebraska has very diverse in soils and annual moisture. This plays into the potential for ERC establishment and spread. In both the west and east, there are sites that ERC is possibly the only evergreen that can be expected to grow and provide the benefits of the tree planting for the cooperator. ERC must be kept as an option for those sites and other locations where spread is not a concern.
- I strongly support and encourage keeping ERC as a component for cost share in conservation tree plantings. Allowing natural resource professionals that are knowledgeable about local resource concerns to make decisions on the use of ERC in collaboration with the landowner and their objectives is the best way to utilize this native evergreen in our landscapes. Limiting the use of ERC where possible and reducing the number of ERC plants in a windbreak are ways to reduce the potential for inadvertent spread. Alternatives are available for ERC depending on the part of the state and soils. Spruces and some pines are alternatives in the east and RMJ and Ponderosa pine are alternatives in the west.
- We have greatly reduced the number and amount of ERC seedlings being planted annually from years past. With this effort and increased awareness on management needs, we can still have ERC in conservation tree plantings and not expect those trees to be a major source of spread.

Middle Niobrara – Rich Woollen

1. What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Soil Erosion (wind), Excess Water (drifted snow), potential water quality, pesticide transport: wildlife habitat; Livestock Production (Shelter)
    - Livestock production, water quality (buffers), Cropland protection
    - In our district the resource concern being addressed by the ERC is the conservation of energy, livestock and wildlife wind protection
    - All of them
2. Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - To some degree, it may require additional rows using more space to achieve the same level of protection
    - Depending on location, desired cooperator objectives, and design constraints, other species may or may not accomplish the desired goal as adequately as the use of at least some ERC
    - We have a wide variety of soils in our district. Some will not allow much of anything else to grow other than ERC. Cooperators love the idea of Pine trees or RMJ, but if it will not survive in certain conditions, then it is not an option. If the other trees had the survivability as the ERC, then yes, they would be just as fitting to address our resource concern.
    - Possibly…but it will take the next generation of landowners to implement this species shift…25-50 years.
3. If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - SW white pine (?), limber pine (?)
    - Rocky Mountain juniper may be a good alternative in the west where cercospora blight is not a threat to tree health. Ponderosa pine or jack pine, perhaps in combination with shrubs may provide alternatives to ERC. However, I don't know that in some locations there is a species that can provide for many desired outcomes as well as ERC. ERC is a well-adapted native tree species with low branching, good drought tolerance, and minimal insect and disease concerns.
    - Ponderosa pine and jack pine are the only two alternative species. R.M. Juniper is not a suitable replacement.
    - All of them.
4. How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - ERC is a greater concern for management increasing from west to east. Unmanaged landscapes are significantly more at risk than managed areas regardless of land use.
    - Yes. Perceived negative impacts may vary. The need for controlling the spread of ERC may be more necessary in rangeland and riparian corridors versus cropland. The need

for management is a key consideration when considering ERC presence in the landscape.

- The issues from the western part of the state differ from the eastern. Western Nebraska can plant R.M. Juniper without them developing the Cercospora Blight that we tend to get in the eastern part of the state. In turn, the eastern part of the state has better luck with spruce and pine surviving.
- They don't for NRD's…" west of the 100th meridian"!

5. What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - What is the carbon footprint of a steel fabricated windbreak vs a planted windbreak? Supporting the planting of windbreaks is the answer, not placing steel panels everywhere. Paying a higher cost share rate for potted stock and/or development of other species would be preferable.
    - Windbreak design considerations that m ay be somewhat nontraditional. For example, planting a conifer and shade tolerant shrub in the same row or two rows, one of a conifer and another of a shrub at a close between row spacing to improve density long term. The use of container seedlings to improve overall conifer survival and animal protection are beneficial considerations.
    - All the above
    - None…" west of the 100th meridian". Exception would be fabricated windbreaks… and the only building product that qualifies would be WOOD. Any other building product (steel, plastic, concrete etc.) does not qualify since the carbon footprint (think "Environmental Quality Incentive Program – EQIP) to make these 3 products is off the charts compared to WOOD. Natural resources (water, fossil fuels, CO2 emissions) required to make these 3 products puts them in the minus category…well below "carbon neutral" WOOD. Based simply on their carbon footprint…these 3 will never be able to compete with WOOD.

Upper Elkhorn

1. What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Soil Erosion (wind), Excess Water (drifted snow), potential water quality, pesticide transport: wildlife habitat; Livestock Production (Shelter)
    - Livestock production, water quality (buffers), Cropland protection
    - In our district the resource concern being addressed by the ERC is the conservation of energy, livestock and wildlife wind protection
2. Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - To some degree, it may require additional rows using more space to achieve the same level of protection
    - Depending on location, desired cooperator objectives, and design constraints, other species may or may not accomplish the desired goal as adequately as the use of at least some ERC
    - We have a wide variety of soils in our district. Some will not allow much of anything else to grow other than ERC. Cooperators love the idea of Pine trees or RMJ, but if it will not survive in certain conditions, then it is not an option. If the other trees had the survivability as the ERC, then yes, they would be just as fitting to address our resource concern.
3. If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - SW white pine (?), limber pine (?)
    - Rocky Mountain juniper may be a good alternative in the west where cercospora blight is not a threat to tree health. Ponderosa pine or jack pine, perhaps in combination with shrubs may provide alternatives to ERC. However, I don't know that in some locations there is a species that can provide for many desired outcomes as well as ERC. ERC is a well-adapted native tree species with low branching, good drought tolerance, and minimal insect and disease concerns.
    - Ponderosa pine and jack pine are the only two alternative species. R.M. Juniper is not a suitable replacement.
4. How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - ERC is a greater concern for management increasing from west to east. Unmanaged landscapes are significantly more at risk than managed areas regardless of land use.
    - Yes. Perceived negative impacts may vary. The need for controlling the spread of ERC may be more necessary in rangeland and riparian corridors versus cropland. The need for management is a key consideration when considering ERC presence in the landscape.
    - The issues from the western part of the state differ from the eastern. Western Nebraska can plant R.M. Juniper without them developing the Cercospora Blight that we tend to

get in the eastern part of the state. In turn, the eastern part of the state has better luck with spruce and pine surviving.

