Greetings and happy 2016 from OSU Forestry & Natural Resources Extension! The final weeks of 2015 and the first days of the New Year brought us some “gifts” in the form of rain, snow, wind, and other weather excitement. While the mountain snowpack and recharge of our reservoirs and soils were sorely needed, sometimes there can be too much of a good thing! Saturated soils and high winds led to downed trees all over the place on Dec. 21st. You may have had one come down in your woods or in your neighborhood. It seems timely to review some guidance for dealing with damaged or down trees.

In a forest setting, downed or damaged trees can be ecologically beneficial. Downed logs, especially large ones, become homes to salamanders, snakes, small mammals and other critters. They help retain and release nutrients and moisture into the soil (See “morticulture” article referenced on p. 9). Limbing up a fallen tree to get the branches in contact with the ground will eliminate fire hazard.

So, in the forest, downed trees are not “lost” trees; so long as not too many of them come down at once. But if many trees blow down in a small area and are not removed in a timely way, there becomes a risk of bark beetles building up in numbers which may subsequently damage standing trees. The Oregon Department of Forestry suggests that this risk is presented when there are more than 3 downed trees/acre. Remember, this is if all the downed trees are fresh (from this year) and the “safe” window for removal is through the following winter.

After a big windstorm many homeowners call us, concerned about whether the big Douglas-fir tree in their yard will withstand the next one. Again some sage advice from a recent ODF news release: “While it’s true that trees can fall over when soil is extremely saturated, most do not. Tree failure in saturated soils usually happens when trees have had their roots damaged, removed, or compromised due to construction damage, restricted rooting space, or disease.” Changing the soil grade around a tree, overwatering and paving or compacting the soil can all lead to these problems.

For us at OSU Extension, the turn of the calendar brings an accounting of accomplishments over the past year and planning for the next. I’m pleased that over 500 people attended Forestry & Natural Resources Extension education programs - workshops, shortcourses, and field tours - in my service area in 2015. It was a pleasure to interact with all of you in person and I hope to meet other readers of this newsletter in the coming year. The next couple of months bring some of our most popular perennial programs, including the Basic Woodland Management Shortcourse and, of course, Tree School over in Clackamas County. Details on those and other events are inside.

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Upcoming Events

Tour: Wood in Building Design and Construction at Western Oregon University
Wednesday, January 20th, 3:30 pm, WOU, Monmouth
Work is underway on the Richard Woodcock Education Center at WOU using a wide array of materials including the very first Oregon-produced cross laminated timber (CLT), as well as laminated decking, stud and plywood framing. WOU’s construction manager will lead a tour and explain the choices and applications of various wood products. RSVP to jody.einerson@oregonstate.edu or call 541-766-6750. Please include name, phone, email, and number in your group.

Washington County Small Woodlands Association Meeting
Tuesday, January 26th, 7:00pm, North Plains Fire Station (31370 NW Commercial St.)
Tammy Cushing, OSU Extension Specialist in Forest Economics, Management and Policy will compare and contrast the timber industry in the southeast U.S. vs. the Pacific NW.

Yamhill County Small Woodlands Association Meeting
Wednesday, January 27th, 6:30 pm social/7:00 pm meeting. 2050 NE Lafayette Ave., McMinnville
There will be a presentation on current forest issues by Seth Barnes (Oregon Forest Industries Council).

Basic Woodland Management Shortcourse 2016
Tuesday evenings, February 9th—March 1st, 6:00 - 8:30 pm, McMinnville
Our annual course is appropriate for anyone just starting to care for a small woodland property. See registration form on page 9 for more information. Cost: $40/individual or $50/family.

Forest Health in Oregon: State of the State 2016
February 16th—17th, LaSells Stewart Center, Oregon State University, Corvallis
Conference designed to synthesize the current forest health conditions of Oregon forests by focusing on mortality agents and other factors that negatively impact forests. Scholarships available for Master Woodland Managers. Details at: http://blogs.oregonstate.edu/2016foresthealth/

Washington County Small Woodlands Association Meeting
Tuesday, February 23rd, 7:00pm, North Plains Fire Station (31370 NW Commercial St.)
Mike Cafferata from ODF will give an update on the riparian buffer rules and the Salmonberry Trail Corridor.

