

**From:** [Thomas, Sue](#)  
**To:** [Sollmann, Lorenz](#)  
**Subject:** timelines  
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**Attachments:** [DNWR Wildlife Abd-Timing.docx](#)  
[OR WA ShorebirdMigTimeline.xls](#)

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### Timing

Definitively identifying timing is difficult because the migration and overwintering period vary by species based on weather, fitness and productivity. Published data sources and Dungeness NWR data vary accordingly. Below is a chart showing when wildlife use the Refuge by two week increments (J = Jan 1-14, next cell to right = Jan 15-31).

|  | J |  | F |  | M |  | A |  | M |  | J |  | J |  | A |  | S |  | O |  | N |  | D |  |
|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|---|--|
| Pacific herring (spawn) <sup>1</sup>     |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |
| Pacific sand lance ("") <sup>1</sup>     |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |
| Puget Sound surf smelt ("") <sup>1</sup> |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |
| Brant <sup>2</sup>                       |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |
| Other Waterfowl <sup>3</sup>             |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |
| Shorebirds <sup>4</sup>                  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |
| Public Use Closure                       |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |
| Hunting (adj land/waters)                |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |   |  |

<sup>1</sup> Pentilla 2007, PSWQAT 2001 <sup>2</sup> Wilson and Atkinson 1997, DNWR data, <sup>3</sup> Birds of North America accounts, DNWR data, <sup>4</sup> Paulson 1993, DNWR data

|                        |                         |                    |                  |
|------------------------|-------------------------|--------------------|------------------|
| Key Refuge use periods | Designated work windows | Public Use Closure | Mig Bird Hunting |
|------------------------|-------------------------|--------------------|------------------|

## Background

### Shorebirds - mid May – mid July

- Migration – March – mid May (peak in late Apr) & July – October;
- Winter - October – February (Paulson 1993, DNWR data)

### Brant – mid May – mid October

- Migration – March – mid May, (peak in Apr) & mid October – early November;
- Winter - November – February (Wilson and Atkinson 1997, DNWR data)

### Waterfowl – May – mid October

- Migration February – March & October;
- Winter – November – February;

## Birds of North America Accounts – Migration Periods

### Shorebirds

Dunlin – Apr – early May; begins mid Sept, peak mid Oct

Western Sandpiper – mid Apr – mid May (peak late Apr/early May); mid July – mid Sept (peak Aug ad/Sept juv)

Least Sandpiper - – mid Apr – mid May (peak late Apr/early May); mid July – mid Sept (peak Aug ad/Sept juv)

Black-bellied Plover – peak late Apr (?Apr- mid May); July – Oct (ad peak mid Aug, juvie peak mid Sept)

Sanderling – Apr – May (peak late Apr, early May); mid Aug – mid Oct

#### Waterfowl

Brant – Mar – Apr; Oct - Nov

Mallard – no Pac Coast data

Am Wigeon – late Feb – March; starts in Aug, peak Oct/Nov

Northern Pintail – Feb-Mar, peak early Mar; Aug start, Sept-Oct peak

### **Spring Time Frames (Refuge Data)**

#### Shorebirds

- ~125 Sanderling, 75 Dunlin 5/1/2013; [Dunlin – 1800 & 2250 Western Sandpiper/Least Sandpiper 5/1/14](#) #s dwindled through 5/7/14 (2012-2018)
- Dunlin –present but low #s May (4/2010-3/2013)

#### Waterfowl

- BRANT – 500+ w/ #s increasing in Apr (2010-13) vs 2800 Brant in Apr and 130-1000 mid May (1994-99); present in low #s in May (1987)
- Waterfowl #s few in Apr, ~100/sp and early May (1987)

### **Fall Time Frames (Refuge Data)**

#### Shorebirds

- Dunlin – present in Aug, [#s incr in Oct](#) (4/2010-3/2013; no surveys July, Sep)
- Black-bellied Plover - #s present in Oct 2001, incr to 490 in Feb 2002; Dunlin - #s present in Oct, incr to 1500 in Feb, Sanderling – 222 in Nov, 135 in Feb (2002-2003; Oct – Feb surveys)
- ~2000 [Western Sandpiper](#), 400 [Sanderling](#), 250 [Black-bellied Plover - mid Sept](#) (1994-99)
- Black-bellied Plover – high counts: [290 - 8/31/93](#); [220 - 9/27/93](#) (1993 Aug – Sep surveys)
- Sanderling – [680 - 8/31/93](#), 773 - 9/10/93; Semipalmated Plover –53 - 8/30/93; [Western Sandpiper – 420 - 8/31/93](#). 252 - 9/15/93 (1993)
- Sanderling & Western Sandpiper #s in low hundreds mid Sep, ~20 Dunlin, #s increase in Oct (1987)

#### Waterfowl

- Waterfowl – 2001 – numbers begin to pick up in early Nov, increase through Jan, decrease into Feb (2002-2003 Legacy; Oct – Feb surveys)
- MALL, AMWI #s pick up from 50-100/sp in Sep to [Hundreds/sp in Mid-Oct](#) (1994-99 Legacy)

