

SHOP TALK

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Car Tires and Salmon

There's no place like home.

For as long as anyone can remember, coho salmon in the Pacific Northwest have migrated each fall from the Pacific Ocean back to the freshwater streams and creeks of their birth. Although they've spent the past two to three years in the Pacific, when it's time to spawn, they head for the freshwater streams they were born in. Since spawning is a one-in-a-lifetime event, it's critical that they reach their destination. Or die trying.

Unfortunately, that's exactly what's happening. And car tires may be to blame.

Over the past few decades, scientists have noticed an alarming drop-off in the number of salmon reaching their spawning grounds. The fish are dying off as they travel through urban waterways polluted by stormwater runoff. Researchers at some sites estimate that 40 to 90 percent of the returning salmon die before they can reach their destination. Even though female salmon lay 2,500 eggs or more at a time, an average of only 15% typically survives to adulthood. This means a pre-spawn demise en route drastically impacts the species.

Researchers are concerned about this trend; coho salmon are already considered endangered. Environmental researchers at the University of Washington are looking for possible causes for this phenomenon. Thus far, their findings point to a common ingredient used in tire rubber. This chemical, known as 6PPD, reacts with ozone, creating a compound that's extremely poisonous to salmon - and likely to other wildlife, as well. It's this compound that's been found in waterways flowing through cities along the salmon's spawning routes.

Although this chemical reaction created by tire manufacturers was intended to help extend the life of rubber tires, coho salmon exposed to the toxic offshoot in lab studies show the same symptoms and ultimate ending as wild salmon dying in urban waterways. Since a large percentage of stormwater comes from roadways around metropolitan areas, researchers believe this compound washes off streets and into wastewater treatment plants that aren't designed to filter it out. The fish are paying the price.

So what's the solution?

There are two paths toward solving this dilemma. The first involves figuring out how to treat stormwater more effectively as it collects from streets in urban areas and drains into surrounding waterways. The other solution

involves tire manufacturers searching for more ecologically-friendly chemicals to replace 6PPD in the tire manufacturing process.

Some tire manufacturers are already making a more eco-friendly tire. Continental, Bridgestone, Goodyear, and Firestone are just a few manufacturers that have already made strides in reducing the environmental impact of producing rubber tires. These companies and others are focused on three main objectives: the use of sustainable ingredients to replace synthetic rubber, reduced rolling resistance, and better tread design. All three contribute to an eco-friendly product that lessens environmental impacts.




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Bridgestone helps drivers reduce their footprint through lower rolling resistance, increasing fuel economy and reducing CO2 emissions. The company has also invested heavily in the search for a new source of natural rubber, cultivating a desert shrub called guayule, which is made of tissues containing a rubber constituent. Bridgestone produced the first tire made with guayule in 2015.

While Continental’s focus is also on reduced rolling resistance and improved tread life, it’s taken a different route to rubber alternatives. The company uses natural rubber produced from the roots of a Russian dandelion, an easily renewable rubber source. In 2016, Continental produced the first tire with 100% of the tread’s rubber compound coming from dandelions. Continental and Bridgestone are both working toward a zero-landfill status in their production plants, meaning that 100% of the facilities’ waste is converted into energy or recycled products.

The coho conundrum is probably not on most tire manufacturers’ radar. But as tire makers embrace the

auto industry’s move toward more eco-friendly vehicles, they may at the same time be saving an endangered species. Sustainable rubber options, better tread design, reduced rolling resistance, and the conversion of manufacturing plants to zero-landfill facilities will impact much more than just the amount of rubber residue that meets the road. And that may mean the difference between life and death for coho salmon in the Pacific Northwest. ⚙️



Baby Animals

DIRECTIONS: Fill in the crossword puzzle grid with the names of each animal’s baby. Use the word bank if you get stuck.

Across

2. Sheep

4. Crocodile

5. Fox

6. Dog

7. Duck

11. Eagle

12. Bear

14. Deer

15. Kangaroo

Down

1. Horse

3. Rabbit

5. Goat

6. Pig

8. Chicken

9. Cow

10. Cat

13. Human

WORD BANK

BABY	HATCHLING
BUNNY	JOEY
CALF	KID
CHICK	KIT
CUB	KITTEN
DUCKLING	LAMB
EAGLET	PIGLET
FAWN	PUPPY
FOAL	

A Giant Leap for Car Displays

As vehicle cockpit technology advances, drivers have more to pay attention to as they travel from Point A to Point B. Auto manufacturers tout this technology as an aid to help drivers stay attuned to what they're doing behind the wheel. But often, we're left wondering at what point the technology goes from being helpful to becoming a nuisance that detracts drivers' attention from the road.

