

1. Review last meeting (NH)
2. City planning issues (NH)
3. Review information from Colorado publication (ems)
4. Natural resource impacts of additional trail construction (ems)
5. Wildlife use at Smith-Bybee (focus on sensitive species & habitats) (ems)
6. Review trail alignments from various planning processes (ems)
7. Bicycle conflict information (ems)
8. Siting criteria and best management practices (initial discussion) (NH)

Trail subcmte

11-20-02

Denise Rennis, Troy Clark, Holly Michael,
Nancy Hendrickson, Jim Sjuliu, Pam Arden

City planning issues

1. Comp plan v. NRMP - OPDR does not know how to resolve conflicts - per OPDR 11/20/02 to NH.

Sjuliu - asked OPDR some ques. some time ago but got dif answer - that NRMP trumped

✓ need to present preferred alignment & then OPDR can decide

2. Muddled answer from OPDR

3. Change/integrate new info - this is via legislative process.

Trail - criteria - objectives

- objectives in comp. plan re wildl. & trails (WTH)
- 40-mi loop master plan (early 80s)
- Col. document

Denise - criteria ideas

- site along edge habitat (don't create new edge)
- site where already receiving disturbance from recreation

Jim -

- connectivity of trails

NH -

- spurs where you want lower traffic

Holly -

- minimize impacts to riparian hab.

Troy -

- no wetland fill

Denise -

- what do you want users to get out of trail - go thru dif habs & educate?

Holly -

- what are people coming to SB for? e.g. biking for health & pass thru, or coming to see site itself

Troy -

- keep education focused @ one spot

Jim -

- alignments have to be truly viable
(e.g. too many property owners?)

NH -

- look @ broad area - where else do trails go, where is riparian area

Next: Tue. 12/3 @ metro 3:30-5:30

ems

summarize info & get it out

Principles from Colorado State Parks trail planning publication

General concepts:

- Any trail will have at least some negative impact, which must be weighed with the benefits of the trail.
- Consider the wider area of influence, not just the limits of the trail itself.
- It is easier to balance competing wildlife and recreation needs across a region than on a specific trail project in a smaller area.
- Riparian areas play a disproportionately large role in maintaining biodiversity.
- Give trail users the opportunity to be near water or they will find ways themselves.
- It is better to concentrate recreational use rather than disperse it.

Aligning trails:

- Align a trail along or near an existing habitat edge; don't fragment habitat.
- Keep a trail and its zone of influence away from sensitive habitat.
- Leave large, undisturbed areas of wildlife habitat untouched.
- Keep the density of trails lower within and near high-quality habitat.
- Minimize the number of times prominent landscape corridors – such as riparian zones – are crossed by a trail.
- Route a trail through varied habitat types to enrich user experiences, but avoid small patches of species-rich habitats.
- It is better to run a trail outside the riparian area and bring it in at strategic points than to keep it continuously close to a riparian area.
- Minimize the number of times a trail crosses a stream.
- Avoid crossings where two or more streams come together.
- When it is appropriate to provide access to a more sensitive area, use a spur trail instead of a through trail because spur trails tend to have lower traffic volumes.
- Either avoid wildlife breeding areas or close trails through them at strategic times.

Building and managing trails:

- Disturb as narrow an area as possible when building a trail.
- Maintain an interior or upland buffer on both sides of a stream.
- Don't assume all wildlife impacts can be resolved through management. There may be situations where the negative impacts outweigh the benefits and trail should take a different alignment.
- If there won't be sufficient enforcement of trail closures, route the trail through another area.
- Don't depend on management to resolve wildlife conflicts that can be avoided by careful alignment.

• p. 30 - cumulative impacts s/b evaluated

Natural Resource Impacts of Trails

Wildlife Disturbance

- Energy use due to moving away
- Competitive advantage to those less disturbed (eagle-crow-gull example)
- Nest failures can increase (*predation, exposure*)
- Loss of nesting habitat for species that won't nest near disturbance
- Loss of use of habitat due to excessive disturbance (*N harrier, Swainson's thrush*)
- Can alter species richness, abundance and composition in wildlife communities - *spec. to gen.*
- Recreationists with dogs cause more disturbance than those without dogs
- Rapid movement causes more disturbance than slower movement
- Direct approach causes more disturbance than peripheral/tangential approach
- Unpredictable movement causes more disturbance than predictable movement

Habitat Fragmentation

- Reduction of interior forest habitat for those who depend on it (*e.g. Swainson's thrush - focal sp @ SBLWA*)
- Reduction of patch size for size-dependent species
- Reduce/eliminate movement for species that don't cross openings - *amphibs?*
- Increased edge with change in habitat (light, wind, moisture, etc.)
- Introduction of generalists that compete with specialists for food, nest sites, etc.
- Increased nest parasitism and predation for songbirds (especially cowbird parasitism on songbirds using riparian habitat) - *willow flycatcher & yellow warbler @ SBLWA*
- Introduction of predators that now can encroach into habitat
- Most severe impact for riparian habitat because of wildlife dependence on it

Invasive Plants

- Introduction of invasive plant species into habitat - *no exotics decr. w/ dist. into hab.*
- Human dispersal of invasives (seeds on boots, tires, etc.)

