



Prescott Bluebird Recovery Project Newsletter  
*An Affiliate of the North American Bluebird Society*

---

**Population Crash Threatens Western Bluebirds**

*Marilynne Keyser, Database Coordinator*

After five consecutive years of amazing growth, our western bluebirds experienced a population crash in 2002. Prescott nest boxes fledged only 1,232 young bluebirds, down 28% from 2001 when we fledged 1,715. The loss of 94 adult birds this year certainly contributed to the sharp decline in nesting attempts, which were down 24% from 591 in 2001 to 450 in 2002. Nest failures increased from 26% in 2001 to 30% in 2002.

We also had a decline in the percentage of eggs that hatched from 81% in 2001 to 74% in 2002. The only good news was the increase in the percentage of young bluebirds fledged from successful nest boxes, up from 71% in 2001 to 76% in 2002.

**BLUEBIRD NESTING RESULTS 1997–2002**

Prescott Data Elements	1997	1998	1999	2000	2001	2002
Nesting Attempts	273	398	389	457	591	450
Failed Attempts	55	137	119	103	156	137
% Successful	80%	66%	69%	77%	74%	70%
% Failed	20%	34%	31%	23%	26%	30%
Eggs Laid	1342	1964	1941	2323	2990	2187
Eggs per Attempt	4.9	4.9	5.0	5.1	5.1	4.9
Young Hatched	1115	1471	1480	1843	2409	1625
% Hatched	83%	75%	76%	79%	81%	74%
Young Banded	939	1198	1299	1629	1952	1356
% Banded	84%	81%	88%	89%	86%	83%
Young Fledged	972	1045	1159	1467	1715	1232
% Fledged	87%	71%	78%	80%	71%	76%
Available Boxes	800	1114	1200	1544	1725	1780
Attempts as % of Available Boxes	34%	36%	32%	30%	34%	25%
Number of Monitors	31	39	60	82	92	88

***Why the disappointing results?***

We don't really know the answer to this question. The weather was cold and wet early in the season, but it was no worse than the weather in some of the previous years. Necropsy evidence from Amber Keyser, Prescott's Research Coordinator, suggests that deadly bacterial infections related to the parasitic thorny-headed worm may be causing an increasing number of adult deaths (see related article on page 6).

Perhaps in some of our core area, the western bluebird population has reached its carrying capacity and adequate habitat and food items are not available. More research is required before we can make sense of this disappointing year for bluebirds in the northern Willamette Valley.

## Accomplishing our Goals

*Fred Robinson, President*

The greatest part of the Prescott Bluebird Recovery Project (PBRP) is that we are accomplishing our goals. Although this year was rather discouraging in terms of numbers of birds fledged, keep in mind that the overall population is much larger than when we began. This thing really works! The number of western bluebirds in the northern Willamette Valley has increased to the point that it is now fairly common to spot the beautiful birds in suburban areas.

The second great part of the project is the opportunity it provides for us to work with enthusiastic volunteers, generous homeowners, and other supporters. I have never worked with such a fine, dedicated, and conscientious group of people. It is just a real pleasure to be associated with you all. Thank you for being part of our project. Our success is directly attributable to you and your efforts.

The Prescott Bluebird Recovery Project is a non-profit 501C(3), all-volunteer organization dedicated to the recovery, restoration, and enhancement of the western bluebird in the northern Willamette Valley of Oregon.

**Please send all tax-deductible donations to:  
PBRP, P.O. Box 1469, Sherwood, OR 97140.  
Our tax identification number is 93-1021520.**

The PBRP Newsletter is available free by mail each spring and fall. To receive it, call 503.245.8449 and leave your name and address or read it online at [www.prescottbluebird.com](http://www.prescottbluebird.com).

**Many thanks to Michelle Kralik, Manager of Sherwood Mail Boxes Etc., for the generous donation of copying supplies and services.**

### **PBRP Steering Committee Members**

Fred Robinson, President  
Pat Johnston, Past President  
Brenda McGowan, Treasurer  
Corinne Stefanick, Secretary  
Dan Brown, Nest Box Coordinator  
Jim Conroy, Finance Coordinator  
Dave Flaming, Voice of Prescott  
Mark Jager, Web Master  
Amber Keyser, Research Coord., Master Bander  
Marilynne Keyser, Database Coordinator  
Lauri Kunzman, PR/Events Coordinator  
Gayle Mirkin, Speakers/Presentations Coordinator