Yamhill County Small Woodlands Association Meeting
Wednesday, February 24th, 6:30 pm social/7:00 pm meeting, 2050 NE Lafayette Ave., McMinnville
Scott Leavengood, Director of the Oregon Wood Innovation Center at OSU, will speak on “What’s New in Forest Products”.

Oregon Season Tracker - A Citizen Science Workshop
Tuesday, March 15th, 10 am - 3 pm, Columbia County Extension Office, St. Helens
Become an Oregon Season Tracker citizen scientist and help collect rainfall and seasonal plant phenology data. It is a fun way to contribute to science and learn about your local weather patterns. Cost: $35 includes approved rain gauge. See our website http://extension.oregonstate.edu/columbia/forestry/events for details.

Clackamas Tree School
Saturday, March 19th, Clackamas Community College, Molalla
Registration usually begins mid-January. Register early as many classes fill up quickly. For event information, watch http://extension.oregonstate.edu/clackamas/tree-school

Washington County Small Woodlands Association Meeting
Tuesday, March 22nd, 7:00pm, North Plains Fire Station (31370 NW Commercial St.)
Mary Castle from Weyerhaeuser will speak on the topic of Woodland Roads.
I got a call a while back from someone having trouble finding the seedlings she wanted and wondering if she could make do with something else. The caller wanted large, bare root hemlock seedlings from her Coast Range seed zone, but all she could find was container stock from a Washington seed source, and wanted to know if that was an ok choice.

Given the current seedling supply situation, I am thinking many people may be facing a similar choice between the “right” planting stock type and the “right” seed source, if they have any choice of seedlings at all. When is compromise a sound choice? The seedling you buy reflects the way it was grown, resulting in a size and shape that makes it more or less suited to different conditions in the field (as well as more or less expensive), and is thus an important factor in successful establishment. We use terminology such as 1-1 or 2-0 to convey cultural history of different seedling types. The seedling you buy also has a genetic heritage, usually described by its area and elevation of origin, which reflects its adaptation to particular environmental conditions. We commonly use seed zones as a guide to help assure adaptation of seedlings to their planting site. When not done right, we see unhappy trees that are often described as “off-site”. So we are talking about different scales of impact, and so different scales of risk.

If you look at the seed zone map for western hemlock (from Sources of Native Forest Nursery Seedlings) you’ll see they are fairly generous in their north-south orientation and rather narrow east to west. This suggests that you may be able to move hemlock a fair distance north or south, but not as far east to west. A short distance one direction can be as important as a long distance in another. This is consistent with the experience of Rick Allen, a Forester for Starker Forests, who says that difference in behavior of coastal sources can be dramatic if planted inland no further than Blodgett or Burnt Woods, rather than near the coast. You can find more about that in the publication above as well as in this publication on selecting native plant materials. This issue will likely be of even more concern in the case of climate change. Yes, people are experimenting with longer moves beyond the traditional seed zones, but unless being done with good bioclimatic information (likely with help of a computer model), it is more likely to be a roll of the dice than a sound management strategy.

So back to the type and scale of the risk. An inappropriate stock type may make the task of plant establishment harder (due to browsing or competition), and be quickly evident. But we can and often do address this culturally (with Vexar tubes or more rigorous weed control). An inappropriate seed source is likely to affect long term growth and survival, but not be evident for years or even decades. Poor adaptation cannot be easily addressed afterwards. All this seems to add up to an answer that it might be okay to buy a less-than-ideal type of planting stock if you think your management skills can provide for the shortcoming, but since we are talking about trees in the forest rather than tomatoes in the garden, you ought to be much more cautious about compromising on source of origin. In that case, you would likely be better off delaying the planting a year or so to get the genetics and stock type you want.

Which is just what the caller did.
There is a tiny creek across the road from my woodland. I saw fish traps in there for a couple of years, then a more elaborate staked-net. Attached, there was a rain-splashed note with a phone number. I called, and since then have learned a lot about restoring salmon runs.

The person I spoke with was Kris Homel, the chum salmon restoration coordinator for Oregon Department of Fish and Wildlife. Our many conversations since then have taught me that restoring salmon is a slow complex process, but here in the lower Columbia it is starting to work. Adult salmon reintroduced in nearby Stewart Creek over the past two years have spawned successfully. Elsewhere in the Clatskanie basin, eggs are being grown to fry in near-stream incubators, introducing thousands more young fish. By 2018, it is expected that reintroduced salmon will return to the Clatskanie River to spawn.