5. What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - What is the carbon footprint of a steel fabricated windbreak vs a planted windbreak? Supporting the planting of windbreaks is the answer, not placing steel panels everywhere. Paying a higher cost share rate for potted stock and/or development of other species would be preferable.
    - Windbreak design considerations that m ay be somewhat nontraditional. For example, planting a conifer and shade tolerant shrub in the same row or two rows, one of a conifer and another of a shrub at a close between row spacing to improve density long term. The use of container seedlings to improve overall conifer survival and animal protection are beneficial considerations.
    - All the above

Lower Republican

1. Craig asked if we should be using federal dollars to cost share on ERC in windbreaks.
    - There aren't many great substitutes. Quinn had been recommending his producers use Junipers.
    - Dan mentioned Junipers are not recommended in Franklin county.
    - Todd mentioned there are already 2 NRD's that no longer provide cost-share on the cedars and talked about site specific uses of the ERC in windbreaks (i.e. ground surrounded by cropland vs. rangeland).
    - Danny mentioned motivation for using the cedars included the space savings they provide as the standard says to use either 2 rows of ERC or 5 (?) rows of alternative trees.
    - Consensus was that it was ok if NRCS did not provide cost assistance on the ERC through EQIP and CSP. It was recommended setting site specific parameters for using ERC if cost assistance was provided. Todd did note that the NRD would push other species of trees for windbreaks but would still offer cost share for ERC per Board directions.

Upper Republican – Rachel Allison

1. What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Primarily for windbreaks, weather related resource concerns, especially during the winter months. Livestock protection, especially for calving; energy savings around the farmstead; snow control and safety along county/travel roads (living snow fences); wildlife habitat (winter protection and cover); as well as wind caused soil erosion; water caused erosion (riparian forest buffers); and water collection and distribution (field windbreaks)
2. Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - What ERC provides as a conifer is primarily winter wind and snow control because of its habit which provides density to the ground, even as the tree grows older, its survivability, and its adaptability to most sites. Other conifers have limitations; either they don't maintain the low cover/density (pine) or they have fungal disease with increasing humidity (RMJ) or can't handle the dry conditions (spruce). To meet the resource concerns noted in item 1) without ERC, conifers, broad leaf trees and shrubs would not meet the resource concern unless several rows were planted.
3. If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - In most western sites, RMJ can be used which has a similar habit as ERC, but it has some drawbacks. With increasing humidity and its preference for drier conditions, the east-west line where fungal concerns exist is gradually moving west; often this begins to appear in trees that are about 15-20 feet tall, just when the tree is providing much needed protection. While ponderosa pine would do very well on most sites, its drawbacks are losing lower branches as it matures, and poorer initial survival. Jack pine drawbacks are the same, but in addition it will not handle the drier sites. Spruce are slower growing and not heat or drought tolerant, unless given special care. I have tried or seen a few special cases where spruce was used, and they have not survived.
4. How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - There really aren't different resource concerns, from above, windbreaks for livestock as an example could be on crop or range, near a wooded area, etc. and it is important to have ERC as an option for the sites. However, ERC is found and noticed more on rangeland dominated areas as well as in woodlands and riparian areas as it is an opportunist species that will establish in areas with limited management and lack of attention. With a lack of management, tree decline in these areas from environmental conditions or pest issues, unwanted species of all kinds (forbs, grasses, shrubs and trees) will move in and take advantage of open space.
5. What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)

- Fabricated windbreaks of course could be used, as people use bales and fencing already to provide protection when space, time, inclination or other issues keep them from putting in trees. Trees however, different than a fabricated windbreak, will provide many benefits while addressing the resource concerns. Cost-share for potted pines or other species and animal protection devices certainly would be a good option to help in the initial survival and establishment of some trees.
- One item that should be considered is that every site will be different, and each site will take a different complement of species to provide the best fit for the resource concern. Rather than going with only one or two species as has happened in the past, the goal should always be to diversify so that reliance is not on one tree. This prevents not only overuse of a species but minimizes the impact when something goes wrong with a species with a pest or environmental condition. Allowing natural resource professionals that are knowledgeable about the local resource to make decisions with the use of ERC on the site with the landowner is the best way to utilize this native evergreen. Certainly, the goal is to limit the use of ERC where possible. Several partners and professionals are already making a transition toward a diversity of trees and shrubs whenever possible.

Upper Big Blue

1. What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Erosion, Livestock Protection, Energy, Odor Control, Air Quality, Irrigation Savings
2. Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - Pines and Juniper, but survival is a concern.
3. If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - Pines and Juniper, but survival is a concern.
4. How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - NO
5. What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - Fabricated windbreaks, increase payment rates, increase contract length (so mod can be made if needed), and more development of seedless cedars (non-berry)

Central Platte

1. What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Soil and animals – The windbreaks are for wind erosion, livestock wind break, Home/Farmstead wind break.
2. Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - Yes. Will continue to offer other options, but if producer is requesting cedars in the windbreak, we will include in the design.
3. If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - Pine and Juniper, (juniper not recommended for most of the NRD as they do not do well in a humid environment).
4. How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - Yes, resource concerns vary across our NRD, less issues with over population in cropland area vs. rangeland.
5. What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - Offer other tree option, offer the construction of fabricated windbreaks.

Lower Big Blue

1. What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Livestock and farmstead windbreaks
2. Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - Black hills spruce, Norway spruce, P. Pine and possibly white pine. Also noted the J. Pine is really loved by deer (not best choice).
3. If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - Black hills spruce, Norway spruce, P. Pine and possibly white pine. Also noted the J. Pine is really loved by deer (not best choice).
4. How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - No variation across the district
5. What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - Examples were the good ideas and did not have any additions

Lower Platte North

1. Discussion involved new scenario for a practice used with windbreaks, wildlife planting, etc. in eastern Nebraska, specifically the use of ERC trees.
    - LWG supports the use of alternative tree species, excluding ERC. Alternative trees suggested including spruce trees, jack pine, fir trees, etc.

Lower Niobrara – Steve Rasmussen

1) What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)

- Many of the weather-related resource concerns (especially winter weather and wind) are addressed with the use of ERC. Energy savings around the farmstead; Wind caused soil erosion; Livestock protection in the winter; Water caused erosion control and riparian forest buffers; Water collection and distribution (field windbreaks drifting snow onto fields); Snow control and safety (living snow fences along travel routes); Wildlife habitat (winter protection and escape locations)

2) Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)

- For the main benefits that the ERC provides (winter wind and snow control), a conifer is best. ERC is the only native conifer to the LCNRD area and it provides density to the ground as the tree grows older. Ponderosa pine (native to northcentral and northwest NE can provide some of the same protection at a young age, but then does retain the branch and needle density lower as the tree matures. RM juniper is used in western NE with less humidity but in eastern Nebraska, it is susceptible to fungus diseases. Spruces are hard to establish, grow slower and are not as hardy for conservation tree uses unless given special care. On some soils in the LCNRD, ERC is the only conifer recommended by NRCS specs and expected to grow and survive to provide the benefits of the planting objectives. Without ERC available for those sites, the landowner would not have as adequate wind and snow protection.