## Bluebird Pair Celebrates Fifth Anniversary

*Marilynne Keyser, Database Coordinator*

On June 28, 2002, bander Lynn Krupa recaptured a pair of bluebirds at a nest box on property owned by Tony Skufka on Laurel Road, Hillsboro (box #652H507). Both birds were five years old and had been a mated pair since their first breeding season in 1998. The female (band #1531-65426) was banded as a nestling on July 18, 1997, at a nest box on property owned by Bruce and Madge Wendland on Mountain Home Road, Sherwood (683G402). She is the oldest female we have ever recovered. The male (1531-65277) was banded as a nestling on July 3, 1997, at a nest box on property owned by Meg and Jim Butler on Larkins Mill Road, Hillsboro (652H307).

In 1998 and 1999, the pair nested in the male's natal box at Butler's and fledged five offspring from one clutch each year. In 2000, 2001, and 2002, the pair nested at Skufka's and fledged eleven, eight, and five offspring respectively.

In total, this pair fledged a record thirty-four offspring. This is the longest "marriage" of western bluebirds that we have documented.

## NABS 2003 Convention: Bluebirds and Cranes

Bluebirds share the landscape with thousands of migrating sandhill cranes and several species of geese during the spring on the Platte River near Kearney, Nebraska. That's where the North American Bluebird Society Convention will be held March 20-23, 2003. The birds mass to feed and rest before moving north to nesting grounds for the summer, one highlight of the convention.

PBRP was recognized at the 2002 convention with a group achievement award, and we plan to send a member to Nebraska this spring.

All PBRP volunteers are encouraged to join NABS and attend the annual events. For more information, call PBRP, check our website, or the NABS site at [www.nabluebirdsociety.org](http://www.nabluebirdsociety.org).

## Volunteers Needed for 2003

The following volunteers are needed ASAP. To learn more, call 503.245.8449 and leave a message for each of the steering committee members or email them as listed.

### ***Volunteer Coordinator***

Nest box monitors are Prescott's most important assets. We need to recruit, train, and retain enough volunteers to cover all routes. If you are a well-organized, computer-friendly, people-person with communication skills, we need you to work with our steering committee and banders to recruit volunteer monitors. To learn more about monitoring or the new volunteer coordinator role, contact Marilynne Keyser, [mtkeyser@aol.com](mailto:mtkeyser@aol.com).

### ***GPS Coordinator***

PBRP is starting an exciting new research project to link nest box locations to banding, recapture, and nesting data using a Global Positioning System (GPS) unit. We are working with Jon Hak, the Global Information System Program Manager at the Oregon Natural Heritage Information Center.

The GPS volunteer coordinator will help us select a hand-held GPS unit and PDA (e.g. Palm Pilot), learn to use the equipment, work with banders to take GPS coordinates for all nest boxes (~1700), and teach banders to use the equipment. Contact Amber Keyser, [keyser@arches.uga.edu](mailto:keyser@arches.uga.edu) for more info.

### ***Nest Box Coordinator***

Dan Brown is stepping down after several years giving generous nest box development time. He will work with a replacement volunteer as long as needed to transfer his duties, which include: maintaining supplies of boxes, traps, feeders, etc; supervising nest box builders; coordinating volunteer builders for events; purchasing needed supplies and obtaining donated materials; writing articles for the newsletter; and assisting in annual training sessions as needed. If you like working with wood, people, and bluebirds, contact Dan, at [browndogg54@juno.com](mailto:browndogg54@juno.com).

## Prescott Bluebirds on the Net

Those of you who attended the September wrap-up meeting at Champoeg this year were treated to videos of western bluebirds raising their young. They were created this summer from inside a Prescott nest box at the same time that the images were projected to the Internet.

President Fred Robinson worked with the Cornell University Ornithology Laboratory in New York to install one of their digital video cameras in a nest box located on his property near Newberg. In the section below, he describes how the pictures were taken and uploaded to the web. To see archived pictures of the successful nesting cycle of a pair of our bluebirds, go to the website, <http://birds.cornell.edu/birdhouse/nestboxcam/>. You'll find pictures of the box and camera set-up and all you could ever want to know about the program. Prescott may host the site again in 2003. We hope to receive a grant to fund an audio pickup capability and additional camera mounted outside the nest box to record the adult birds coming and going.