To restore salmon, you need both fish and habitat. Population surveys in the lower Columbia found few fish aside from a small population nearby in Grays River, Washington. Restoration efforts in the Clatskanie/Beaver Creek drainage focus on introducing Chum salmon. Why Chum? Chum spawn in the lower, flatter parts of streams. Their spawning wiggles flush fine sediments from the stream leaving cleaner gravel. The cleaner gravel creates feeding and rearing habitat for other salmon whose fry stay and grow in the stream for longer than Chum. In addition, Chum fry head for the ocean as soon as they emerge from gravel in the spring, which is only a few months after hatching rather than a year or two for Coho and Chinook salmon. Adult Chum return to spawn as three, four, and five year-olds (more rarely as two year-olds). Thus, most of the nutrients and energy Chum put into a system (brought from the ocean by spawning adults) stay around for use by others. There is no freshwater harvest of Chum, so learning how to repair habitat and reintroduce Chum can be done without affecting established fisheries. Furthermore, habitat improvements for Chum salmon result in improved spawning and rearing habitat for other salmon, notably Chinook, Coho and Steelhead.

Habitat surveys identified some potential reintroduction sites for salmon, but lots of degraded habitat as well. Reversing salmon habitat degradation is challenging, but possible. It starts with thinking about how a stream functions now and how it might have looked before disturbance. Placing large wood in streams is a major restoration tool. Large wood can hold gravel in the stream instead of it getting flushed downstream. As the wood becomes part of the channel, it changes how the channel forms and creates pools. It can also protect stream banks by slowing flow so that they erode less. Stream banks can also be regraded so that they are flatter and less prone to eroding. Planting native vegetation along the banks helps to decrease erosion, improve stream shading, and eventually allow more wood to fall in the stream. Reviving historic side channels can create more stream habitat and reconnect the stream and its flood plain. (continued next page)
Watch for Salmon (continued)

At present, restoration efforts in the Clatskanie drainage are off to a good start. There has been a lot of measurement and analysis to sort out what is important for the right habitat, as well as trial reintroductions to test those ideas. Stewart Creek seems to have the right size of gravel for Chum, vegetated banks, pools, and not too much fine sediment covering the gravel. On a different stream draining to the main Clatskanie Basin, rearing eggs to fry in incubators near the stream itself has increased survival during this vulnerable stage, and thousands of fry have been released. The brood stock population at Big Creek hatchery developed rapidly beginning with fish borrowed from a nearby population. We have habitat, which we continue to improve. We’ve added fish. Now, we wait.

There are risks. This description wildly simplifies the life of Chum salmon (their long migration includes predators and ocean fishing), the wider biology involved (plants and animals besides salmon live in streams—and in the rest of the watershed), and the issues facing habitat restoration (it’s mostly on private land and it costs money). Fry get eaten. Fish die in the ocean. Volcanoes erupt and the earth quakes.

Ideally, we should see some returning adults in the fall of 2016 at three years old, though most chum return at age four. In 2017, we should see four-year-olds from the first releases returning, as well as three-year-olds from the next group. By 2018, there will be three-year-olds from the third year of fry, four-year-olds from the second year, and five-year-olds from the first group. The numbers will grow. When the fish we’ve now released come back as adults, they will need places in our streams to spawn and continue the cycle. Chum spawn in the lower part of streams; the whole watershed affects those places. We need to keep improving stream habitat and caring for our watersheds.

To learn more or get involved in salmon restoration, contact Kris Homel, ODFW Chum Salmon Reintroduction Coordinator, 503-910-3091, Kristen.M.Homel@state.or.us; or Margaret Magruder, Lower Columbia Watershed Council, 503-728-9015, magruder@clatskanie.com.

Images are courtesy of Seymour Salmonid Society, Oregon Department of Fish and Wildlife, Vancouver Aquarium BC (adapted by the author), and METRO.

Board of Forestry increases streamside buffers

In November, the Oregon Board of Forestry voted to make changes to the Oregon Forest Practices Act in an effort to protect cold water in fish-bearing streams. The specific rules have yet to be developed, but a summary of the major changes follows.

