



1 **PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM**
2 **Independent Science Advisory Committee (ISAC), Technical Advisory Committee**
3 **(TAC), and Executive Director’s Office (EDO) Staff Meeting Notes**
4 Hilton Garden Inn – Omaha, NE
5 April 22-24, 2014

6
7 April 22nd ISAC-TAC-EDO

8 **Attendees**

- 9 David Marmorek – ISAC Chair
10 David Galat –ISAC
11 Jennifer Hoeting - ISAC
12 Ned Andrews - ISAC
13 Adrian Farmer – ISAC
14 Brian Bledsoe – ISAC
15 Jerry Kenny – ED
16 Bridget Barron – ED Office
17 Chad Smith – ED Office
18 Dave Baasch – ED Office
19 Jason Farnsworth – ED Office
20 Matt Rabbe – US Fish and Wildlife Service
21 Jeff Runge – US Fish and Wildlife Service
22 Tom Econopouly – US Fish and Wildlife Service
23 Jesse Bradley – Nebraska Game and Parks Commission
24 Rich Walter – The Nature Conservancy
25 Mike Drain – Central Nebraska Public Power and Irrigation District
26 Mark Peyton – Central Nebraska Public Power and Irrigation District
27 Jim Jenniges – Nebraska Public Power and Irrigation District
28 John Shadle – Nebraska Public Power District
29 Mark Sherfy – US Geological Survey Northern Prairie Wildlife Research Center
30 Mark Czaplewski – Central Platte Natural Resource District
31 Brandi Flyn – Nebraska Department of Natural Resources
32 Suzanne Sellers – State of Colorado
33 Tom St Clair - RESPEC
34 Mike Fritz – Nebraska Game and Parks Commission
35 Pat Engelbert – HDR



36 **Welcome and Administrative**

- 37 - Smith welcomed everyone to the meeting; the group proceeded with a roll call; and
38 discussed the logistics of the meeting.
39 - Smith mentioned EDO staff developed a set of questions for the ISAC to respond to
40 during and following the meeting.
41

42 **2007-2013 Tern and Plover Monitoring Summaries**

43 *Dave Baasch presentation:*

- 44 - Farmer – If you have marked birds, why do you use this approach for showing nest and
45 brood exposure dates? Baasch – We do resight some birds, but others are not marked so
46 banding data can only go so far. Sherfy – Based on band resight data, 3-5 days seems like
47 a reasonable renesting interval.
48 - Marmorek – Is banding and monitoring done at the same time by the same people, or
49 different times by different people? Baasch – One ground crew, all happens at the same
50 time, but there is some monitoring that occurs separately at non-Program sites such as
51 NPPD sandpits.
52 - Marmorek – If non-Program tern pairs are going down and Program breeding pairs are
53 going up, are you robbing Peter to pay Paul? Baasch – Birds seem to be spreading out over
54 a larger habitat area which is a benefit because a localized storm event won't destroy all
55 nests.
56 - Galat – Could look at percentage of birds nesting on Program versus non-Program sites.
57 Baasch – Starting at zero has too much leverage on the line so that wouldn't work.
58 - Jenniges – Birds are nesting on sandpit habitat, it is the habitat classification (Program vs.
59 non-Program) that is changing.
60 - Hoeting – Aren't you interested in total amount of habitat; you should just do that plot;
61 strong relationship between total number of nests and total acres of habitat. Baasch – There
62 seems to be a strong relationship between bird numbers and off-channel habitat availability.
63 Galat – That is really what you want to know for the hypothesis, right? Hoeting – Need
64 both habitat types.
65 - Marmorek – Do you find many birds on areas that do not meet Program habitat criteria?
66 Baasch – Not on all off channel sites; in channel yes, might need to do some refining; but
67 need to get more birds on the river to get a clearer picture.
68 - Galat – Indicated you don't need to band for BQ #6, but do need it for BQ#7. Baasch –
69 Correct. Galat – Is banding intended to address BQ#7? Baasch – Yes, we need to know
70 what birds we are dealing with (new birds or existing birds that are pulled from sandpits).
71 - Marmorek – Does it matter whether birds leave one sandpit and move to another; Baasch
72 – Not for the hypothesis. Galat – Programmatically you have less control over non-Program
73 habitat; Baasch – We do lose habitat every year at non-managed sites. Galat – The
74 comparison between those you may lose and those that are secure is the more important
75 question. Baasch – We have targeted those places to acquire and/or manage to create new
76 habitat. Czaplewski – It is important to note that gravel mining techniques have changed
77 and old sandpits worked better for habitat than new sandpits (steep, less spoil piles, etc.).
78 Galat – When sand and gravel miners are done with the site is the strategy to sell it for
79 development? Czaplewski – Generally, they are in it to make money. Galat – Would it pay



