



DISCLAIMER: These are draft criteria and are subject to revision based on Program evaluation of monitoring and research data.

PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM Tern and Plover Minimum Habitat Criteria Descriptions

Terminology for Quantifying Tern and Plover Habitat Availability

- Bare Sand – River island or sandpit site with <20% vegetative cover. Bare sand areas can be composed of dry sand or gravel substrate and nest furniture may be present.
- Predator Perch – Tree, power line, power pole, etc ≥ 10 feet tall that could be used by an avian predator to view the potential nesting area.

Tern and Plover In-channel Minimum Habitat Criteria

1. Suitable Nesting Area – $\geq 1/4$ -acre sandbar ≥ 18 inches above river stage @ 1,200cfs.
2. Channel width – ≥ 400 feet
3. Water Barrier – ≥ 50 feet
4. Distance to Predator Perch – ≥ 200 feet

Suitable Nesting Area

➤ Definition – ≥ 0.25 -contiguous acres of bare sand 18 inches above river stage @ 1,200cfs with ≥ 1.5 acres of exposed bare sand within a $\frac{1}{4}$ -mile reach of channel.

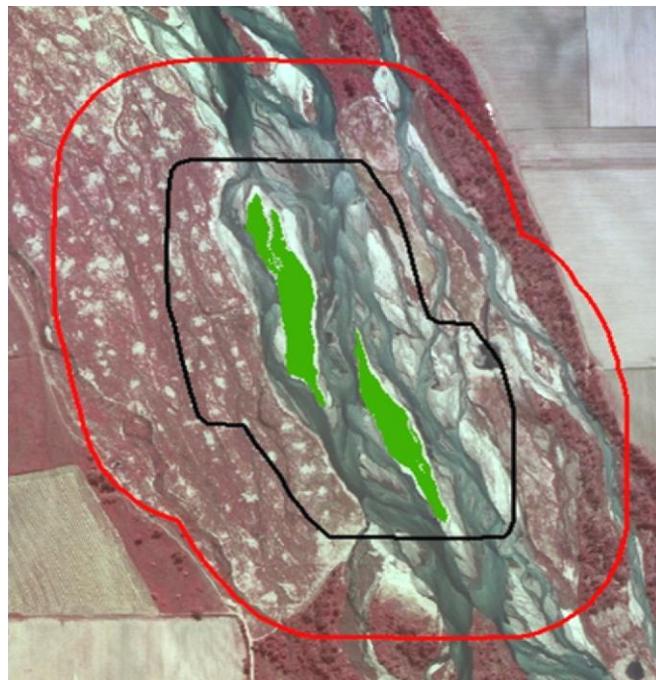


Figure 1. Suitable nesting area (green) with ≥ 1.5 acres of exposed bare sand within a $\frac{1}{4}$ mile stretch of channel.

➤ Criterion – all sandbar areas $\geq 1/4$ -acre in size and ≥ 18 inches above river stage @ 1,200cfs are suitable nesting habitat if there is ≥ 1.5 acres of exposed bare sand within a $\frac{1}{4}$ -mile reach of channel and the areas meet all additional in-channel minimum habitat criteria.



Channel Width

- **Definition** – Along a line perpendicular to the channel extending through the center of a potential nesting island, channel width is the entire open-channel area, including sand, which lies between the vegetation lines of the island or bank on each side of the sandbar.

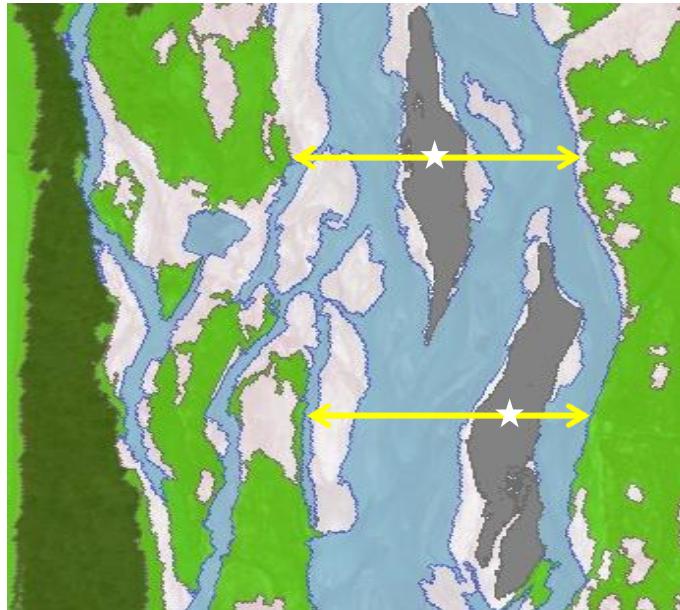


Figure 2. Channel width measured perpendicular to flow from the center of potentially suitable nesting areas.

- **Criterion** – Sandbar areas in channels ≥ 400 feet wide at 1,200cfs and observed flows are suitable nesting habitat if the areas meet all additional in-channel minimum habitat criteria. Bare-sand areas within channels <400 feet wide contribute to the 1.5 acres of bare sand within a $1\frac{1}{4}$ -mile reach of river, but are not suitable nesting habitat.

Distance to Predator Perch

- **Definition** – Distance from the edge of potentially suitable nesting habitat in any direction to the nearest potential predator perch.