**WASHINGTON PEAK PERIODS<sup>a</sup>**

| Species | Peak Adult Fall Periods | Seasonal Abundance Fall <sup>b</sup> | Peak Spring Periods | Seasonal Abundance Spring <sup>b</sup> | Comments  |
|---------|-------------------------|--------------------------------------|---------------------|--|---|
| BBPL    | 8/1-9/15                | 1                                    | 4/1-5/15            | 1                                      | Mainly juveniles in fall                                    |
| AGPL    | 8/1-8/30                | 4                                    | 4/15-5/15           | 8                                      | Mainly juveniles, solitary                                  |
| PGPL    | 8/1-8/30                | 4                                    | 4/15-5/15           | 8                                      |   |
| SEPL    | 6/1-8/15                | 2                                    | 4/15-5/15           | 2                                      |   |
| SNPL    |                         | 5                                    |                     | 5                                      | Breeding  |
| KILL    |                         | 4                                    | 2/15-3/30           | 4                                      | Residential, No mass movement during the fall               |
| BLOY    |                         | 5                                    |                     | 5                                      | Residential, no mass movement                               |
| AMAV    |                         | 8                                    |                     | 8                                      | Mainly interior   |
| BNST    |                         |                                      |                     | 7                                      | Mainly interior   |
| GRYE    | 7/1-10/15               | 3                                    | 3/15-5/5            | 3                                      | Widely scattered, occ'l large flocks                        |
| LEYE    | 7/1-7/31                | 5                                    | 4/15-5/15           | 7                                      | Mainly juveniles  |
| SOSA    | 7/1-7/31                | 7                                    | 4/15-5/15           | 6                                      | Mainly interior, small groups                               |
| WILL    | 7/1-10/15               | 7                                    | 4/15-5/31           | 7                                      |   |
| SPSA    | 7/15-8/31               | 6                                    | 4/21-5/21           | 6                                      | Solitary, breeding  |
| WHIM    | 7/21-10/5               | 3                                    | 4/15-5/15           | 3                                      |   |
| LBCU    |                         | 7                                    |                     | 7                                      | Mainly interior   |
| MAGO    | 7/1-10/31               | 5                                    | 4/15-5/15           | 5                                      | Occ'l large flocks  |
| RUTU    | 7/15-8/31               | 5                                    | 4/15-5/15           | 4                                      | Mainly adults   |
| BLTU    |                         | 4                                    |                     | 4                                      | Difficult to distinguish betw migrants and winter residents |
| WATA    | 7/15-8/21               | 5                                    | 4/21-5/31           | 5                                      | Solitary  |
| SURF    | 7/1-9/15                | 4                                    | 4/15-5/15           | 4                                      | No mass movement  |
| ROSA    |                         | 5                                    |                     | 5                                      | No mass movements - migrant & winter resident               |
| REKN    | 7/1-8/21                | 6                                    | 4/21-5/21           | 3                                      | Localized, solitary or sm groups                            |
| SAND    | 7/15-9/15               | 1                                    | 4/15-5/31           | 1                                      |   |
| DUNL    | 10/1-12/31              | 1                                    | 4/5-5/15            | 1                                      | Adults and Juvs move at the same time                       |
|         |                         |                                      |                     |  |   |
| PESA    | 7/15-8/15               | 4                                    | 4/21-5/31           | 7                                      | Uncommon  |
| BASA    |                         | 5                                    | 4/5-5/15            | 7                                      | Interior, Mainly juveniles                                  |
| WESA    | 6/21-8/5                | 1                                    | 4/15-5/15           | 1                                      |   |
| SESA    | 6/21-8/5                | 6                                    | 4/21-5/31           | 7                                      | Solitary or in sm groups                                    |
| LESA    | 7/5-10/5                | 3                                    | 4/15-5/15           | 3                                      | Widely distributed  |
| SBDO    | 6/21-7/15               | 1                                    | 4/5-5/15            | 1                                      |   |
| LBDO    | 7/15-9/15               | 3                                    | 4/15-5/15           | 4                                      |   |
| COSN    | 9/1-11/5                | 5                                    | 3/21-5/5            | 6                                      | Secrative & dispersed                                       |
| WIPH    |                         | 7                                    |                     | 6                                      | Mainly interior   |
| REPH    | 8/15-9/15               | 2                                    | 5/15-6/15           | 5                                      | Offshore migrant  |
| RNPH    | 7/1-9/15                | 3                                    | 5/1-5/31            | 2                                      | Mainly an offshore migrant                                  |

<sup>a</sup> Taken from Wahl, T.R. and D.R. Paulson. 1991 ed. A Guide to Bird Finding in Washington, and adjusted with data from Paulson, D. 1998. Shorebirds of the Pacific Northwest. Paperback ed. when there was no clear demarkation between winter and migrant periods.

<sup>b</sup> Taken from Larsen, E.M. and N. Nordstrom, eds. Management Recommendations for Priority Species (Vol 4)" Washington Department of Fish and 1. Very Abundant - >1,000 /day; 2. Abundant - 200-1,000/day; 3. Very Common - 50-200/day; 4. Common - 20-50/day; 5. Fairly Common - 7-20/day; 6. Uncommon - 1-6/day; 7. Very Uncommon - >6/season, not observed every day; 8. Rare - 1-6/year, not observed every day