- 80 for the Program to go into the sand and gravel mining industry or to develop relationships
81 with miners to get what you want? Smith and Jenniges – Depends on what your goal is.
- 82 - Galat – Is marking birds a cost in terms of economics or bird mortality; Jenniges –
83 Economic.
- 84 - Farmer – There are two kinds of habitat. If the birds prefer habitat A (river) over B
85 (sandpit), but they still need and use B during high and low flow years, B is a good have
86 as a back up plan, so the answer is you need both until you have enough A to see if it is
87 truly preferred and adequate. Galat – does it imply you won't learn much from bands until
88 there is a lot of in-channel habitat? Farmer – there are other reasons to band, but on this
89 question yes you won't learn much now.
- 90 - Runge – Earlier discussion about lack of sustainability, that is one of the issues that was
91 looked at as the Program was developed; there is no long-term mechanism to maintain and
92 protect sandpit habitat especially if Program goes away.
- 93 - Farmer – Thought experiment: get at the power of the data; suppose there are 100 acres of
94 sandpits and we double it; same number of birds comes back and population decreases on
95 old and increases on new; fixed population; B was last year, A is new; A goes up, B goes
96 down; doesn't show preference, birds just settled randomly and density goes down on old
97 and up on new; Sherfy – Need to figure all four population factors (birth, death,
98 immigration, emigration); Galat – Have to be very careful as to what you infer is
99 preference; Baasch – Should be able to answer this with densities per acre of available
100 habitat (habitat selection).
- 101 - Marmorek – Would be good to set up a simple model to simulate changing amounts of
102 habitat (in channel, off channel, etc.) and a simulation algorithm you would use to test for
103 habitat selection; could get indications of things that are random and things that are not;
104 how strong is your test (statistical power); likely to find you need way more birds and/or
105 habitat to get a strong test, but best to test this first; in these discussions, there are always
106 multiple objectives – recovery, cost effectiveness, etc.; would be useful to put this in a
107 decision analysis structure whereby you look at alternative ways of developing habitat,
108 have various likelihoods of persisting, then work through trade-offs and critical
109 uncertainties.
- 110 - Jenniges – The hypotheses were built on bare sand, not on habitat, and none of the
111 hypotheses were built thinking you could band birds.
- 112 - Hoeting – Any measure of effort? Is there a constant effort over time? Baasch – Have
113 been doing intensive monitoring since 2009; bird numbers were lower pre-grid searching.
114 Jenniges – depends on what metric you are looking at. Hoeting – worry about basing
115 conclusions based on increased effort, need to compare apples to apples and include effort;
116 could do analysis where you account for detectability; should you be producing estimates
117 instead of a census?
- 118 - Bledsoe – You collect habitat metrics at all these sites; has this information been used to
119 refine what makes for optimal sandpit habitat; Baasch – Will do habitat selection analysis
120 this summer. Bledsoe – What about slope to water and configuration of sand; how dialed
121 in are we on optimal sandpit habitat if a decision is to be made in the future about whether
122 to manage more sandpit habitat? Jenniges – Have to be careful because birds will nest on
123 different part of the sandpits each year.



- 124 - Marmorek – A lot of measured metrics (in monitoring protocol) are all within a one square
125 yard area of the nest; why would the Program only be interested within that distance; could
126 be a covariate unlikely to be of much use. Sherfy – USGS has collected a lot of that kind
127 of fine scale data and compare it to wider scale data and use both to refine selection; found
128 correlation at that scale, can't say it is more or less important than the larger scale though.
129