### ***How did they do that?***

The camera was mounted in the second story of a two-story nest box with a close-up lens about six inches above the nest. A wireless transmitter sent the signal to a receiver and then into a laptop computer located in the host's house where it was digitized and transmitted in one-minute intervals over the phone line to Cornell. The images were updated every minute, and key images were archived showing the sequence from first egg laid to last bird fledged. The receiver in the house also transmitted to a VCR and TV, creating over 400 hours of nesting activity on videotape.

### ***Want to help edit our videos?***

If you are interested in video editing or know someone who is, contact Fred Robinson at [forester@open.org](mailto:forester@open.org). The ideal video would be a 15-minute presentation for training and public relations uses. This is a volunteer position, but PBRP will reimburse all necessary expenses.

## Why Band Bluebirds?

Amber Keyser, Research Coordinator

Each summer our 16 banders are very busy. They attempt to band every nestling with a uniquely numbered aluminum leg band provided by the federal government. They also set traps to capture adult birds. If they catch an unbanded adult, they band it, but most of the time, the adult birds are already banded. Even so, it is important to recapture the bird and record the unique band number.

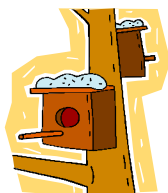
When we recapture a bird, we can look up its number in our database and learn where it was hatched, who its parents were, how old it is, and many other interesting facts.

Banding bluebirds tells us something about the current population size, but banding *and* recapturing tells us much more. Right now, we are using this information to study:

- Where fledgling bluebirds go when they leave the nest
- How individual bluebirds are related to each other (bird “genealogies”)
- Whether feeding mealworms to nestlings increases over-winter survival
- What the age-structure in the population looks like
- How mortality patterns are related to age and early life experiences

In short, the banding and recapture program is essential to understanding many aspects of bluebird biology.

For more information, see what the Federal Bird Banding Lab says about banding at [www.pwrc.usgs.gov/bbl/homepage/whyband.htm](http://www.pwrc.usgs.gov/bbl/homepage/whyband.htm). If you see your dedicated bander up at dawn, trying to entice adults into the trap, give him or her some encouragement and maybe a muffin too!



## Birders and Federal Laws

Excerpted from a 1992 article by C. Faanes, C. Vaughn, Jr., and J. Andrew (*Birding Magazine*).

The Migratory Bird Treaty Act is the cornerstone for migratory-bird conservation and protection. The Act was established in response to the unregulated and indiscriminate taking of birds. Plume hunters at the turn of the century had nearly decimated the continental population of Snowy Egret (*Egretta thula*) and other related species. At about the same time, market hunting caused the near-extinction of several shorebird species, including among others the Eskimo Curlew (*Numenius borealis*), Hudsonian Godwit (*Limosa haemastica*), and Lesser Golden Plover (*Pluvialis dominica*).

The provisions of the Act are nearly absolute: "... unless and except as permitted by regulations... it shall be unlawful *at any time, by any means, or in any manner* to pursue, hunt, take, capture, kill... possess, offer for sale... purchase... ship, export, import... transport or cause to be transported... any migratory bird, any part, nest, or eggs of any such bird." The maximum criminal penalty for an individual violating the Act is a \$5000 fine and a six-month jail term for each count. Examples of permitted actions that *do not* violate the law are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and similar activities. For more information, see <http://migratorybirds.fws.gov/intrnltr/treatlaw.html>.

### Reminder from Research Coordinator

English House Sparrows and European Starlings are introduced species. Thus, neither is protected under the Act; nests, nestlings, and adults may be removed. **It is illegal to disturb nests of other common native species that may compete with bluebirds and use our nest boxes, such as nuthatches, wrens, swallows, etc.** Only banders and those acting under their supervision may handle bluebird eggs, nestlings, or adults. PBRP banders, monitors, and landowners must act legally in accordance with the Migratory Bird Treaty Act at all times.

## Research Update: Population Growth

Amber Keyser and Marilynne Keyser

In the last Prescott newsletter, we reported on survival, fecundity, and population growth based on data from 1995 through 2001. We have continued to refine this analysis, and we present some corrected results here. You can find more details in the Fall 2002 issue of *Bluebird, Journal of the North American Bluebird Society*, in which we are publishing a complete research report, “Western Bluebirds: Life history, population growth, and conservation.”

In our population, the average lifespan was 1.4 years for females and 1.6 years for males. The maximum lifespan we have documented was four years for females and six years for males. The average survival rates for males of different ages were much higher than for females (Figure 1).