3) If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)

- For winter winds and snow protection, an evergreen (conifer) does the best job. On some soil types, ERC is the only evergreen NRCS specs allow for planting. On those soils, there is no alternative. These are poor soils and droughty sites that ERC is the best adapted. Also, on sites with limited width for the planting, ERC gives the most adequate wind and snow protection when there is only space for 1 or 2 rows. Many cooperators do not want to plant a windbreak more than 4 rows wide. Without a conifer component, windbreaks with shrubs and deciduous trees need to be 10 – 12 rows wide to give the same density / porosity as a windbreak with evergreens and shrubs.

4) How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)

- The ERC concern is more noticed on rangeland dominated areas where ERC is an opportunist species that establishes and encroaches under limited management efforts and lack of attention. It can be an issue in woodlands and riparian areas if left unattended. It is not an issue in crop ground dominated areas (example would be livestock windbreaks with cedar in corners of pivots or single row field windbreaks for snow distribution, soil erosion control and

increased crop yields). Areas with a major percentage of acres are in row crop / cultivated do not have a problem with ERC spread. Large areas of areas of the state with corners of center pivots planted with ERC for winter livestock protection or wildlife habitat do not have ERC spreading issues.

5) What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)

- Construction of fabricated windbreaks do not provide all the multiple benefits of a planted windbreak. Steel windbreaks are an energy intensive cost. Soil protection, carbon sequestration, oxygen production, reducing air borne contaminates, wildlife habitat (all seasons), landscape aesthetics, improved mental health associated with trees/green plants, potential wood products (edibles, biomass, wood products, etc.) and other nontangible benefits that come from tree and shrub plantings. Potted plants have a potential to help with survival and initial establishment. Identifying different evergreen species that can be used in place of ERC (and then allowing the non-native evergreens to be promoted and cost shared). Substituting other evergreens whenever possible (soils and sites allow) is desired. NRCS has done a good job is reducing the number and amount of ERC in conservation plantings over the past 10 – 20 years. One – two rows of ERC in conservation tree plantings is not the issue of the ERC expansion in the state. Lack of attention and management over the past 50 years has allowed ERC to expand.
- The planting of ERC should not be treated as a "one size fits all" issue for the state. I believe the issue of planting and cost sharing ERC should be left to a local decision on an NRD or LWG level that knows the local resources best. Nebraska has very diverse in soils and annual moisture. This plays into the potential for ERC establishment and spread. In both the west and east, there are sites that ERC is possibly the only evergreen that can be expected to grow and provide the benefits of the tree planting for the cooperator. ERC must be kept as an option for those sites and other locations where spread is not a concern.
- I strongly support and encourage keeping ERC as a component for cost share in conservation tree plantings. Allowing natural resource professionals that are knowledgeable about local resource concerns to make decisions on the use of ERC in collaboration with the landowner and their objectives is the best way to utilize this native evergreen in our landscapes. Limiting the use of ERC where possible and reducing the number of ERC plants in a windbreak are ways to reduce the potential for inadvertent spread. Alternatives are available for ERC depending on the part of the state and soils. Spruces and some pines are alternatives in the east and RMJ and Ponderosa pine are alternatives in the west.
- We have greatly reduced the number and amount of ERC seedlings being planted annually from years past. With this effort and increased awareness on management needs, we can still have ERC in conservation tree plantings and not expect those trees to be a major source of spread.

Upper Niobrara White – *Shelley Steffl (NE Game & Parks)*

1) What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)

- With respect to ERC on rangeland, primarily Livestock protection and wildlife protection as an indirect benefit. Many windbreaks have a shrub component within. Two row high density belts on cropland are for wind erosion primarily and the recommended species are ERC or certain shrubs planted close together. (All LWG members agreed with this).
- *Livestock protection, erosion, home windbreaks*

2) Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)

- No not entirely or currently there are few other options available. Limited rainfall makes cedar important in Western Nebraska. (Most LWG members agreed except Steffl with game & Parks). In addition, substituting shrubs cannot adequately become established in time due to deer and rabbit pressure to provide the necessary protection without an increase in labor and cost to replant. (All LWG members agreed).
- Filter strips on cropland have been utilized in the past and should be recommended (Steffl-Game & Parks)
- Table decision to eliminate ERC from species list for 5 years to allow time to research needed to identify solutions (Nickerson – NE Forester).
- Encourage Manhattan Research Station to work on other species. Work with Nebraska State Forestry department as well to address the need for other options.
- *Yes. Species such as rocky mountain juniper, shrubs (plum, buffaloberry, chokecherry) deciduous, and ponderosa pine could be used to address these issues. Consideration of other species to use should also include grasses and forbs as well to provide structure to capture snowfall and other objectives currently being addressed with cedar.*

3) If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)

- None yet; ERC is an asset for cattle ranches in Western NE (Sandberg); the dilemma is somewhat described in #2; Look at Wyoming's success with their windbreaks using container trees – species are Austrian pine, Ponderosa Pine & Juniper with shrubs (Khal, NRCS and Nickerson – NE Forest Service).
- *Rocky mountain Juniper and Ponderosa Pine would be recommended. Look to locally native, not just Nebraska native, for appropriate species. Consideration of other species should also consider their history of aggressiveness or how they develop over time.*

4) How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)

- ERC is not native to the area and should not be planted – major concern on rangeland and riparian areas. In addition, USDA should be concerned with amount of funds to remove cedar vs funds to plant cedars – essentially cross – purposes.
- UNW district has had less than five EQIP contracts over the past 5 to 10 years where brush management was scheduled, and funds were in cooperation with other partners, so the brush management portion could have been partner funds and not USDA in addition Russian Olive was also being removed. I would conclude little USDA EQIP funds in this district went towards cedar removal (Foulk).
- Resource concerns vary form one portion to another – planting cedar on cropland addresses soil erosion- a natural resource concern whereas not so much on rangeland and woodland. Planting cedar in windbreaks is addressing livestock protection resource and not a natural resource concern (Jim O'Rourke, landowner).
- Research has shown a species shift, the climate with the increase in CO2 uptake is creating an environment where the juniper species will continue to expand (Nickerson, NE Forestry)
- The statement "cedar infested land is due to land not being managed properly to address the problem"
- Federal dollars should not be available for landowners to implement brush management to remove cedars due to the land not being managed properly – even when land sales to a new owner since they knew what they were purchasing (Kahl).
- Nickerson indicated he will encourage the Nebraska State Forester (NSF) or based upon recent consultation with NSF, will request the topic/issue of eliminating ERC from available tree species plant/ purchase to be tabled for 5 years. We need to take a step back before we decide and allow research, development of other options be available to address the resource concerns the eastern red cedar has provided to Nebraska landowners.
- Just in 2019, the fabricated windbreak became an eligible practice for financial assistance and the practice needs time to see how applicable it is to addressing livestock production resource concern, the main resource concern ERC provides on grassland today.
- *Listed below by type of area*
    a. *Open rangeland – minimal, extremely confined, perhaps some concentrated areas for weather protection*
    b. *Riparian corridors, canyons, woodlands – have higher potential for invasive issues. Planting within them should be limited. Also, the provided models for areas that could be planted or not planted to cedar did not (I don't think anyhow) consider slope or aspect which can play a large role in where cedars are able to spread. (Erosion in rangelands is better addressed through planting locally native grass species)*
    c. *Cropland – woody plantings should try to use alternative species such as Rocky Mountain Juniper. Though tilling helps keep down growth, movement is still possible to ditches and adjacent grasslands.*