130 *Mark Sherfy presentation:*

- 131 - Marmorek – 2011 through 2013 there are narrower confidence intervals on plovers than on
132 terns but there are more terns out there; Sherfy – Probably indicative of process variability
133 in terns from nest to nest and time to time; Galat – Are the data analyses dominated by off
134 channel sites? Sherfy – Yes.
- 135 - Marmorek – Do you know if birds are banded on the Platte but show up on other rivers?
136 Sherfy – This analysis does not really show that. Marmorek – Would a bird that nests on
137 non-Platte areas be interpreted as not having survived? Sherfy – Yes, but we could do a
138 meta-population analysis to see how often birds move from one region to another. Galat –
139 A fledgling in 2009 would be included in adults in 2010, plus whatever other age classes
140 are out there? Sherfy – Yes.
- 141 - Hoeting – Given the huge distances between re-nest sites, is the re-nest frequency a low
142 estimate? Sherfy – Yes, it is a minimum estimate because there may be re-nesting on sites
143 USGS doesn't monitor or on other river systems.
- 144 - Galat – What proportion of birds don't breed in first season or do you assume they all are
145 capable of breeding after they are fledged? Sherfy – We had 6 piping plovers return to the
146 Platte to breed, and all of them were 2+ years post-hatch. This was surprising, as I expected
147 to see first year birds return to nest. Galat – So where do non-breeding plovers hang out,
148 is there any reproductive biology data on young plovers? Sherfy – not sure. Baasch – We
149 do see single birds from time to time so there are definitely birds out there that are not
150 breeding. Hoeting – How long do the birds live? Sherfy – have resighting data from
151 Canadian birds that were 10-11 years old, but the common thinking is 5-6 years.
- 152 - Hoeting – Is somebody doing the metapopulation analysis? Sherfy – Data is being
153 collected and the metapopulation model is being parameterized now.
- 154 - Galat – We read that only 16% of plovers nest on river habitat; the metapopulation model
155 could incorporate how many nest on reservoir shorelines to help build the model.
- 156 - Mark Czaplewski – How was the 3.5 day re-nesting interval calculated? Sherfy – 3.5 days
157 is the time from the day the first nest failed to the time another egg was found.
- 158 - Galat – Mortality doesn't seem to be a strong counter argument for intensive monitoring,
159 cost is a factor, are there other counter arguments that we need to consider? Jenniges – you
160 get a lot of valuable data early on and then it starts to tail off so how long do you keep
161 intensive monitoring going? Galat – Less valuable in what sense? Need to look at trends
162 over time and that requires a long-term approach. Jenniges – If the long term trend is what
163 you want then yes, but maybe you get what you need after 5-6 years. Galat – Trying to
164 understand what environmental factors drive movements from year to year is probably
165 really where the benefit is. Sherfy – Could use metapopulation models to plug in different
166 habitat sites. Galat – Missouri River spends huge amounts of money building habitat but
167 little money on monitoring and research which is not a good approach. Jenniges – Only if



- 168 you can use the data to inform management. Galat – That is an issue of institutional inertia.
169 Runge – Need to consider how much of change is due to management actions versus natural
170 variability.
- 171 - Marmorek – Is it the intention of USGS working with EDO to produce a report for the
172 October session which squarely addresses the Big Questions? Sherfy – USGS is drafting
173 a report that follows this presentation.
 - 174 - Hoeting – Sherfy talked about using mark/resight to estimate survival; do you propose
175 these data be used to estimate population size; could we get a better population estimate
176 from mark/resight? Sherfy – That could be done, I think; the approach I was talking about
177 was using active nests to represent a pair of birds. Hoeting – so the mark is the location of
178 the nest? Sherfy – right, but that is only one way of thinking about it. Baasch – one
179 potential hang-up is that USGS doesn't go to a couple of the sites, so they get a bulk of the
180 central Platte data but not all of it.

181 **Process and Reporting Discussion**

- 182 - Marmorek – about three years ago the ISAC was concerned that a lot of the presentations
183 were not on the hypotheses so the ISAC strongly recommended that summaries and
184 presentations focus more on that; strongly urge that everybody involved try to squeeze as
185 much insight on Big Questions as possible and include other TAC thoughts as well.
- 186 - Marmorek and Galat – reports should focus on addressing big questions and hypotheses.
187 The presentations were much more helpful than just the data reports the ISAC got before
188 the meeting. Baasch – That kind of interpretation is generally included in the State of the
189 Platte Reports.
- 190 - Sellers – I would recommend the opposite and have reports only focus on the data and
191 leave EDO interpretation to the big questions separate. Marmorek – I disagree. Squeeze
192 as much insight as possible out of the data by addressing BQs and priority hypotheses,
193 reduce the science pile, present alternative interpretations.
- 194 - Smith – 2012 State of the Platte Report had unanimous support of the TAC, but then
195 some TAC members have since back-tracked. We now realize that we'll never get full
196 support of TAC on the State of the Platte Report. GC said “you need to tell us what's
197 going on, regardless of what various agencies are saying”. State of the Platte Report is
198 now a document from the EDO to the GC (EDO's best judgment), with additional
199 appendices that include TAC comments. Hard for contractors to pull all of this
200 information together because they don't have the overview of all the information. I am
201 concerned about mixed interpretations of information by USGS and EDO. Need to
202 wrestle with the nice to know vs. need to know information.



