Fresh off the plane from the USA, **Andy Bryce**, Westonbirt Arborist, describes the successful wild seed collecting trip and the dramatic effects of drought and wildfire.

Wild west coast

Top: Moss and fern cover the temperate rainforest at Lake Quinault, Olympic National Forest.
Above: Andy Bryce climbing Rocky Mountain fir (*Abies lasiocarpa*) on Slate Peak in Okanagan National Forest.
© Luke Wallace.

TRIP OF A LIFETIME

When I was asked to participate in the 2015 seed collecting expedition to the Pacific Coast, I knew it would be the trip of a lifetime. We would be seeing some of the world's most dramatic landscapes, finding spectacular trees in their native environment, and collecting great new species for Westonbirt. Criss-crossing Washington State, through Oregon and around California, the team was led by Dan Luscombe, Dendrologist from Bedgebury National Pinetum, and joined by myself and Guy Horwood from Oxford University Harcourt Arboretum, John Allen from Bedgebury Pinetum and Luke Wallace from the Friends of Bedgebury Pinetum.

In Olympia, Washington State we met Dr Andy Bower, a geneticist with the United States Forest Service (USFS) and Matt Lobdell from the Morton Arboretum in Chicago. Andy was to be our guide for the first two weeks and proved invaluable. Using highly detailed USFS maps and his knowledge of species locations, we were able to locate target species quickly.

Olympic National Forest

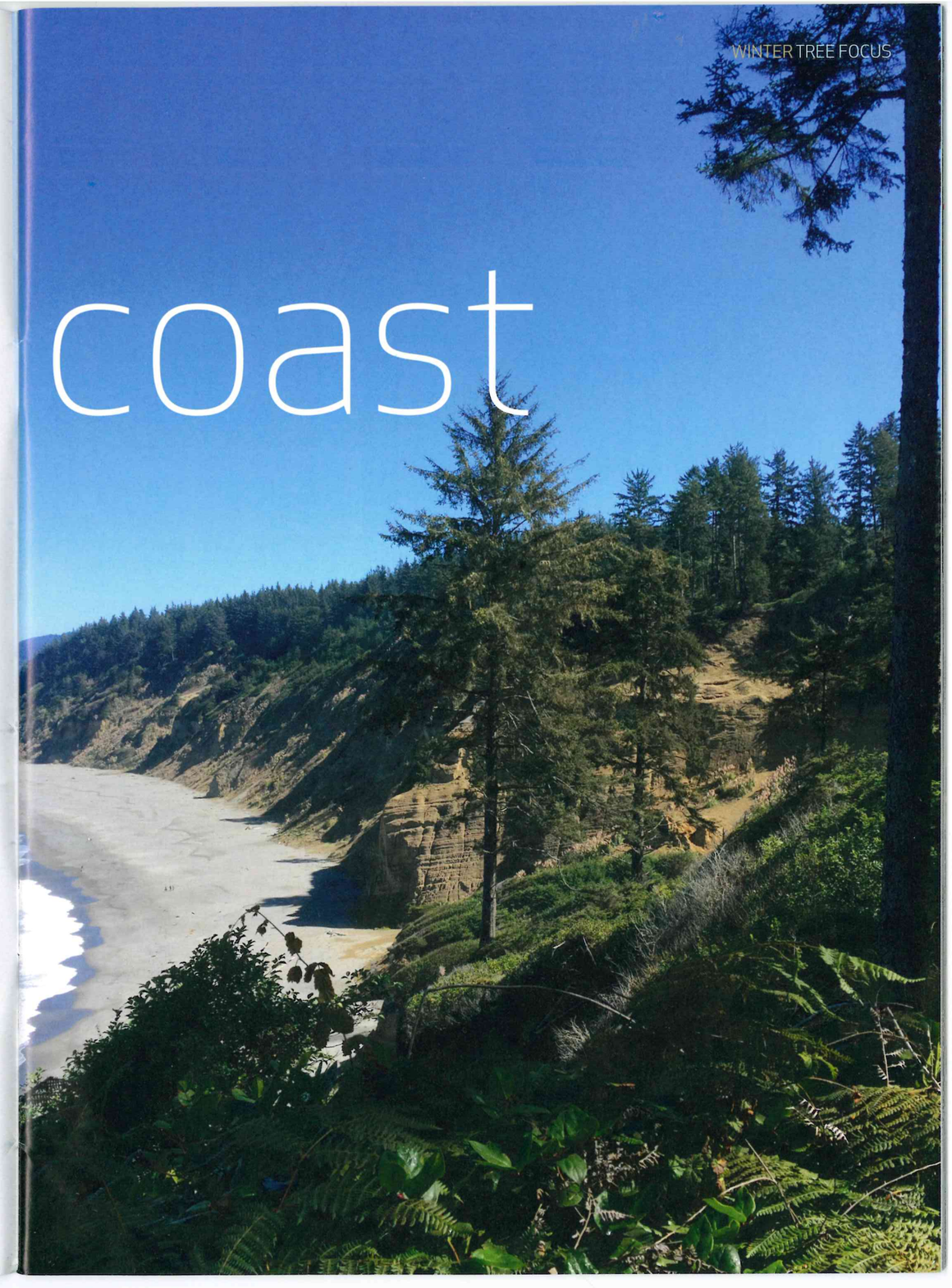
Fourteen feet of rain falls here every year, resulting in huge moss-covered trees that dwarf anything the UK has to offer. Around Lake Quinault is the Valley of the Rainforest Giants, it is home to six champion conifer trees including a 302 ft Douglas fir (*Pseudotsuga menziesii*) and a 1000 year old Sitka spruce (*Picea sitchensis*).