The new rules apply to streams with salmon, steelhead, and bull trout (SSBT) in western Oregon (excluding the Siskiyou region). The changes apply to Riparian Management Areas (RMAs, aka “buffers”) within harvest units and there are several key aspects: changes to 1. the buffer widths, 2. the tree retention requirements within the buffers, and 3. what can be counted towards those tree retention requirements.

On small fish-bearing streams: the buffer width will increase to 60 feet from the current 50 feet (each side of the stream). Within the buffer, minimum tree retention will increase to 112 ft² of basal area/1000 linear feet of stream from the current 40 ft². (*For a definition of basal area, see footnote.) And, under the new rule both conifer and hardwood trees will be able to be counted towards that minimum basal area, whereas under current rules only conifers may be counted.

On medium fish-bearing streams: the buffer width increases from 80 feet from 70 feet. The minimum tree retention increases to 183 ft² basal area/1000 feet of stream, from the current 120 ft². And, as with small streams, both conifer and hardwood trees may be counted toward the basal area requirement.

As with current rules, landowners can elect to treat the buffers as “no-cut” areas, should they not wish to remove any trees within the RMA. There is also a provision intended to protect ownerships where a significant (>10%) of the property would be affected by the new rules.

This is a brief summary, and there are other details, including some alternate options. In 2016, ODF will begin developing the specific regulations to be adopted into law. Look for more information as the process unfolds.

*Basal area is a measurement of tree stocking. It is calculated as the summed cross-sectional area of all the tree stems in a particular area. For reference, a 14-inch diameter tree makes up roughly 1 ft² of basal area. So, under current rules, for a small fish-bearing stream segment 1000 feet long, at least 40 14-inch conifer trees (or their equivalent) need to be retained in the 50-foot-wide buffer.
Thirty years of private timber harvest trends in northwest Oregon

By Amy Grotta, OSU Forestry & Natural Resources Extension

“What’s with all the logging going on?” is a comment I’ve heard more than once recently. Rural residents of northwest Oregon seem to be noticing an uptick in timber harvest from their industrial neighbors over the past year or so. I wondered whether these observations were simply anecdotal, or if they signaled a rebound from the recession, or if they were evidence of a more historic rise in harvest rates. So I decided to dig into some local data on recent forest ownership and harvest trends.

For this discussion, I focus only on harvest statistics on private lands – and I will further distinguish between private industrial (i.e. large timber companies) and private non-industrial (i.e. small woodlands, or family-owned forestlands). I looked at data for the three counties I work in. Did you know that Columbia County ranks #1 among all Oregon counties in terms of the percentage of privately owned forest land? 94% of all the forestland in Columbia County is privately owned – with about two-thirds of that land owned by industry and one-third by small woodland owners. In both Washington and Yamhill Counties, roughly 70% of the forest land is privately owned with the balance in state or federal ownership; the private land is about 50/50 industry/small woodlands (plus a fraction in Yamhill County in tribal ownership). Across the three counties combined, forest industry owns 56% of the private forest land, small woodlands account for 43%, and the remaining 1% is in tribal ownership. These figures come from the Oregon Forest Resources Institute and can be found on the Know Your Forest website, [http://knowyourforest.org](http://knowyourforest.org).

The data shown in the next chart come from the Oregon Department of Forestry and illustrate a few further points about timber harvest trends in this part of northwest Oregon.

First, and most obviously, we see that the vast majority of timber harvested in these counties is on industrial land. In any given year over the last 30, industrial forest owners account for between 69 – 92% of the total private harvest volume, while the amount coming from small woodlands (NIP on the graph) is between 7 – 31%. Since forest industry owns only 56% of the private forest acres, we see that more volume per acre is harvested by the timber industry on an annual basis than by small woodland owners.