5) What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)

- Construction of fabricated windbreaks do not provide all the multiple benefits of a planted windbreak. Steel windbreaks are an energy intensive cost. Soil protection, carbon

sequestration, oxygen production, reducing air borne contaminates, wildlife habitat (all seasons), landscape aesthetics, improved mental health associated with trees/green plants, potential wood products (edibles, biomass, wood products, etc.) and other nontangible benefits that come from tree and shrub plantings. Potted plants have a potential to help with survival and initial establishment. Identifying different evergreen species that can be used in place of ERC (and then allowing the non-native evergreens to be promoted and cost shared). Substituting other evergreens whenever possible (soils and sites allow) is desired. NRCS has done a good job is reducing the number and amount of ERC in conservation plantings over the past 10 – 20 years. One – two rows of ERC in conservation tree plantings is not the issue of the ERC expansion in the state. Lack of attention and management over the past 50 years has allowed ERC to expand.

- The planting of ERC should not be treated as a "one size fits all" issue for the state. I believe the issue of planting and cost sharing ERC should be left to a local decision on an NRD or LWG level that knows the local resources best. Nebraska has very diverse in soils and annual moisture. This plays into the potential for ERC establishment and spread. In both the west and east, there are sites that ERC is possibly the only evergreen that can be expected to grow and provide the benefits of the tree planting for the cooperator. ERC must be kept as an option for those sites and other locations where spread is not a concern.
- I strongly support and encourage keeping ERC as a component for cost share in conservation tree plantings. Allowing natural resource professionals that are knowledgeable about local resource concerns to make decisions on the use of ERC in collaboration with the landowner and their objectives is the best way to utilize this native evergreen in our landscapes. Limiting the use of ERC where possible and reducing the number of ERC plants in a windbreak are ways to reduce the potential for inadvertent spread. Alternatives are available for ERC depending on the part of the state and soils. Spruces and some pines are alternatives in the east and RMJ and Ponderosa pine are alternatives in the west.
- We have greatly reduced the number and amount of ERC seedlings being planted annually from years past. With this effort and increased awareness on management needs, we can still have ERC in conservation tree plantings and not expect those trees to be a major source of spread.
- *Another program adaptation*
    a. *Fabricated windbreaks and other structures with limits based on lek(?) locations and other sensitive areas.*
    b. *Remove USDA funding for ERC, maintain funding for other species*
        i. *Discuss with landowners what their goals are and consider other species mixtures or layouts that will meet them without use of cedar*
        ii. *Within ranking processes, continue to allow for and encourage early management of cedar rather than requiring people to wait until trees are numerous and large and cost/acre is much higher. Encourage management through prescribed fire, hand clipping, or other techniques.*
        iii. *Include cedar management as something to get credit for in CSP, or as a basic requirement as part of your ranch management to qualify for CSP.*
- *Letter to Craig Derickson from Game and Parks attached separately*

Middle Republican – Rachel Allison (NFS district forester) & LWG

1. What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)

- Livestock Production, snow management, Farmstead Protection, Soil Erosion (wind), Water Quality (buffer), much discussion on whether wildlife benefits are addressed by ERC.
- Primarily for windbreaks, weather related resource concerns, especially during the winter months. Livestock and calving protection; energy savings around the farmstead; snow control and safety along country/travel roads (living snow fence); wildlife habitat (winter protection and cover); as well as wind caused soil erosion; water caused erosion (riparian forest buffers); and water collection and distribution (field windbreaks)

2. Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - What ERC provides as a conifer is primarily winter wind and snow control because of its habitat which provides density to the ground, even as the tree grows older, and its survivability, and adaptability to most sites. Other conifers have limitations; either they don't maintain the low cover/density (pine), might get a fungal disease with increasing humidity (RMJ), or can't handle the dry conditions (spruce). To meet the resource concerns noted in item 1 without ERC, conifers, broadleaf trees and shrubs would not meet some of the resource concerns unless adaptations are made to plans and additional rows are planted.
    - Juniper but with limits because of disease issues just to the east

3. If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - Juniper but with limits. Pines naturally lose the lower branches as they mature and locally, there are limits on the usage of spruce due to soils.
    - In most western sites, RMJ can be used which has a similar habitat as ERC, but it has some drawbacks. With increasing humidity and its preference for drier conditions, the east-west line where fungal concerns exist is gradually moving west; often this begins to appear in trees that are 15-20 feet tall, just when the tree is providing much needed protection. While ponderosa pine would do very well on most sites, its drawbacks are losing lower branches as it matures, and poorer initial survival. Jack pine drawbacks are the same, but in addition it will not handle the drier sites. Spruce are slower growing and not heat or drought tolerant, unless given special care. I have tried or seen a few special cases where spruce was used, and they have not survived.
4. How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - There really aren't different resource concerns or needs noted in item 1, windbreaks for livestock as an example could be on crop or range, near a wooded area, etc. and it is important to have ERC as an option for the sites. However, ERC will spread and noticed

more on rangeland dominated areas as well as in woodlands and riparian areas as it is an adaptable species that will establish in areas with limited management or attention. With minimal or lack of management and tree decline from environmental conditions or pest issues, unwanted species of all kinds (forbs, shrubs and trees) will move in and take advantage of open space.

- In this district the resource concerns and treatment are similar

5. What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - No consensus on whether potted pine species will out perform bare root species and pines still lose their lower branches when mature
    - Fabricated windbreaks could be utilized for animal protection. Most windbreaks planted in this district are for farmstead protection (which includes livestock protection near farmsteads) and there would be limited desirability from customers.
    - Fabricated windbreaks of course could be used, as people use bales and fencing already to provide protection when space, time, inclination or other issues keep them from putting in trees. Trees however, different than a fabricated windbreak, will provide many benefits while addressing the resource concerns. Cost-share for potted pines or other species and animal protection devices certainly would be a good option to help in the initial survival and establishment of some trees.