Cascade Mountains

Moving north east to the Cascade Mountains, we encountered the effects of the wildfires that have engulfed much of the Pacific North West and California. The smell of fires still smouldering filled the air around Skagit.

A narrow, rocky off-road route took us up Hart's Pass to Slate Peak (7450 ft) where a lookout was built during the Cold War. Now a fire watch tower, it provides stunning views over the Pasayten Wilderness where we made a good collection of several species including: *Alnus sinuate, Sorbus sitchensis, Pseudotsuga menziesii, Picea englemannii, Sambucus caerulea, Clematis* sp., *Philadelphus lewisii, Prunus virginiana, Alemanchier laevis* and *Abies lasiocarpa*. ➤➤

All photographs unless stated © Forestry Commission / Andy Bryce



Opposite: Sitka spruce (*Picea sitchensis*) at Patrick's Point State Park, California.

From top: Mount Rainier, Washington; Dan Luscombe seed cleaning at a motel © Luke Wallace; using fire to open the cones of Knobcone pine (*Pinus attenuata*); Dan, Andy and Guy at The Stout Tree in Jedediah Smith Redwoods State Park. © John Allen.

Okanagon National Forest

We continued east into the Okanagon National Forest to look for alpine larch on Baldy Peak. To get there, we drove through one area of previous wildfire of over 300,000 acres, 500 times the size of Westonbirt. It was no surprise to find that the larch we wanted was all burned. Luckily Andy Bower knew another location, not too far away on Tiffany Mountain (8242 ft). We hiked up, past more burned areas, and found more than we were looking for: alpine larch (*Larix lyallii*), Engleman spruce (*Picea engelmannii*) and whitebark pine (*Pinus albicaulis*).

Seed cleaning

The most important part of the trip was to look after and maintain the precious wild-collected seed. Fruits and cones had to be broken down, flesh removed and the seeds cleaned, dried and stored for transportation. We did this every night in hotel rooms and on campsites till the early hours. Then the team were up early again to pack everything and drive to the next location up to four hours away.

Wanatchee National Forest

High up in the forest on Mission Peak we collected Douglas fir. This specimen certainly didn't break any world records, growing at 6878 ft, this tree was only 10 ft tall. But the views stretched over 145 miles into Oregon and Mount Rainier. Lower down in the valley bottom we collected the only native oak in the region, the Garry oak (*Quercus garryana*); Westonbirt currently has three specimens.