There's a big difference between a glance down to see what speed you're going and having to take your eyes off the road long enough to decipher what your car is trying to tell you. At this year's Consumer Electronics Show (CES), several electronics manufacturers debuted new cockpit technology designed to take driver assistance to a whole new level.

Here are just a few of the announcements from CES that we find fascinating - and in some cases, a little scary, too.

Panasonic's new AR head-up display. For those unfamiliar with the term, a head-up display projects vital information on the windshield in front of the driver. The idea is that the driver can quickly and conveniently view this information without taking their eyes off the road. Panasonic takes this technology a step further by incorporating augmented reality (AR) and artificial intelligence (AI) into the display. AR allows the system to highlight objects in the real world to call the driver's attention to them. For instance, the display may lay a yellow cyclist icon over a real cyclist that the system detects in front of the vehicle, alerting the driver to slow down.

If Panasonic's new system works as it's designed, all this data will be displayed within the driver's field of vision, thanks to the addition of eye-tracking software. Is this too much to manage while driving? Time will tell.

Mercedes-Benz's new MBUX Hyperscreen. Mercedes-Benz's giant new hyperscreen creates a customer-centric experience for both drivers and passengers. Measuring more than 56 inches, the MBUX Hyperscreen shows drivers everything they may need while driving. It features three separate screens, including one for the "co-driver" in the passenger seat. This separate but integrated screen enables the passenger to view all that the driver sees and also watch videos and interact with apps the



driver can't access. AI functionality drives the MBUX Hyperscreen, learning drivers' habits and using them to anticipate needs, delivering intuitive, proactive assistance during the ride.


For example, suppose a driver calls his mother from the car at 3:00 pm every Wednesday. AI gathers this behavioral information and proactively asks every Wednesday at 3:00 if the driver is ready to call his mother.

A little creepy, no? But some drivers may appreciate this functionality, and manufacturers that get the customer experience right will enjoy a loyal following because of it.

Samsung's digital cockpit. In its quest to continually top the competition in mobile technology breadth and reach, Samsung rolled out a first-look at its new digital cockpit at this year's CES. Samsung's mission is to make screens available where people want them most. If that includes vehicles, so be it.

The new Samsung digital display sits in front of the driver and offers glance-down visibility rather than a head-up display. The screen can then be raised to front and center when needed. This allows a (safely parked) driver to attend a video call or kill time playing a video game while waiting to pick the kids up from school. Another unique feature is a rotating screen in the backseat. This screen emerges vertically from a center console and then rotates to a horizontal view, allowing backseat passengers to play games, watch movies, or take video calls of their own.

These digital displays are not just about the cool factor; they all have safety in mind, as well. Sophisticated driver-assistive technology is popping up throughout the automotive industry, and these new interactive cockpits are just another example of how it permeates the world we live in. Whether you choose to embrace it or reject it is up to you. But you'll have to choose one or the other because each year it's becoming more impossible to ignore.

For more information on these innovations and much more from this year's CES, visit [videos.ces.tech](https://www.videos.ces.tech). 

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Inside: A surprising link between car tires and coho salmon

BUT I JUST BOUGHT IT!

It never fails to shock folks who have recently bought a new (or new to them) vehicle when they're handed an estimate for a laundry list of needed maintenance items. In their mind, the vehicle is new. "It **shouldn't** need anything," they think.

Some people get upset or think the shop is trying to pull a fast one on them. That's especially true of extremely low-mileage used vehicles. "It only has a few miles on it," they say.

The idea that mileage is the be-all and end-all in determining the condition of a vehicle is a pernicious myth. Every maintenance table accounts for the passage of time and/or mileage.

It isn't helpful to change your oil every 3,000 miles if it takes you two years to drive that distance. In that instance, time should be the determining factor as to when maintenance needs to be performed.

The maintenance table also outlines other items that need to be serviced and when the service should be performed. That includes things like tire rotations, cabin air filters, transmission fluid, brake fluid, differential and transfer case fluids, and other items that need to be inspected by a professional.

In addition to your oil and filter service, your two-year-old Nissan is likely to need an engine air filter, cabin air filter, and brake fluid service. But people are shocked by this, especially if

Clean the air you breathe in your vehicle!

FREE cabin air filter and installation with any service over \$197 (value: \$68.97 min)

Cannot be combined with any other offer. Restrictions apply. If special oil is required, a discount will be applied to your invoice. State inspections and tire sales do not apply to the offer. Expires 4/30/21.

they just bought the vehicle.

Rather than react suspiciously to the shop's recommendations, pull out your owner's manual and get confirmation that the maintenance items are actually needed.

Conversely, don't take every shop's recommendations as gospel. I've seen the bloated list of "needed" flushes handed out to unsuspecting new car owners by dealerships.

In the end, nothing beats a great relationship with a locally-owned, independent repair shop to ensure that you and your vehicle are properly taken care of.

Until next time,

Adam