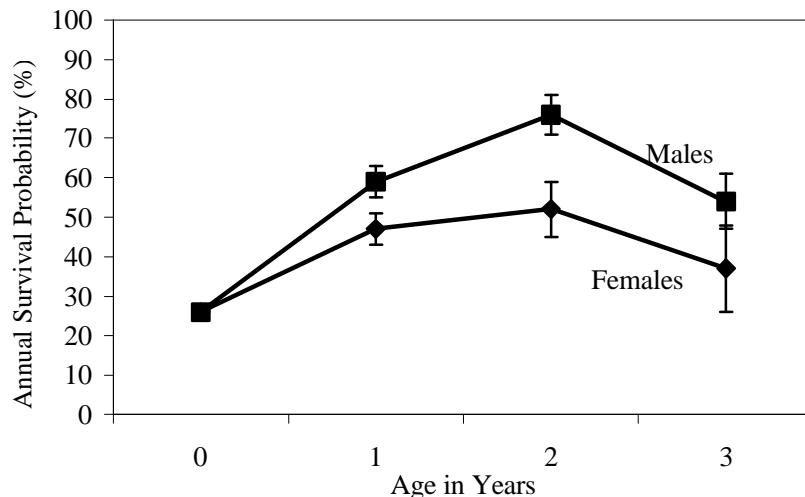


Figure 1: Annual survival probability for male and female Western Bluebirds. Note that nestling survival rate is the probability of surviving from fledging (Year 0) to breeding in the following year as a one-year-old bird. Nestling survival was not separated by sex.

The data are averages across years, but we did find a lot of variation in survival between years. The year 1997 was the worst winter for adult survival, and 2000 was the best. We found similar variation in fecundity. The average fledging rate in 1998 was 2.3 offspring per pair. Compare that with 1997 and 2000 when each pair fledged an average of three nestlings.

In the last newsletter, we reported that the population growth rate was 1.33, and we concluded that our population of bluebirds was growing very fast. However, we found an

error in our calculations: in fact, the population growth rate was 1.08. That means each female, on average, replaced herself with 1.08 female offspring. The population is growing but not fast. We still have conservation work to do!

### Diazinon Harmful to Birds Feeding on Insects

Excerpted from Fall 2002 *Bluebird* and reproduced with permission of the author, Dodie Wilson of Corvallis.

Mr. C. only meant to kill the crane fly larvae destroying his lawn at his home near Brookings, Oregon. His weapon of choice came highly recommended from the county farm advisor...diazinon spray. The dead and dying larvae rose to the surface of his sprayed lawn and were actively eaten by several species of birds, including bluebirds. Within days, Mr. C. and his neighbor who also used diazinon found dead and dying bluebirds on their lawns (one of which was banded by Elsie Eltzroth in 2001, south of Corvallis about 150 miles away).

Commonly used on residential lawns, turf, gardens, and crops, diazinon is registered for use on 64 food crops. Often found in rivers and streams in urban areas, between 1994-98, the EPA found diazinon accounted for more incidents of bird kills than any other pesticide, the majority from residential uses. EPA has determined that diazinon poses risks to humans, birds, and all forms of wildlife and is planning to phase out/eliminate residential and indoor uses and some crop applications. It is believed that by phasing out the non-agricultural outdoor uses, urban river and stream quality will significantly improve and the risk to birds and aquatic life will be reduced. See the EPA website for more information on this dangerous pesticide at [www.epa.gov/pesticides/op/diazinon/questions.pdf](http://www.epa.gov/pesticides/op/diazinon/questions.pdf).

## Research Update: 2002 Necropsy Report

*Amber Keyser, Research Coordinator*

As most of you know, I collected dead adult bluebirds this summer and performed necropsies. My goal was to try and figure out why so many adults were dying. In 2001, we recovered 53 dead adults. In 2002, we recovered 94 dead adults, including 18 that were not banded. These numbers are very unusual. I checked with other bluebird researchers around the country who monitor a large number of boxes. Most of them reported that they found approximately five dead adults per year. This discrepancy suggests to me that there might be something wrong in our population.

What is killing our bluebirds? I still don't have the answer to this question, but we do have a lot more information now thanks to the necropsy project. Here is my preliminary report.

### **Preliminary Report**

I examined 25 females and 35 males. Thirty of these were too decomposed to necropsy. The average age was 1.4 years for dead females and 1.9 years for dead males. Dead birds came from throughout the study area, but peaks of mortality (as a percentage of active bluebird nests in 2001) came from Ladd Hill (Thomas Guide pg. 744), Sherwood-Scholls (pg. 684), and Parrett Mountain (pg. 714). These deaths were not weather related. However, adult deaths may be associated with certain habitat types (e.g. golf courses, natural fields, and residential acreage). A full analysis will have to wait until the 2002 nesting data are all in.