Goodbye Matt, hello Oregon

Matt Lobdell said farewell and the rest of us headed to Mary's Peak in Oregon in search of the noble fir (*Abies procera*), a stunning tree with huge cones and our first Millennium Seed Bank collection. We left its fir cones at Dorena Genetic Resource Centre for cleaning and sending on to the UK. We also collected Hind's black walnut (*Juglans hindsii*) which will join Westonbirt's national collection of *Juglandaceae*.

California baby

While searching for the foxtail pine (*Pinus balfouriana*) and the sugar pine (*Pinus lambertiana*), we ended up on roads that weren't even on the forest maps. We struck lucky high up on a hillside with foxtail pines everywhere above the wildfire-burnt area. An early morning climb for sugar pine was delayed by a rain storm but it soon dried up. Sugar pine is the tallest pine species in the world and has the longest cones of any conifer; up to 50 cm.

Farewell to Dr Andy Bower

Andy Bower left us in Happy Camp, Northern California and we traveled across to the Pacific Coast and redwood country. Only those who have visited these giants can appreciate their glory; pictures cannot do them justice. Coast redwood (*Sequoia sempervirens*) were on the target list so we visited grove after grove looking for seed. Our permits did not allow us to climb these old growth forest trees and we left empty handed. ➤➤

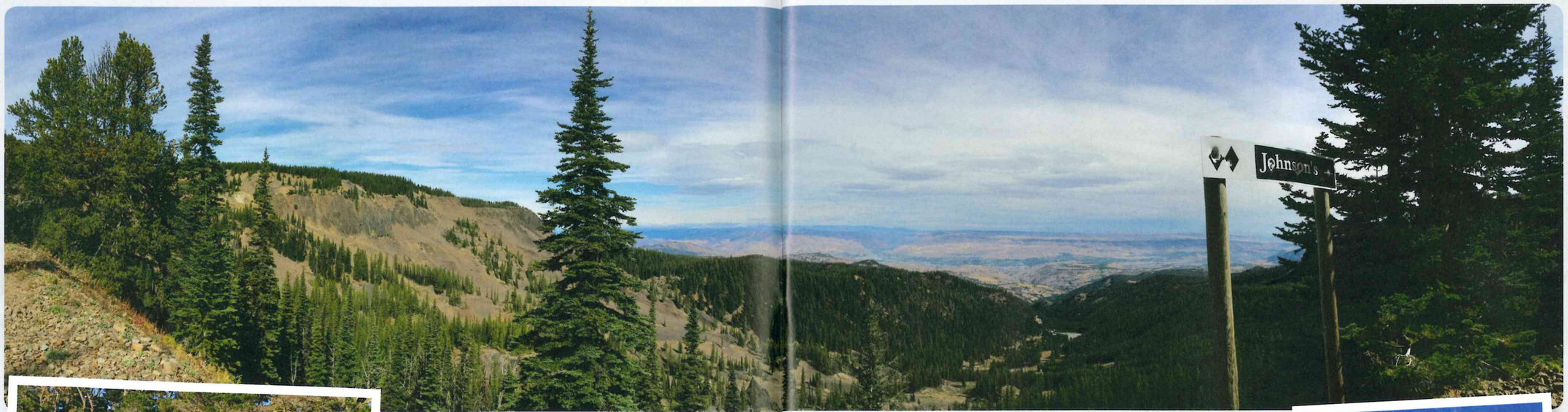
From top left: Next year's cone on a foxtail pine (*Pinus balfouriana*); cones of a Douglas fir (*Pseudotsuga menziesii*) at Mission Peak; lodgepole pine (*Pinus contorta* 'Murrayana') © Luke Wallace; cutting a sample seed from California torreya or nutmeg (*Torreya californica*) to reveal a good seed © Luke Wallace; Hind's black walnut (*Juglans hindsii*) © Luke Wallace; Andy with Garry oak (*Quercus garryana*). © Luke Wallace.