- 203 - Summary of Program Committee roles:
- 204 o EDO (synthesis of information for GC)
- 205 o GC (decision making, together with finance committee)
- 206 o TAC (technical advisory people representing their agencies). Lots of EDO-TAC
- 207 discussions, best to have TAC consensus when presenting info to GC, deciding on
- 208 ISAC members, RFPs, etc. Kenny – Have advisory committees on technical, land,
- 209 water and AM. They advise both GC and EDO on the specifics of program
- 210 implementation.
- 211 o ISAC is an advisory committee that reports independently to the GC (Kenny –
- 212 ISAC reports if the Program is doing things right)
- 213 - Runge – information needed to evaluate questions (where we are now) may not be
- 214 enough information to make adjustments to close the AM loop. Smith agreed, but added
- 215 he is very committed to getting to “Adjust”. We are trying to push towards that final step.
- 216 - Runge – How does two thumbs down on Q8 affect the next set of management decisions?
- 217 Smith – We have now moved to a position that we need a peer-reviewed or published
- 218 report before we go to 2 thumbs up or 2 thumbs down on the big questions.

219 **October 2013 Central Platte River High-flow Event**

220 *Matt Rabbe presentation:*

- 221 - Rabbe – 1 in 500 year event last October, different timing from other pulses.
- 222 - Marmorek – appears the vegetation was removed or buried more at Rowe and Dippel and
- 223 less near the Crane Trust headquarters where management (channel disking) occurred.
- 224 Rabbe – it appears disking efforts prior to the flood missed a lot of vegetation.
- 225 - Walters – Is the vegetation shown in the before-flood photos annuals? Rabbe – a
- 226 combination, some annuals some cottonwoods; not a significant amount of phragmites.
- 227 - Bledsoe – What are the first vegetative species to show up? Farnsworth and Jenniges –
- 228 annual grass species that have poor root structures and are the first to go with water.
- 229 - Mark Peyton: How do you tease out effects of ice from effects of high flow? Rabbe –
- 230 there are daily photos which show differences due to water prior to ice; have seen similar
- 231 effects in 2010 and 2011 high flows.

232 *Jason Farnsworth presentation:*

- 233 - Farnsworth showed time lapse photography collected at Rowe Sanctuary
- 234 (Plattebasintimelapse.org) before, during, and after the October 2013 high-flow event.



235 Central Platte River Habitat and Comparison to Other Systems

236 *Jason Farnsworth presentation:*

- 237 - Galat - Chapters 1-3 are incredibly useful for debunking key assumptions of the Program:
- 238 ○ 5,000 to 8,000 cfs won't build sandbars of appropriate height and area to sustain
- 239 terns and plovers
- 240 ○ Won't build sandbars to the level of peak discharge
- 241 ○ Sandbars that are there will not be there for enough time
- 242 ○ Average sandbar area is smaller than any other area where birds are nesting
- 243 ○ Sandbars of appropriate height (and possibly area) will not be built due to larger
- 244 grain size of sediment
- 245 - Marmorek – In a dry year could the Program use all of the environmental Account water
- 246 to implement an SDHF and for other flow releases? Farnsworth – Yes.
- 247 - Hoeting – Concern about regression, not buying results. Farnsworth – will talk offline and
- 248 fix accordingly.
- 249 - Runge – Long absence of nests on central Platte, need many years to see what happens
- 250 between off channel and on channel habitat. Jenniges – Kirsch monograph says no habitat
- 251 selection, birds use sandpits or river, whatever is available. Farmer – Is there enough data
- 252 on central Platte to determine if in channel habitat is a population sink? Baasch – Not
- 253 enough data.
- 254 - Bledsoe – How sensitive are percentages to assumption of 1.5 feet above 1,200 cfs?
- 255 Farnsworth – very sensitive. That criterion came out of Ziewitz et al. (1992) and the value
- 256 of 1,200 cfs came out of an administrative decision. This is solely inundation, does not
- 257 consider 1.5' above 1200 cfs. Runge – need to look more at nest initiation instead of
- 258 inundation. Farnsworth - Even bars built at 10,000 to 13,000 cfs on the central Platte would
- 259 be susceptible to frequent inundation; problem is that peak flow arrives about the same
- 260 time the birds do on the central and lower Platte River.
- 261 - Andrews – Could the Program shift water so that you get higher peak flows in the spring
- 262 and have lower flows in the summer (say 800 cfs)? Rabbe – Can't increase flow above
- 263 8,000 cfs without flooding people; 8,000 cfs is bankfull discharge. Farnsworth – Limited
- 264 amount of ability to manipulate summer flows; J2 reregulating reservoir will provide more
- 265 control. Bledsoe – When J2 comes along, can you manipulate the falling limb of the
- 266 hydrograph to make it sharper? Farnsworth – With J2, the Program should have the ability
- 267 to release 2,000 cfs on top of other flows in the channel and may be able to influence the
- 268 falling limb. Drain – The drop off rate is usually very slow from natural floods. Get sharper
- 269 drops when irrigation flows open up, but no bars form.
- 270 - Jenniges – SEDVEG assumed that bars build to the water surface elevation. Andrews – If
- 271 you have suspended bed material like fine sand (0.2 - 0.4mm), then it can be carried from
- 272 upstream and deposited on top of bar so the bars will build to the level of the peak stage; if
- 273 you have bed load the dune migration never makes it up that high; other systems with
- 274 higher bars have smaller sized particles that can build up in the water column; bed particle
- 275 size on the central Platte is larger so it can't be built to the water surface as hypothesized.
- 276 Drain – Sandbars move like dunes on the central Platte River, grain size is probably a big
- 277 reason for the differences in the pictures between systems. Farnsworth – Many bars were
- 278 created in 2010 high flow event of 120,000 cfs on the Lower Platte, but were under water