Vegetation and Soil

- Trampling and loss of vegetation (loss of species and loss of cover)
- Soil compaction
- Erosion
- Loss of vegetation and soil compaction in area of disturbance (for trail construction)
- Loss of trees and/or canopy due to hazard limb and tree removal

Weekly Bird Counts
South Side Smith Lake

| | <u>1998 counts</u> | | <u>1999 counts</u> | | <u>2000 counts</u> | | <u>Total</u> | |
|-----------------------------|--------------------|-------------|--------------------|-------------|--------------------|-------------|--------------|-------------|
| | # birds | # sightings | # birds | # sightings | # birds | # sightings | # birds | # sightings |
| American Coot | 598 | 21 | 240 | 23 | 93 | 12 | 931 | 56 |
| American Crow | 234 | 30 | 225 | 29 | 142 | 29 | 601 | 88 |
| American Goldfinch | 69 | 21 | 95 | 21 | 111 | 21 | 275 | 63 |
| American Pipit | | | | | 6 | 2 | 6 | 2 |
| American Robin | 301 | 34 | 466 | 35 | 316 | 39 | 1083 | 108 |
| American Wigeon | 64 | 11 | 165 | 11 | 219 | 9 | 448 | 31 |
| Anna's Hummingbird | | | 2 | 1 | | | 2 | 1 |
| American Avocet | | | | | 1 | 2 | 1 | 2 |
| Bald Eagle | 17 | 12 | 11 | 8 | 38 | 21 | 66 | 41 |
| Barn Swallow | 672 | 18 | 138 | 17 | 173 | 16 | 983 | 51 |
| Belted Kingfisher | 36 | 20 | 23 | 16 | 6 | 6 | 65 | 42 |
| Bewick's Wren | 90 | 34 | 94 | 38 | 96 | 37 | 280 | 109 |
| Black-capped Chickadee | 208 | 35 | 243 | 39 | 228 | 39 | 679 | 113 |
| Black-headed Grosbeak | 44 | 8 | 23 | 9 | 23 | 11 | 90 | 28 |
| Black-throated Gray Warbler | 8 | 2 | 5 | 1 | 1 | 2 | 14 | 5 |
| Blue-winged Teal | 2 | 1 | | | | | 2 | 1 |
| Bonaparte's Gull | | | | | 1 | 2 | 1 | 2 |
| Brewer's Blackbird | 150 | 1 | 218 | 7 | 47 | 4 | 415 | 12 |
| Brown-headed Cowbird | 70 | 10 | 107 | 13 | 95 | 14 | 272 | 37 |
| Brown Creeper | 40 | 23 | 58 | 33 | 27 | 21 | 125 | 77 |
| Bufflehead | 25 | 7 | 94 | 11 | 42 | 13 | 161 | 31 |
| Bullock's Oriole | 29 | 8 | 27 | 8 | 18 | 7 | 74 | 23 |
| Canada Goose | 1381 | 27 | 2733 | 29 | 3683 | 33 | 7797 | 89 |
| Canvasback | | | 2 | 1 | | | 2 | 1 |
| Caspian Tern | 12 | 5 | 130 | 4 | 1 | 2 | 143 | 11 |
| Cedar Waxwing | 341 | 20 | 278 | 17 | 122 | 18 | 741 | 55 |
| Chestnut-backed Chickadee | | | 2 | 1 | | | 2 | 1 |
| Cliff Swallow | 29 | 6 | 56 | 11 | 34 | 6 | 119 | 23 |
| Common Bushtit | 146 | 12 | 135 | 24 | 176 | 20 | 457 | 56 |
| Common Merganser | 27 | 5 | 24 | 6 | 96 | 8 | 147 | 19 |
| Common Yellowthroat | 49 | 19 | 67 | 18 | 36 | 15 | 152 | 52 |
| Cooper's Hawk | 2 | 2 | 2 | 2 | | | 4 | 4 |
| Dark-eyed Junco | 13 | 3 | 4 | 2 | 9 | 4 | 26 | 9 |
| Double-crested Cormorant | 441 | 27 | 889 | 30 | 544 | 29 | 1874 | 86 |
| Downy Woodpecker | 88 | 30 | 81 | 32 | 84 | 35 | 253 | 97 |
| Dunlin | | | | | 50 | 2 | 50 | 2 |
| Dusky Flycatcher | 1 | 1 | | | | | 1 | 1 |
| Eurasian Wigeon | 501 | 34 | | | | | 501 | 34 |
| European Starling | 1 | 1 | 644 | 39 | 3106 | 40 | 3751 | 80 |
| Fox Sparrow | 10 | 6 | | | 8 | 8 | 18 | 14 |
| Gadwall | 44 | 14 | 20 | 7 | 33 | 10 | 97 | 31 |
| Glaucous-winged Gull | 13 | 8 | 55 | 12 | 11 | 8 | 79 | 28 |
| Golden-crowned Kinglet | 13 | 8 | 24 | 10 | 32 | 12 | 69 | 30 |
| Golden-crowned Sparrow | 42 | 12 | 50 | 17 | 61 | 11 | 153 | 40 |
| Common Goldeneye | | | 2 | 1 | | | 2 | 1 |
| Great Blue Heron | 92 | 34 | 96 | 39 | 582 | 38 | 770 | 111 |
| Great Egret | 70 | 5 | 163 | 4 | 46 | 5 | 279 | 14 |
| Great Horned Owl | 3 | 2 | 5 | 5 | 6 | 6 | 14 | 13 |
| Green Heron | 1 | 1 | | | | | 1 | 1 |
| Green-winged Teal | 65 | 13 | 56 | 8 | 1131 | 17 | 1252 | 38 |
| Harris's Sparrow | 2 | 2 | 1 | 1 | | | 3 | 3 |
| Hermit Thrush | 4 | 3 | 2 | 2 | 3 | 4 | 9 | 9 |
| Hooded Merganser | 12 | 3 | 13 | 4 | 11 | 2 | 36 | 9 |
| Hooded Oriole | | | 5 | 1 | | | 5 | 1 |
| House Finch | 213 | 29 | 222 | 29 | 136 | 26 | 571 | 84 |
| House Sparrow | 21 | 12 | 10 | 7 | 14 | 9 | 45 | 28 |
| House Wren | 40 | 15 | 26 | 13 | 24 | 12 | 90 | 40 |