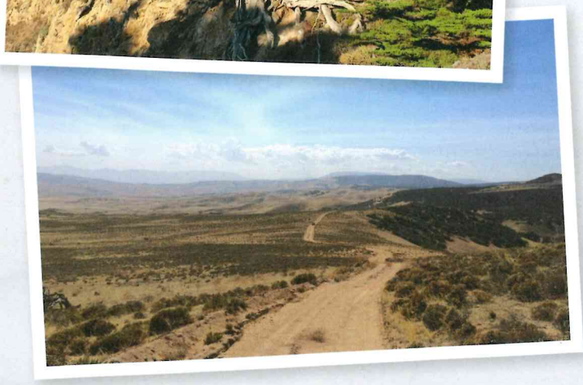
From left: Guy Horwood (Harcourt Arboretum), Andy Bryce (Westonbirt), Evan Meyer and Nick Jensen (Rancho Santa Ana Botanic Gardens), Dan Luscombe and John Allen (Bedgebury National Pinetum) © Luke Wallace (Friends of Bedgebury Pinetum).

Competition from a scrub jay over coast live oak seeds (*Quercus agrifolia*). © Luke Wallace.

Right: Wildfire-burned patch.

WINTER TREE FOCUS





Main picture: Rocky Mountain fir (*Abies lasiocarpa*) at Mission Ridge ski area, Wanatchee National Forest.

From top: Monterey cypress (*Cupressus macrocarpa*) in its coastal habitat; Tehachapi Mountains overlooking the Mojave Desert.

Opposite: Great Basin bristlecone pine (*Pinus longaeva*).

Natural habitat

Patrick's Point is a stunning coastal habitat for the UK's most common forestry tree, Sitka spruce. Frustratingly, we had Monterey cypress (*Cupressus macrocarpa*) seed in our hand but the permit to collect came too late and we had to leave without it.

Getting hotter

Perseverance paid off and we finally managed to collect coast redwood cones just north of San Francisco, close to its most southerly distribution.

New team members

South of Monterey in California, we met with Evan Meyer, a botanist from Rancho Santa Ana Botanic Gardens, who shared his wealth of knowledge about Californian endemic species. At Tejon Ranch, on the edge of the Mojave Desert, we were all surprised to find high diversity in a relatively small area. We made 18 collections in just one day, including five oak species.

Highlight of the trip

After a long drive around the Sierra Nevada Mountain Range, we headed into the White Mountains and witnessed the Great Basin bristlecone pines (*Pinus longaeva*) at 11,500 ft, the highest point of the trip. The whole team were humbled by these ancient living monuments, some of which are 5000 years old.

Last collection

Standing at the peak of Mount Wilson overlooking Los Angeles, we made what was to be the last collections of the trip, Coulter or big-cone pine (*Pinus coulteri*) and the Californian black walnut (*Juglans californica*).

The first seeds have arrived back at Westonbirt and have already been sown. As the perfect way to round off the trip, I'm really looking forward to planting these new specimens and watching as they grow into the magnificent trees that they were collected from. ■

Statistics

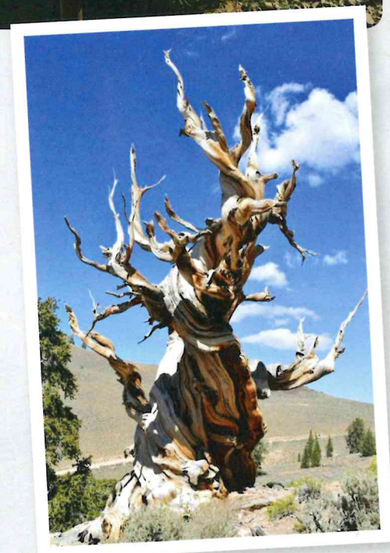
THREE STATES

25 DAYS

90 COLLECTIONS!

4000 MILES

12 NATIONAL FORESTS



Andy Bryce would like to thank the Friends who have enabled this important expedition. Their contribution will help ensure the future of this world-class tree collection.

the friends of Westonbirt Arboretum
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