When I examined gut contents of dead adults, I found four full of food, 11 empty, and 15 full of blood. Twenty-one adult birds had one or more thorny-headed worms embedded in their intestinal tracts.

The thorny-headed worm is an obligate parasite that must infect a bird host to complete its life cycle. Eggs produced by the mature worm are excreted in the bird's feces. If a pill bug eats the bird droppings, the eggs hatch and grow into

juvenile worms inside the pill bug. If a bird eats the pill bug (or feeds it to a nestling), the juvenile worm uses its specially adapted "thorny" head to burrow in and attach to the intestinal wall where it reaches reproductive maturity.

### **Preliminary Conclusions**

It is unlikely that the presence of a few intestinal parasites is enough to kill a healthy adult bluebird. Here is what I think may be happening. First, the parasite infects the bird and creates a wound in the intestinal wall. Second, the wound becomes infected by a bacterium (*Clostridium* sp). Third, the bacteria produce toxic proteins. Fourth, the toxic proteins cause internal bleeding and death.

It is too early to know if this hypothesized series of events is really happening, but I do know that 10 out of 14 birds that died from internal bleeding also had intestinal parasites.

This research project is on going so look for updates in future newsletters. As we develop new research protocols, we'll keep you posted on those too!



### **Mark Your Calendars for 2003**

All Prescott volunteers and supporters are encouraged to attend the following meetings.

**January 18**—Steering Committee at Champoeg

**February 22**—Volunteer Training at Champoeg  
(See related article on page 8.)

**March 20**—NABS Convention at Kearney, NE  
(See related article on page 2.)

**June 14**—Annual Champoeg Bluebird Festival

**August 26**—Steering Committee at Champoeg

**September 20**—Fall Wrap-up at Champoeg

## Winter Food Plants for Western Bluebirds

Jim Kreutzbender, Bander

Fall and winter seasons are life and death for wildlife in search of ample food supplies. Wintering western bluebirds in Oregon rely more on fruits and seeds when insect populations plummet. There are Oregon native plants and other trees and shrubs available to enhance your property and bluebird survival. I found information about plants for the western bluebird in short supply, but you might try some plants known to benefit the eastern bluebird.

### Desirable Plants for Birds

**Roses** – Rose hips have beautiful winter color and are valuable wildlife food. There are many varieties of *Rosa rugosa* that produce large fruit hips. Two native roses that you may find are baldhip rose (*R. gymnocarpa*) and nootka rose (*R. nutkana*). These form big thickets, so plant them with care.

**Sumac** – A valuable winter seed food, sumac is another large spreading plant that produces conical shaped red masses of fruit and likes a dry, sunny site. With glowing red/orange fall colors, smooth sumac (*Rhus glabra*) grows wild in eastern Oregon. Staghorn sumac (*R. typhina*) is the eastern U.S. variety that grows here too. The seed heads may last all winter in dry climates if not eaten by hungry birds.

**Berries** – Plants for dry, sunny or partial-sun sites are elderberry and serviceberry. Blue and red elderberry (*Sambucus*) mature their fruit clusters in the fall. The blue grows into a much larger plant, 15 feet or more, but can be pruned. The red elderberry is only about eight feet tall. Serviceberry (*Amelanchier alnifolia*) forms a large shrub or can be pruned to a small tree. This native grows large berries, like miniature apples, that are sweet and edible. Again, these are wild, multi-stemmed shrubs.

**Hollies** – Many holly species are known winter bird food sources because the berries persist all winter. Holly trees are separate male and female plants and grow in sun or part shade. American

holly is preferable here, but English holly has great berries too. Several shrub hollies are listed for eastern bluebirds: winterberry, (*Ilex verticillata*), deciduous holly, (*I. decidua*) and inkberry, (*I. glabra*).

**Dogwood** – The Oregon native, red osier dogwood, (*Cornus stolonifera*), forms multi-branched, 15-foot thickets that provide good cover for birds. This plant grows in moist soils and has cream-colored berries that are good summer and fall food.

**Others** – Possible plants to try for winter food include California wax myrtle, (*Myrica californica*), mountain ash, (*Sorbus americana*), and other dogwood and holly varieties.