Weekly Bird Counts
South Side Smith Lake

| | <u>1998 counts</u> | | <u>1999 counts</u> | | <u>2000 counts</u> | | <u>Total</u> | |
|-------------------------------|--------------------|-------------|--------------------|-------------|--------------------|-------------|---------------|-------------|
| | # birds | # sightings | # birds | # sightings | # birds | # sightings | # birds | # sightings |
| American Kestrel | | | 2 | 2 | 2 | 3 | 4 | 5 |
| Killdeer | 65 | 13 | 50 | 18 | 67 | 19 | 182 | 50 |
| Lesser Scaup | 625 | 7 | 749 | 8 | 135 | 4 | 1509 | 19 |
| Long-billed Dowitcher | | | | | 412 | 5 | 412 | 5 |
| MacGillivray's Warbler | | | | | 1 | 2 | 1 | 2 |
| Mallard | 549 | 36 | 1187 | 40 | 2052 | 36 | 3788 | 112 |
| Marsh Wren | 4 | 4 | 66 | 21 | 87 | 18 | 157 | 43 |
| Mew Gull | | | | | 62 | 8 | 62 | 8 |
| Mourning Dove | 98 | 18 | 69 | 27 | 100 | 28 | 267 | 73 |
| Northern Flicker | 64 | 30 | 41 | 26 | 43 | 26 | 148 | 82 |
| Northern Harrier | | | 1 | 1 | 1 | 2 | 2 | 3 |
| Northern Shoveler | 209 | 14 | 236 | 19 | 375 | 20 | 820 | 53 |
| Northern Shrike | | | 4 | 4 | | | 4 | 4 |
| Olive-sided Flycatcher | 1 | 1 | | | | | 1 | 1 |
| Orange-crowned Warbler | 6 | 5 | 1 | 1 | 4 | 4 | 11 | 10 |
| Osprey | 43 | 19 | 43 | 20 | 37 | 17 | 123 | 56 |
| Pacific-slope Flycatcher | | | 7 | 2 | 11 | 6 | 18 | 8 |
| ★ Peregrine Falcon | | | 2 | 2 | 6 | 7 | 8 | 9 |
| Pied-billed Grebe | 13 | 9 | 7 | 6 | 10 | 7 | 30 | 22 |
| Northern Pintail | 12 | 4 | 35 | 2 | 7 | 4 | 54 | 10 |
| Red-tailed Hawk | 75 | 34 | 82 | 38 | 94 | 40 | 251 | 112 |
| Red-winged Blackbird | 88 | 21 | 51 | 18 | 48 | 19 | 187 | 58 |
| Ring-necked Duck | 7 | 2 | 10 | 2 | 1 | 2 | 18 | 6 |
| Ring-billed Gull | 72 | 10 | 257 | 27 | 468 | 26 | 797 | 63 |
| Rock Dove | 56 | 19 | 77 | 23 | 97 | 17 | 230 | 59 |
| Rough-winged Swallow | 3 | 2 | 1 | 1 | | | 4 | 3 |
| Ruby-crowned Kinglet | 59 | 17 | 68 | 18 | 67 | 22 | 194 | 57 |
| Ruddy Duck | 26 | 4 | 23 | 7 | 29 | 9 | 78 | 20 |