One item that should be considered is that every site will be different, and each site will take a different complement of species to provide the best fit for the resource concern. Rather than going with only one or two species as has happened in the past, the goal should always be to diversity so that reliance is not on one tree. This prevents not only overuse of a species but minimizes the impact when something goes wrong with a species from a pest or environmental condition. Allowing natural resource professionals that are knowledgeable about tree species, the local site and the resource concern to make decisions with the landowner whether to use ERC along with or other species on the site is the best way to utilize this native evergreen. Certainly, the goal is to limit the use of ERC where possible and several partners and professionals are making a transition towards diversity of trees and shrubs.

Nemaha

1. What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Maybe some farmstead windbreaks. Not widely used in NRCS planning or by Nemaha NRD tree planting program.
2. Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - Yes, there are alternatives
3. If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - White and ponderosa pine, black hills, blue and Norway spruce are options, as are some deciduous shrubs in some applications. They don't perform quite as well as ERC but are viable.
4. How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - No variation in the Nemaha NRD
5. What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - Not really an issue, program assistance with tree planting practices are uncommon for both NRCS and NRD cost share programs.

Lower Elkhorn – Steve Rasmussen

1) What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)

- Many of the weather-related resource concerns (especially winter weather and wind) are addressed with the use of ERC. Energy savings around the farmstead; Wind caused soil erosion; Livestock protection in the winter; Water caused erosion control and riparian forest buffers; Water collection and distribution (field windbreaks drifting snow onto fields); Snow control and safety (living snow fences along travel routes); Wildlife habitat (winter protection and escape locations)

2) Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)

- For the main benefits that the ERC provides (winter wind and snow control), a conifer is best. ERC is the only native conifer to the LCNRD area and it provides density to the ground as the tree grows older. Ponderosa pine (native to northcentral and northwest NE can provide some of the same protection at a young age, but then does retain the branch and needle density lower as the tree matures. RM juniper is used in western NE with less humidity but in eastern Nebraska, it is susceptible to fungus diseases. Spruces are hard to establish, grow slower and are not as hardy for conservation tree uses unless given special care. On some soils in the LCNRD, ERC is the only conifer recommended by NRCS specs and expected to grow and survive to provide the benefits of the planting objectives. Without ERC available for those sites, the landowner would not have as adequate wind and snow protection.

3) If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)

- For winter winds and snow protection, an evergreen (conifer) does the best job. On some soil types, ERC is the only evergreen NRCS specs allow for planting. On those soils, there is no alternative. These are poor soils and droughty sites that ERC is the best adapted. Also, on sites with limited width for the planting, ERC gives the most adequate wind and snow protection when there is only space for 1 or 2 rows. Many cooperators do not want to plant a windbreak more than 4 rows wide. Without a conifer component, windbreaks with shrubs and deciduous trees need to be 10 – 12 rows wide to give the same density / porosity as a windbreak with evergreens and shrubs.

4) How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)

- The ERC concern is more noticed on rangeland dominated areas where ERC is an opportunist species that establishes and encroaches under limited management efforts and lack of attention. It can be an issue in woodlands and riparian areas if left unattended. It is not an issue in crop ground dominated areas (example would be livestock windbreaks with cedar in corners of pivots or single row field windbreaks for snow distribution, soil erosion control and

increased crop yields). Areas with a major percentage of acres are in row crop / cultivated do not have a problem with ERC spread. Large areas of areas of the state with corners of center pivots planted with ERC for winter livestock protection or wildlife habitat do not have ERC spreading issues.

5) What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)

- Construction of fabricated windbreaks do not provide all the multiple benefits of a planted windbreak. Steel windbreaks are an energy intensive cost. Soil protection, carbon sequestration, oxygen production, reducing air borne contaminates, wildlife habitat (all seasons), landscape aesthetics, improved mental health associated with trees/green plants, potential wood products (edibles, biomass, wood products, etc.) and other nontangible benefits that come from tree and shrub plantings. Potted plants have a potential to help with survival and initial establishment. Identifying different evergreen species that can be used in place of ERC (and then allowing the non-native evergreens to be promoted and cost shared). Substituting other evergreens whenever possible (soils and sites allow) is desired. NRCS has done a good job is reducing the number and amount of ERC in conservation plantings over the past 10 – 20 years. One – two rows of ERC in conservation tree plantings is not the issue of the ERC expansion in the state. Lack of attention and management over the past 50 years has allowed ERC to expand.
- The planting of ERC should not be treated as a "one size fits all" issue for the state. I believe the issue of planting and cost sharing ERC should be left to a local decision on an NRD or LWG level that knows the local resources best. Nebraska has very diverse in soils and annual moisture. This plays into the potential for ERC establishment and spread. In both the west and east, there are sites that ERC is possibly the only evergreen that can be expected to grow and provide the benefits of the tree planting for the cooperator. ERC must be kept as an option for those sites and other locations where spread is not a concern.
- I strongly support and encourage keeping ERC as a component for cost share in conservation tree plantings. Allowing natural resource professionals that are knowledgeable about local resource concerns to make decisions on the use of ERC in collaboration with the landowner and their objectives is the best way to utilize this native evergreen in our landscapes. Limiting the use of ERC where possible and reducing the number of ERC plants in a windbreak are ways to reduce the potential for inadvertent spread. Alternatives are available for ERC depending on the part of the state and soils. Spruces and some pines are alternatives in the east and RMJ and Ponderosa pine are alternatives in the west.
- We have greatly reduced the number and amount of ERC seedlings being planted annually from years past. With this effort and increased awareness on management needs, we can still have ERC in conservation tree plantings and not expect those trees to be a major source of spread.

LWG does not feel like ERC is a problem in their NRD currently. Partially because of the prevalence of cropland in the area, but also because NRD Cedar tree sales have dropped by approximately 1/3 in recent years. And a conscious effort has been made to inform customers that these trees will spread beyond the planting if adjacent to pasture and range lands.

ERC is becoming an increasing problem across the state, but as even NRCS specs state, there are soil types and areas in the state where ERC is the only conifer appropriate for planting and it must be acknowledged that ERC cannot be matched for growth rate and plant density for wind protection.

While keeping in mind that ERC are a huge problem in the landscape, ERC itself, a native tree, is not the true problem, but the lack of fire on the landscape that used to keep cedar numbers in check. We feel that instead of limiting the planting of ERC in areas where it is unquestionably the best option we should be spending more effort keeping ERC out of the areas it shouldn't be. And NRCS should be putting more effort into encouraging more long-term solutions like the addition of fire to our rangeland management plans.