### Some Not So Desirable for Humans

Some undesirable plants on your property are great winter food for bluebirds. Poison oak (*Rhus diversiloba*) and nightshade (*Solanum*) are rampant vines in western Oregon that are hard to eliminate. Also mistletoe plants in oak trees produce a berry that is vital to bluebird survival.

## Christmas Bird Counts

Every winter throughout North America chapters of the National Audubon Society sponsor Christmas Bird Counts (CBCs). This popular citizen-science bird-watching project is over 100 years old and has nothing to do with religion. Volunteers spend a day in the field, usually in December or January in a team of two or three, looking for as many species of birds as they can see or hear and estimating the numbers. Data is recorded on site and reported at the end of the CBC day, often followed by dinner and good conversation with fellow birders.

Important data about the fluctuations in U.S. bird populations and various species in decline has been gathered in this way and published in *American Birds*. If you'd like to participate in a CBC, expand your bird watching skills, and meet some other birders in your community, call your Audubon chapter. The Audubon Society of Portland can be reached at 503.292.6855, [www.audubonportland.org](http://www.audubonportland.org).

## Volunteer Training Set for February 22, 2003

PBRP's spring training session is at the Champoeg State Heritage Area Visitor Center, Saturday, February 22, 2003. The morning session from 9:00–noon covers skills needed to be a bluebird nest box monitor. The afternoon session from 1:00–3:00 p.m. is for experienced volunteers. The steering committee meets from 3:00–4:00 p.m. and all are welcome to attend. There is a \$3.00 parking fee, and if you plan to stay all day, please bring a sack lunch. Coffee and donuts will be provided in the morning.

**We are asking banders and monitors to help recruit new volunteers. During the 2002 breeding season, we were short four monitors, making it almost impossible to cover all nest boxes effectively. Please talk to neighbors, friends, and property owners on your routes and encourage them to join us.**

If you or anyone you know wants to become a monitor, come to the morning session, which is being completely redesigned. Property owners are always welcome. You'll learn about bluebirds, what you can do to help them, and receive a notebook with wonderful new materials to assist you (experienced monitors may want to join us for the morning session too). **If you plan to attend the morning session, please leave a message (503.245.8449) so we can prepare a notebook for you.** If you can't attend the training session but would like to volunteer, leave a message to that effect and someone will get back to you.

We urge our experienced monitors and banders to attend the afternoon session when we'll describe the discouraging results from the 2002 breeding season, review what the research tells us, and discuss strategies for 2003 and beyond. This is a chance for you to help shape the future of PBRP and our population of western bluebirds. Please come!

**Directions to Champoeg:** Hwy 219 south from Newberg, cross the Willamette River, and take the first road on the left (Champoeg Rd) for six miles to the park. From I-5 north or south, take Exit 278 (Donald/Aurora), and follow signed county roads about six miles west to Champoeg Park.

## Nest Box Notes

*Dan Brown, Nest Box Coordinator*

We are using a lot of new nest boxes. This season 437 were issued to volunteers. In 2001, 452 were issued and in 2000, only 223. Though many of these replaced dilapidated ones, the numbers are testimony to the program's expansion. We are grateful to **Frank Abderhalden, Jack Stennet, and Leonard Walker** for their efforts in making most of the nest boxes and to **Brenda McGowan** for turning over her barn for equipment storage.

### **Materials Needed**

The team always needs the following materials:

- ¾-inch plywood and cedar
- 6-foot metal posts and poles (min. length)
- 2- and 2½-inch PVC for telescoping poles

To donate materials, leave a message for Dan at 503.245.8449 or [browndogg54@juno.com](mailto:browndogg54@juno.com).

### **House Sparrow Management**

English house sparrows are a non-native, invasive species that competes with bluebirds. PBRP's policy is not to allow sparrows to nest in our boxes. Some things you can do to manage the sparrow problem are:

- Avoid placing boxes near livestock buildings and chicken coops.
- If you have feeders near boxes, use only black oiled sunflower seeds, as sparrows don't eat them.
- Remove sparrow nests as they are built.
- Trap and remove sparrows.

Call 503.245.8449 to request a copy of our sparrow management position paper mailed to you.

### **Noel Guards Reduce Predation**

Those wire cages attached to box fronts are Noel guards, predator baffles screwed over the box opening after bluebirds lay an egg. They do not deter bluebirds, but they do prevent raccoons, cats, and other birds from pulling eggs and chicks through the entry hole. We have a good supply of these and other items to be distributed at the February 22 training session at Champoeg.