| Rufous Hummingbird | | | | | 2 | 3 | 2 | 3 |
| Savannah Sparrow | 6 | 1 | 2 | 2 | 2 | 2 | 10 | 5 |
| Scrub Jay | 51 | 24 | 42 | 25 | 54 | 26 | 147 | 75 |
| Sharp-shinned Hawk | 1 | 1 | 6 | 5 | 3 | 4 | 10 | 10 |
| Song Sparrow | 647 | 36 | 739 | 39 | 768 | 40 | 2154 | 115 |
| Spotted Sandpiper | 3 | 3 | 3 | 3 | 7 | 8 | 13 | 14 |
| Spotted Towhee | 17 | 11 | 16 | 10 | 14 | 12 | 47 | 33 |
| Steller's Jay | 3 | 1 | 7 | 6 | 12 | 11 | 22 | 18 |
| Swainson's Thrush | 14 | 6 | 22 | 9 | 15 | 10 | 51 | 25 |
| Tree Swallow | 219 | 16 | 208 | 15 | 446 | 17 | 873 | 48 |
| Tundra Swan | 41 | 2 | 10 | 1 | 8 | 3 | 59 | 6 |
| Turkey Vulture | | | 2 | 2 | 1 | 2 | 3 | 4 |
| Varied Thrush | 9 | 4 | 5 | 4 | 3 | 4 | 17 | 12 |
| Vaux Swift | 129 | 15 | 73 | 14 | 25 | 11 | 227 | 40 |
| Violet-green Swallow | 10 | 5 | 11 | 5 | | | 21 | 10 |
| Warbling Vireo | 1 | 1 | 2 | 2 | 4 | 3 | 7 | 6 |
| Western Grebe | 3 | 1 | 4 | 3 | 1 | 2 | 8 | 6 |
| Western Sandpiper | 15 | 3 | 2 | 1 | 318 | 8 | 335 | 12 |
| Western Tanager | 22 | 5 | 2 | 2 | 5 | 5 | 29 | 12 |
| Western Wood-Pewee | 44 | 13 | 73 | 15 | 60 | 14 | 177 | 42 |
| White-crowned Sparrow | 6 | 4 | | | | | 6 | 4 |
| American White Pelican | | | | | 4 | 2 | 4 | 2 |
| ★ Willow Flycatcher | 16 | 10 | 31 | 13 | 38 | 6 | 85 | 29 |
| Wilson's Warbler | 17 | 6 | 4 | 1 | 8 | 7 | 29 | 14 |
| Wood Duck | 14 | 6 | 10 | 6 | 2 | 2 | 26 | 14 |
| Yellow-breasted Chat | 1 | 1 | | | | | 1 | 1 |
| Yellow-rumped Warbler | 104 | 15 | 44 | 8 | 43 | 13 | 191 | 36 |
| Yellow Warbler | 100 | 15 | 112 | 14 | 78 | 13 | 290 | 42 |
| Total birds or species | 9,902 | 93 | 12,530 | 96 | 17,859 | 96 | 40,291 | 113 |

Sensitive Species at Smith and Bybee Lakes Wildlife Area

Anodonta californiensis (California floater, a mussel)

Where found: throughout Smith and Bybee lakes and the channel between them

When found: year-round resident

ONHP status: list 3 (status undetermined, more information needed)

Federal status: species of concern (under review as possible ESA candidate)