North Platte – Doak Nickerson (NE Forest Service) & NRD

1) What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - All of them
    - Soil Erosion, Degraded Plants, Fish and Wildlife, Livestock Production Limitation, Inefficient Energy
2) Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - Possibly…but it'll take the next generation of landowners to implement this species shift…25-50 years
    - Other species can be used to address the resource concerns above however no species can compete with ERC in the extreme western part of Nebraska for establishment success and for a windbreak/shelterbelt species
3) If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - They don't for NRDs…" west of the 100th meridian"
    - RMJ is the only species currently that comes close as an alternative species
4) How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - They don't for NRD's west of the 100th meridian
    - No significant variation across the NRD, rainfall is factor that is limiting and that exists across the entire NRD.
5) What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - None west of the 100th meridian. Exception would be fabricated windbreaks, and the only building product that qualifies would be wood. Any other building product (steel, plastic, concrete, etc.) does not qualify since the carbon footprint (think "Environmental Quality Incentive Program") to make these 3 products is off the charts compared to wood. Natural resources (water, fossil fuels, CO2 emissions) required to make these 3 products puts them in the minus category. Well below "carbon neutral" wood. Based simply on their carbon footprint, these 3 will never be able to compete with wood.
    - Fabricated windbreaks at least provide another alternative to address resource concerns related to livestock protection and wind erosion however the LWG noted that a living windbreak is still a better option.

All responses are based on all parts of Nebraska that lies west of the 100th meridian.

The 100th meridian knows no political boundaries (i.e. county lines, town/village limits, NRD boundaries, watersheds, state lines, etc.). It's simply a line on the globe. It's clean and succinct, no fuss, no mess or room for debate.

ERC

- “windbreak wonder”
- Grows in a wide range of soils (sandy and non-sandy)
- Grows in a broad range of landscapes, all but feedlot runoff areas
- Drought tolerant
- Will not likely be a pasture/range invader in the western most portions of the state
- Has been present on the landscape since before European settlement (maybe before human settlement) With humans came less fire which helped ERC survive more.

NE Forest service feels that the decision about ERC needs to be made in the NRD Board Rooms

Encourage state technical groups to stand down and allow time for a decision that has been well studied be made

NACO (County boards, weed boards) may also need to chime in, need to keep ERC as a resource

Need a management plan that is developed locally to address ERC, be pro-active rather than reactive

Fear is that there will be a statewide ban on ERC, need to get the people who make the decisions out west to see the ERC is not an invader but instead a resource

If CO2 levels continue to increase, will likely see more ERC (especially in high rainfall areas)

- Contingency plan if it becomes a problem in the west, having a plan may help support being able to keep ERC as a tool for now
- Using more fire for control may need to be discussed

Can the line of where ERC would be banned be based on the 100th meridian or where supplemental water is needed for establishment/survival or something else, need something other than a statewide ban.

Little Blue

1) What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Air quality, soil erosion, fish and wildlife, livestock production limitation

2) Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - Not one single species alone can replace ERC. Multiple rows of trees would be necessary to replace 1 row of cedar trees. Also finding a tree with disease resistance and hardiness to cedar can be difficult

3) If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - No great alternatives

4) How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - Cropland areas of the NRD are less worried about the planting of cedar. All areas agree it makes a great windbreak at farmsteads.

5) What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - No additional alternatives.

Papio Missouri River

1) What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Several resource concerns were discussed. ERC could address degraded plants resource concern from the standpoint of being a desirable specie in a farmstead windbreak to an undesirable specie in a pasture. ERC in a farmstead windbreak could address the energy resource concern or provide shelter in a confinement operation for livestock production resource concern. ERC can play a part in Fish and Wildlife resource concern by providing shelter and food.

2) Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - Maybe – it is getting more difficult in finding good substitutes that do not have their own problems with establishment and disease.

3) If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - Juniper are currently being used in western NE. Ponderosa Pine is harder to establish in western NE. Forest Service is trying small potted plants to see if that will improve establishment. White pine can be used in some situations. Viburnum shrubs were discussed as an option to outside row. It was remembered by one of the attendees that the Forest Service had put out a handout that had several evergreen options to use in windbreaks. (NOTE: The mentioned handout was found by a DC a couple of days after the meeting. Although it was developed as providing alternatives to green ash, it still has a section on evergreen to use in windbreaks. It is attached to the LWG minutes).

4) How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - Certainly, rangeland area has a greater concern for ERC spreading and reducing grazing capacity. There is still issues with cedars in eastern NE in pastures even though cropland is more prominent.

5) What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - It was discussed that we should leave it up to the planner if ERC should be used in a windbreak. Worse situation would be legislation deciding the issue of using ERC. Fabricated windbreaks were brought up as an option for livestock in limited situations to provide protection from snow. NRCS has already developed specifications for these.

Upper Loup – Rachel Allison, Rich Woollen & LWG

1) What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Primarily for windbreaks, weather related resource concerns, especially during the winter months. Livestock and calving protection; energy savings around the farmstead; snow control and safety along country/travel roads (living snow fence); wildlife habitat (winter protection and cover); as well as wind caused soil erosion; water caused erosion (riparian forest buffers); and water collection and distribution (field windbreaks)
    - Soil Erosion (wind), Excess Water (drifted snow), potential water quality, pesticide transport: wildlife habitat; Livestock Production (Shelter)
    - Livestock production, water quality (buffers), Cropland protection
    - In our district the resource concern being addressed by the ERC is the conservation of energy, livestock and wildlife wind protection
    - All of them
    - Livestock shelter, field wind erosion protection, snow drift.

2) Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - What ERC provides as a conifer is primarily winter wind and snow control because of its habitat which provides density to the ground, even as the tree grows older, and its survivability, and adaptability to most sites. Other conifers have limitations; either they don't maintain the low cover/density (pine), might get a fungal disease with increasing humidity (RMJ), or can't handle the dry conditions (spruce). To meet the resource concerns noted in item 1 without ERC, conifers, broadleaf trees and shrubs would not meet some of the resource concerns unless adaptations are made to plans and additional rows are planted.
    - To some degree, it may require additional rows using more space to achieve the same level of protection
    - Depending on location, desired cooperator objectives, and design constraints, other species may or may not accomplish the desired goal as adequately as the use of at least some ERC
    - We have a wide variety of soils in our district. Some will not allow much of anything else to grow other than ERC. Cooperators love the idea of Pine trees or RMJ, but if it will not survive in certain conditions, then it is not an option. If the other trees had the survivability as the ERC, then yes, they would be just as fitting to address our resource concern.
    - Possibly…but it will take the next generation of landowners to implement this species shift…25-50 years.
    - For wildlife habitat specifically, diversity is key. Shrubs (fruit bearing), deciduous pine, nut bearing, etc.
    - For wind protection: Rocky Mountain Juniper only on exterior rows (interior rows to do not permit air circulation for proper growth). For interior rows, shrubs would take care

of our business. Ponderosa pine but must have insect control at the proper time. This is a crucial point of survivability for pine.
    - Pine density will take additional rows to create the same density as a 4 row ERC windbreak. Utilization of ERC or proper site-suited species will be encouraged to the landowner.