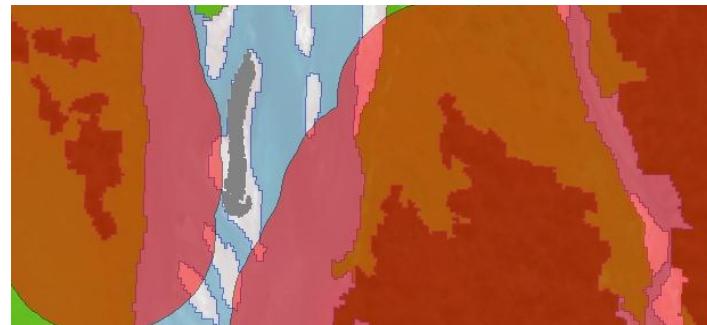


Figure 3. 200-foot buffer around predator perches (red area).

Criterion – Sandbar areas ≥ 200 feet from a predator perch are suitable nesting habitat if the areas meet all additional in-channel minimum habitat criteria. Bare-sand areas <200 feet from a predator



perch contribute to the 1.5 acres of bare sand within a $\frac{1}{4}$ -mile reach of river, but are not suitable nesting habitat.

Water Barrier

- Definition – Width of individual threads of channel, measured perpendicular to flow, that lie between the bank and potential nesting habitat (Figure 4).

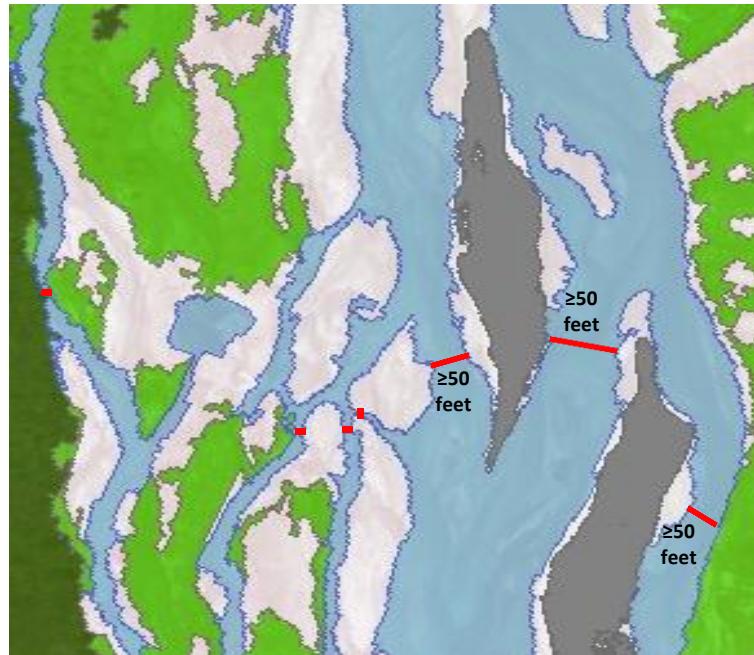


Figure 4. Channel width measured as the shortest distances across water from the edge of potentially suitable nesting areas to the bank lines on each side.

- Criterion – Sandbar areas with a ≥ 50 -foot contiguous water barrier between each shoreline and edge of bare sand are suitable nesting habitat if the areas meet all additional in-channel minimum habitat criteria. Bare-sand areas with a water barrier <50 feet contribute to the 1.5 acres of bare sand within a $\frac{1}{4}$ -mile reach of river, but are not suitable nesting habitat.



Tern and Plover Off-channel Minimum Habitat Criteria

1. **Area** – ≤ 3.5 miles of main channel or ≤ 2 miles of side channel
2. **Minimum Habitat Size** – ≥ 1.5 acres of suitable nesting habitat per site; contributing habitat must be ≥ 0.25 acres in size.
3. **Distance to Predator Perch** – ≥ 200 feet
4. **Off-channel sites delineated annually**; must contain sand with adjacent water areas
5. **Suitable Nesting Area** – Delineated by monitoring crew annually

Area

- ***Definition*** – Program Associated Habitat Area
- ***Criterion*** – Areas ≤ 3.5 miles of the main channel or ≤ 2 miles of side channel of the Platte River are habitat if the areas meet all additional minimum habitat criteria.

Minimum Habitat Size

- ***Definition*** – Total of ≥ 1.5 acres of conforming habitat per site
- ***Criterion*** – $\geq \frac{1}{4}$ -acre patches of dry bare sand and/or gravel are suitable nesting habitat if there is ≥ 1.5 acres of suitable nesting habitat total within a site and the areas meet all additional off-channel minimum habitat criteria.

Distance to Predator Perch

- ***Definition*** – Distance from potentially suitable nesting habitat in any direction to the nearest potential predator perch.
- ***Criterion*** – Bare-sand areas ≥ 200 feet from a predator perch are suitable nesting habitat if the areas meet all additional off-channel minimum habitat criteria.

Water-Sand Criteria

- ***Definition*** – Off-channel sites will be delineated on an annual basis.
- ***Criterion*** – Sites with sand and adjacent water areas are suitable nesting habitat if the site meets all additional off-channel minimum habitat criteria.

Suitable Nesting Area

- ***Definition*** – Delineation of areas within each site that, according to the monitoring crew, are suitable habitat for nesting.
- ***Criterion*** – Monitoring personnel will hand delineate suitable nesting areas within sites that are monitored to exclude sand and gravel piles and active mining areas that are not conducive to tern and plover nesting. The habitat availability assessment contractor will identify suitable habitat through application of the various filters, document spatial extent and availability of habitat identified via image interpretation, and apply the hand-delineated polygon layer as a final filter to remove unsuitable nesting areas within each site.