- 279 in 2011 at 36,000 cfs. Marmorek – would need to massively oversupply sediment to shift
280 grain size.
- 281 - Mike Drain: Why would more flow during the summer help? Wouldn't it make it harder
282 to keep bars dry? Farnsworth – Going from wetter to dryer years seems to increase the
283 duration of the success window, but when the river is very low (240 cfs) birds don't tend
284 to nest on islands on the central Platte because they are attached to the bank and there's
285 no barrier to predators. Baasch – More flow would moat islands and provide a predator
286 barrier.
- 287 - Runge – Limiting factor for initiation is bar size and birds on other river systems seem to
288 select for larger bars in wider channels. Farnsworth – More indication for selection in LPR,
289 but inundation risk is about the same. Sandbars in Loup and lower Platte River are 30-50
290 acres in size and often are attached to bank, but are large enough that predation is lower.
291 Largest bars in CPR are about 1.5 acres. Marmorek and Bledsoe – Could you build very
292 large, very high bars on the central Platte? Farnsworth – The problem is that these are not
293 as stable as naturally built bars. Jenniges – When we build large bars they get vegetated,
294 eroded, attached to banks, or become turtle nesting areas that predators key on. Rabbe –
295 need to consider whooping cranes also.
- 296 - Drain – How often did birds naturally have islands created and then survive inundation.
297 Runge – Based on work on the Missouri River, the birds tend to be resilient enough to
298 survive if they do well in just a few years. On Loup River, high flows have generated high
299 bars that don't get inundated. Baasch – If successful reproduction occurred in 3/10 years
300 you'd need fledging rates of 2.1 for terns and 3.4 for plovers to meet the Lutey 2001 annual
301 objectives. Farnsworth – Lots of transitions from very narrow to very wide on the Niobrara
302 River which is often where sandbars form. In CPR, 30-40% flow is in side channels.
- 303 - Runge – A University of Nebraska study in the 1960's (Horn and Chilko) found that the
304 mesoform scale structure in LPR was changing. Norman Smith looked at LPR and
305 identified transverse bars which he found had finer sediment grain size. Important to
306 understand what bars the birds are using (transverse vs. longitudinal). Sherfy – Variation
307 in composition of sediment can affect bird selection of habitat. Runge – Horn and Norman
308 Smith papers need to be addressed as well as the Skelly document on the Niobrara; need
309 to integrate all of these papers or else this isn't an adequate synthesis. Farnsworth – We
310 didn't want to touch the Horn and Chilko papers because there are serious problems with
311 them.

312
313

314 **APRIL 23 ISAC/TAC/EDO Lower Platte River Tour**

- 315 - No minutes/notes recorded.

316
317

318 **April 24 ISAC & ISAC/EDO Discussions**

- 319 - See ISAC Summary Report