3) If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - In most western sites, RMJ can be used which has a similar habitat as ERC, but it has some drawbacks. With increasing humidity and its preference for drier conditions, the east-west line where fungal concerns exist is gradually moving west; often this begins to appear in trees that are 15-20 feet tall, just when the tree is providing much needed protection. While ponderosa pine would do very well on most sites, its drawbacks are losing lower branches as it matures, and poorer initial survival. Jack pine drawbacks are the same, but in addition it will not handle the drier sites. Spruce are slower growing and not heat or drought tolerant, unless given special care. I have tried or seen a few special cases where spruce was used, and they have not survived.
    - SW white pine (?), limber pine (?)
    - Rocky Mountain juniper may be a good alternative in the west where cercospora blight is not a threat to tree health. Ponderosa pine or jack pine, perhaps in combination with shrubs may provide alternatives to ERC. However, I don't know that in some locations there is a species that can provide for many desired outcomes as well as ERC. ERC is a well-adapted native tree species with low branching, good drought tolerance, and minimal insect and disease concerns.
    - Ponderosa pine and jack pine are the only two alternative species. R.M. Juniper is not a suitable replacement.
    - All of them.

4) How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - There really aren't different resource concerns or needs noted in item 1, windbreaks for livestock as an example could be on crop or range, near a wooded area, etc. and it is important to have ERC as an option for the sites. However, ERC will spread and noticed more on rangeland dominated areas as well as in woodlands and riparian areas as it is an adaptable species that will establish in areas with limited management or attention. With minimal or lack of management and tree decline from environmental conditions or pest issues, unwanted species of all kinds (forbs, shrubs and trees) will move in and take advantage of open space.
    - ERC is a greater concern for management increasing from west to east. Unmanaged landscapes are significantly more at risk than managed areas regardless of land use.
    - Yes. Perceived negative impacts may vary. The need for controlling the spread of ERC may be more necessary in rangeland and riparian corridors versus cropland. The need

for management is a key consideration when considering ERC presence in the landscape.

- The issues from the western part of the state differ from the eastern. Western Nebraska can plant R.M. Juniper without them developing the Cercospora Blight that we tend to get in the eastern part of the state. In turn, the eastern part of the state has better luck with spruce and pine surviving.
- They don't for NRD's…" west of the 100th meridian"!

5) What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - Fabricated windbreaks of course could be used, as people use bales and fencing already to provide protection when space, time, inclination or other issues keep them from putting in trees. Trees however, different than a fabricated windbreak, will provide many benefits while addressing the resource concerns. Cost-share for potted pines or other species and animal protection devices certainly would be a good option to help in the initial survival and establishment of some trees.
    - What is the carbon footprint of a steel fabricated windbreak vs a planted windbreak? Supporting the planting of windbreaks is the answer, not placing steel panels everywhere. Paying a higher cost share rate for potted stock and/or development of other species would be preferable.
    - Windbreak design considerations that m ay be somewhat nontraditional. For example, planting a conifer and shade tolerant shrub in the same row or two rows, one of a conifer and another of a shrub at a close between row spacing to improve density long term. The use of container seedlings to improve overall conifer survival and animal protection are beneficial considerations.
    - All the above
    - None…"west of the 100th meridian". Exception would be fabricated windbreaks… and the only building product that qualifies would be WOOD. Any other building product (steel, plastic, concrete etc.) does not qualify since the carbon footprint (think "Environmental Quality Incentive Program – EQIP) to make these 3 products is off the charts compared to WOOD. Natural resources (water, fossil fuels, CO2 emissions) required to make these 3 products puts them in the minus category…well below "carbon neutral" WOOD. Based simply on their carbon footprint…these 3 will never be able to compete with WOOD.
    - Recommended higher cost share rate on potted pine trees. This incentive should help with planting diversity.

One item that should be considered is that every site will be different, and each site will take a different complement of species to provide the best fit for the resource concern. Rather than going with only one or two species as has happened in the past, the goal should always be to diversity so that reliance is not on one tree. This prevents not only overuse of a species but minimizes the impact when something goes wrong with a species from a pest or environmental condition. Allowing natural resource professionals that are knowledgeable about tree species, the local site and the resource concern to make decisions

with the landowner whether to use ERC along with or other species on the site is the best way to utilize this native evergreen. Certainly, the goal is to limit the use of ERC where possible and several partners and professionals are making a transition towards diversity of trees and shrubs.

Kevin state that not planting any ERC was how ERC concern was being addressed through our office. Also planting Junipers, using mulch and driplines to increase the likelihood of the Junipers to survive was also being utilized. Anna gave the opposite scenario of last Spring, as seen through their office, which was a very wet spring in which many of the Junipers planted did not survive.

Kevin added that the NRCS has not given cost share on ERC for the last 2 years. Producers can plant them if they choose but there is no cost share available to have them planted. NRD has a policy against cost sharing on ERC. The NRCS follows the same guidelines.

Leah agreed that Pines probably wouldn't give enough protection. Rachel added that the design plan would need to be altered to make it a better windbreak. Ashley mentioned that diversity should also help. Chad asked what the general layout plan was for something like this, how many rows of shrubs, pines, hardwoods, etc. The response was to have several rows of shrubs on both the north and the south sides as well as a row in the middle with several rows of pines and hardwoods depending on how wide the windbreak was to be.

Rachel shared that there is a disease that Junipers get from lack of air flow so a good way to design the windbreak might be to plant shrub, juniper, shrub, juniper. Kevin pointed out that the heavier soils are more difficult for Junipers to thrive. Sandy soil types in our area are well suited for Junipers with ten feet between each of the six rows of 120 ft. in width.

Anna shared that the NRD planted between 30-35,000 trees each year. She said that it depended on the producer, but many want to plant cedars. Management is the problem since most producers do not manage the trees once they start to spread beyond the windbreaks. Bob pointed out that the cedars will come back if not managed. Kevin said our EQIP contract ends one year after the contract expires. It was mentioned that with the new Farm Bill, management may change.