Chrysemys picta (western painted turtle)

Where found: mostly in ponds and sloughs on north and west sides of wildlife area

When found: year-round resident

ODFW status: sensitive-critical (listing as threatened or endangered is pending, or may be appropriate if immediate conservation action not taken)

ONHP status: list 2 (threatened with extirpation)

Federal status: none

Empidonax traillii brewsteri (little willow flycatcher)

Where found: nests along the south sides of Bybee and Smith lakes, to a lesser extent in the shrub-scrub on the peninsula between the lakes

When found: during breeding season

ODFW status: sensitive-vulnerable (listing as threatened or endangered can be avoided with protection efforts and monitoring)

ONHP status: list 4 (of conservation concern and requiring continued monitoring)

Federal status: none

Falco peregrinus anatum (American peregrine falcon)

Where found: hunts in open areas, particularly on the landfill and the south side of Smith Lake

When found: year-round (breeding and wintering birds)

ODFW status: listed endangered

ONHP status: list 2 (threatened with extirpation)

Federal status: none

Haliaeetus leucocephalus (bald eagle)

Where found: hunts in open areas of both lakes including the slough between them

When found: year-round (breeding, juvenile and wintering birds)

ODFW status: listed threatened

ONHP status: list 2 (threatened with extirpation)

Federal status: listed threatened

Sturnella neglecta (western meadowlark)

Where found: St. Johns Landfill

When found: late summer through winter (breeding not documented in recent years)

ODFW status: sensitive-critical (listing as threatened or endangered is pending, or may be appropriate if immediate conservation action not taken)

ONHP status: list 4 (of conservation concern and requiring continued monitoring)

Federal status: none

✓ = found at Smith-Bybee

Riparian and other habitat requirements of representative species that inhabit the Columbia Slough watershed. Riparian widths refer to that needed for core habitat. Minimum corridor width (on each side of stream) is typically regarded as 50 feet.

| Species or group | Status (fed, state) | Preferred riparian width (feet) | Other habitat requirements |
|--|---------------------------------|---------------------------------|---|
| ✓ (North Slough, Col. Slough) Salmonids (Coho and Chinook salmon) | LT, SC | to 200 | Juveniles require large woody debris for cover. |
| Cutthroat trout | | 50-200 | |
| Red-legged frog | SoC, SV/SU | 100 | Well-shaded ponds adjacent to woodlands; stems for attaching egg masses. |
| ✓ Turtle (painted or pond) | Painted = SC, pond = SoC, SC | 350 | Basking logs; nesting sites sparsely vegetated with sunny exposure; low human disturbance. |
| ✓ Great blue heron | | 600 | Large trees for rookeries. |
| ✓ Neotropical migrants (songbirds) | | 330 | |
| ✓ Willow flycatcher (neotropical migrant) | SV | 125 | Scrub-shrub habitat away from urban and cowbird areas. |
| ✓ Red-eyed vireo (neotropical migrant) | | 165 | Large cottonwoods, high degree of canopy closure with young trees recruiting. |
| ✓ Yellow warbler (neotropical migrant) | | | Good shrub and subcanopy layers, high habitat heterogeneity. |
| ✓ Swainson's thrush (neotropical migrant) | | | Dense understory/shrub layer; low recreational disturbance. |
| ✓ Belted kingfisher | | 100-200 | Snags in open water. |
| ✓ Western meadowlark | SC | | Low grasslands; 20 acres per pair, 100 acres for population. |
| ✓ Northern harrier | | | Upland and wet prairie; grasslands not mowed before July 1st; nest more than 1/4 mile from human disturbance; 400 acres for home range. |
| ✓ American kestrel | | | Savannah habitat; large trees with cavities for nesting. |
| ✓ Downy woodpecker | | | Snags more than 10 in. diameter for nesting. |
| ✓ Deer | | 200 | Vegetation suitable for browsing. |
| ✓ Beaver | | 300 | Trees less than 1 ft. diameter. |

LT = federally listed threatened species

SoC = federal species of concern

SC = state listed sensitive/critical; species for which listing as threatened or endangered is pending, or those for which listing as threatened or endangered may be appropriate if immediate action is not taken.

SV = state listed sensitive/vulnerable; species for which listing as threatened or endangered is not imminent and can be avoided through continued or expanded use of adequate protective measures and monitoring.

SU = state listed sensitive/undetermined status.

Jim - this is a fairly old, undated map but it's easier to use than piecing BDS zoning this alignment. Recall that NRMP supersedes this alignment.



Trail alignment
Camp plan
from Jim Sjulian
11-02