The data support some assumptions we often make about small woodland owners; for instance, that they typically use less intensive harvest practices such as partial cuts or longer rotations than industry. Another interpretation is that small woodland owners’ harvested acres tend to be less productive on a board-foot basis, in that they are less fully stocked or more dominated by non-commercial material. A combination of all of the above is likely. (continued next page)
Timber Harvest (continued)

Second, we see that harvest rates fluctuate a lot year to year, but patterns are evident. Harvest volume dropped dramatically in the recession, and though it’s been rising rather steadily since then, it had not yet reached pre-recession levels by 2014. Small woodland owners, whose harvest behavior as a whole tends to be very price sensitive, were more affected by the recession – those were the years (2007-09) when they made up the smallest percentage (6-7%) of the total harvest. Since the recession, small woodland owners’ harvest rates have rebounded more quickly than industrial rates. In fact, in 2013, a year of relatively high log prices, small woodland owners’ share of the three counties’ total private harvest reached 25%, a level not seen since 1993.

Finally, there have been some differences among the counties in terms of forest industry harvests (see graph at right). Specifically, in Columbia County industry harvests rose rather sharply in 2014, to the highest level in a decade, whereas industry harvests in Washington and Yamhill Counties dropped that year. Industry patterns are driven by many factors including changes in corporate ownership. In 2013, the dominant industry owner in Columbia County, Longview Timber, was bought by Weyerhaeuser. Aggressive harvesting often follows a purchase in order to reduce the debt load incurred by the purchase. Small woodland owners are really no different, in that often timber is harvested to finance the buyout of a family member.

Data for 2015 were not available at this writing. Given what we know about harvesting behavior, what might we predict? Log prices in 2015 were down overall from the year before. So, small woodland owners’ harvests might have dropped as well. On the industry side, the “uptick” that many noticed may be continuing to play out.

New Publications and Resources

Small-Scale Harvesting for Woodland Owners (EM 9129)
By Steve Bowers and Francisca Belart. This publication mentions pitfalls to avoid and offers helpful information about small-scale harvests, from making a plan and selecting contractors to determining costs and increasing revenue. New December 2015, 14 pages. Free download at: https://catalog.extension.oregonstate.edu/em9129

Selecting, Planting, and Caring for a New Tree (EC 1438) - new iPad App
By Stephen Fitzgerald and Paul Ries. Available as an interactive app for tablets and a downloadable pdf. Both versions cover basic information on landscape tree selection and care. The app includes a variety of additional features, including videos and an interactive, in-depth tree selection guide to help you choose specific trees for specific locations and purposes. Free download at: https://catalog.extension.oregonstate.edu/ec1438

Oregon’s Oak Videos
Two new short videos document private landowners’ voluntary efforts to protect Oregon white oak habitats in the Willamette Valley. Oregon’s Oak: A Vanishing Legacy (8 minutes) and Oregon’s Oak, Caretakers in Time (3 minutes) were produced by the Yamhill Watershed Stewardship Fund and feature landowners, researchers, and conservation professionals in the Willamette Valley. The videos are available on the YWSF website: http://ywsf.org/

Flora of Oregon: Volume 1
For the serious botany enthusiast, Flora of Oregon: Volume 1 is the first comprehensive Oregon plant guide in over 50 years and the first that is fully illustrated. The 600-page book covers over 1,000 species of conifers, spore-bearing plants (ferns, mosses, etc.) and monocots (grasses, orchids, lilies, etc.). Ordering information on the Oregon Flora Project website, http://oregonflora.org/
If one of your land management goals is to provide wildlife habitat, you'll want to consider keeping a mix of native shrub species on your property. Shrubs provide a host of services to wildlife, including shelter or cover, nesting space, and food from their twigs, leaves, flowers, and fruit. With thought given to species selection and location, retaining existing shrubs or planting them can benefit wildlife without compromising timber growth or forest operations. This is the first article in a new series intended to help you recognize some of the “brush” species that may exist on your property, and understand how they may fit with your management goals. Each article will highlight one species that benefits wildlife in northwest Oregon forests.

Species Name: Cascara (or cascara buckthorn, chittam) - *Rhamnus purshiana*

Description: Growing up to about 30 feet, cascara could be considered a small tree or a large shrub. Its leaves are deciduous, simple, and alternating on the stem. They are oblong (2 – 6” long) and prominently *penniveined* (having a single central leaf vein with singular veins branching to either side). The leaf edges are very finely serrated or wavy. The small, green-white flower clusters are inconspicuous. The cherry-like fruits are round, 1/3” diameter, and purple to black with a yellow pulp. In winter, look for smooth, gray-brown bark with a patchy appearance. Winter buds are *naked*, meaning they appear to be small clusters of tiny overlapping leaves.