South Platte

1) What resource concern(s) is/are being addressed by ERC? (Use the resource concern list that NRCS applies to the conservation planning process)
    - Soil Erosion
    - Soil quality degradation (maybe to some extent)
    - Livestock production limitation
    - Inadequate wildlife habitat

2) Can that resource concern be adequately addressed by another species of conservation tree? (For example, if reduced wind erosion or improved snow distribution across a field is the objective, can another species accomplish that function?)
    - Rocky mountain Juniper is good, but maybe not as tough/hardy as ERC. Availability of container RMJ is an issue and supply of bare root is as well. This will probably take more than 2 years for nurseries to respond to a shift to RMJ only.
    - Politically, Russian olive was an easy target because it is not native. ERC is a native. If we start beating up native trees, where does it stop (hackberry, plum, etc.)?
    - Don't use ERC as a scapegoat. Instead focus on education and get ahead of the issue (like in our NRD). Don't make the rest of the state suffer because of problems in other parts.
    - There is a sense of a rush to "chop the head off ERC" but we need to figure out what our alternatives really are first
    - Need to keep in mind that we need diversity to keep a windbreak healthy
    - Don't take the RMJ away from us, period. If this discussion gets more political than it already is, people won't know the difference between RMJ and ERC. They will all be "bad."
    - There are no shrubs that can fill the void. They are not tall enough and not dense enough.
    - Ponderosa pine is a good tree, but it lacks the density of ERC. So, it would take more rows of trees to do the same work as the RMJ/ERC.
    - There's just no way to duplicate the protection we get with other species that can grow in Western Nebraska.
    - This is going to take a long time to make this shift to get something else on the ground
    - We need to solve the mystery of survival of other species (primarily pines) to be able to get landowners on board with a new species. Look what happened to ponderosa pine in 2012 and 2013. We lost some very good stands of 10-15-year-old trees.
    - Producers want something that is low maintenance in their windbreak. They don't want to spend many years doing replants. If you can get them to replant for 2 years, that's a win. More years of replants makes you question the species you chose in the first place.

3) If an evergreen is necessary to accomplish the desired outcome, what alternative species exist to replace ERC? (R.M. juniper, ponderosa pine, jack pine, etc.)
    - This is a maintenance issue. If nothing else is going to work as well as ERC, don't take it away. Focus on maintenance and don't slam the door shut for a good species.

- One LWG participant remembers hearing talking with a rancher that had been out cutting small cedars out of her pasture right before a meeting they attended together. Someone asked the question if she would plant the same windbreak again and her response was absolutely, 100% would she do the same thing over because it's the best windbreak she has as far as density, survival, etc.
- Some other NRDs could be hit worse than SPNRD by the restrictions on ERC because RMJ doesn't like humidity. (North Platte seems to be about the tipping point on ERC survival).

4) How do the issues listed above vary from one portion of the NRD to another? (For example, are there different resource concerns in cropland dominated areas vs. rangeland areas vs. woodlands or riparian corridors?)
    - They really don't in SPNRD

5) What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings? (For example, financial assistance for the construction of fabricated windbreaks, or increased payment rates for potted pine species or animal protection devices, etc.)
    - Need a grace period for whatever changes are planned. The supply can't change overnight. It will take time for RMJ development to improve survival, to get an adequate supply in general and specifically potted stock, etc.

Tri-Basin

Discussion on management versus drawbacks to ERC and on Brush Management options for ERC. John Thorburn stated that the NRD tree program has looked at alternatives involving pines and other species. Most other options have higher replacement rates and maintenance issues. In some parts of the district, the soils prevent other trees from thriving. ERC is much more cost effective for windbreaks. Halsey has gone to potted pines exclusively in hopes of better survivability. Another potential option would be fabricated windbreaks. All sorts of fabricated windbreaks available (i.e. wood, metal, or fabric). Other deciduous windbreak options would have to include protection from wildlife since deer and rabbits decimate young trees.

Twin Platte – Jeff Nichols (NRCS Resource Conservationist)

PF Resource Concern – invasive red cedar is observed in the entire District.

US Fish and Wildlife Service – Excess Plant Pressure from Eastern Red Cedars in the upland and the riparian zones is a concern. Also improved grazing management is a priority.

Lincoln Co Weed Control identified Eastern Red Cedar as a concern as well as phragmites in the riparian areas.

FSA resource concerns were that grazing benefits reduced blowouts and healthier plants. Eastern Red Cedar control is needed. Continued Education on maintenance to prevent the spread of cedars from windbreaks.

NE Game and Parks also identified a major resource concern was excessive plant pressure in rangelands from eastern red cedar encroachment. They also supported the concerns of invasive plants in the river systems.

Rachel with the NE Forest Service identified a need for livestock protection, cover crops, and riparian water quality as concerns.

Extension resource concerns (emailed from Randy Saner) – water management and soil erosion on cropland. Ensuring overgrazing does not occur on rangelands. Better riparian management.

Jeff Nichols, NRCS Resource Conservationist presented a short power point on Nebraska and Eastern Red Cedar using information from the State NRCS Forester and the UNL Cedar Literacy Website.

1) What resource concerns are being addressed by ERC?
    - Primarily livestock protection, farmstead energy savings, and erosion reduction. Several items were covered in Jeff's PowerPoint.

2) Can that resource concern be adequately addressed by another species of conservation tree?
    - Mary presented information on the livestock shelter structure to the local work group. Rocky Mountain Juniper can be used if it is on the north side or has room because it is showing fungal concerns with the increasing humidity. Blue Spruce cannot handle dry conditions and will require supplemental water. Pines don't have the same lower cover and density that Eastern Red Cedar does.
    - The Foresters answer was to plant a diverse windbreak of multiple rows. Mary requested that she provide an example of the windbreak she described.

3) If an evergreen is necessary to accomplish the desired outcome, what alternative would replace ERC?
    - Rocky Mountain Juniper comes to mind, but has fungal concerns with increasing humidity, it starts to appear in trees that are 15-20 feet tall. Ponderosa Pine should do well on most sites but has the drawback that it loses lower branches as it matures. Jack Pine cannot handle drier sites. Spruce are slower growing and cannot handle heat or drought.

4) How do the issues listed above vary from one portion of the NRD to another?
    - Eastern Red Cedar is encroaching on all rangeland in all 5 counties. It has a presence in long term no-till crop fields as well.

5) What other program adaptations can be used to facilitate reducing the use of ERC in tree plantings?
    - Implementation of Structures for Livestock could be used.
      Cost-share for potted pines and animal control devices could help with initial survival of alternative species.

Brad Soncksen, State NRCS Program Leader explained the Practice Payment Schedule process and requested that participants review it and make recommendations. Mary requested that participants notify her by February 19 if they had any recommendations.

Other agency reports included FSA reporting cropland seeded to grass may lose crop bases permanently. Bruce and Kristy reported on the North Platte USDA Women in Ag Conference on March 20, 2019. Rachel reported that Mark Frickel has joined NE Forest Service and is helping with community wildfire and other forestry projects. Adam with NE Game and Parks reported on the Focus on Pheasants Area and CRP incentives that are available. The Twin Platte NRD gave the final partner report and said they are focused on not planting eastern red cedar, eradication phragmites, and the next Integrated Management Plan which will include mandatory data collection.