You may have mistaken cascara for red alder, which has similar looking oblong, serrated, prominently-veined leaves, smooth bark and also grows on moist sites. You can tell cascara and alder apart primarily by the fruits; cascara has a dark purple to black cherry-like fruit while alder has a one-inch woody cone-like fruit (called a *strobile*). Cascara's leaves are smoother and glossier than alder's.

Ideal habitat: West of Cascades in low to mid elevation coniferous forests; Grows on moist, well-drained sites, especially along streams; tolerant of shade.

Wildlife Value: This plant is particularly attractive to birds. For example, the band-tailed pigeon feeds on cascara fruits from July through autumn, often congregating in cascara patches well into the migration season. Band-tailed pigeons are found along the west coast and prefer nesting habitat less than 1000 feet in elevation, putting them in private forestland throughout much of western Oregon. Cascara is also a preferred forage for elk and valuable for pollinators.

Management Considerations: Cascara is not a very fast or aggressive grower, so it does little to compete with the growth of timber species such as Douglas-fir. Consider retaining existing cascara trees when selectively harvesting in mixed forests. You could also try underplanting cascara in small openings after a thinning. For pollinator or mammal forage, plant in clumps along stand edges to promote flowering and a more thicket-like habit.

If you are interested in learning more about creating wildlife habitat on your property, check out the Woodland Fish and Wildlife website: [http://westernforestry.org/WoodlandFishAndWildlife/](http://westernforestry.org/WoodlandFishAndWildlife/).

*Photo credits: Pat Breen, Oregon State University*
Forestry in the News

**Morticulture: forests of the living dead** *(Science Blog, Oct. 20, 2015)*
Knowing the ecological value of dead wood has influenced forestry practices and development in the Pacific Northwest. That, in turn, has changed forest management plans throughout North America and around the world.

**Climate change, wildfire seen transforming Northwest forests** *(OPB News, Oct. 29, 2015)*
Following a fire in the future, forests in the Klamath region, Siskiyou Mountains, and other edges of forest ranges may shift to grassland or shrubland as tree seedlings have more difficulty becoming established.

**Impact of Weyerhaeuser, Plum Creek combo depends on proximity** *(Capital Press, Nov. 24, 2015)*
Weyerhaeuser's planned merger with Plum Creek may affect small forestland owners depending on their proximity to the combined company's land and mills.

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https://facebook.com/osufnr

“Log” on and engage with the Oregon forestry community from your home, from the forest, from just about anywhere!

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**Basic Woodland Management Shortcourse**

Tuesday evenings, February 9th, 16th, 21st, and March 1st, 6—8:30pm;
Field session Saturday, March 5th 9am—2pm;
Yamhill Public Works Auditorium, 2050 NE Lafayette Ave, McMinnville

This introductory course is ideal for anyone who is just starting out taking care of a woodland property. Topics covered include: assessing your property and your site, tree biology, forest ecology and habitat, tree planting, care for an established forest, weed control, safety, timber sale logistics, and laws and regulations. Through the course materials, presentations, field session, and interactive discussions with other woodland owners, participants will leave the class with practical knowledge that they can use to care for their own small woodland.

Course fee is **$40 per individual** or **$50 for two or more participants from the same family**. **Facilitator** is Amy Grotta, OSU Forestry & Natural Resources Extension Agent– Columbia, Washington, and Yamhill Counties. Space is limited. To attend you must pre-register no later than **February 2nd**.

Make checks payable to OSU Extension Service. Mail in the form below to OSU Extension, 505 N. Columbia River Hwy, St. Helens, OR 97051. Or, register online at [https://secure.oregonstate.edu/osuext/register/970](https://secure.oregonstate.edu/osuext/register/970).

Questions? Contact Amy Grotta at (503) 397-3462 or amy.grotta@oregonstate.edu.

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**Basic Woodland Management Shortcourse Registration Form**

Name(s) of all attending: ________________________________________________

Mailing Address: ______________________________________________________________________________________________

Phone: __________________________ Email: __________________________________________________________________________

Number attending: ______ Number enclosed: ______________
Return Service Requested

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