

ALAN GRATZ

#1 *New York Times* bestselling author of **REFUGEE** and **GROUND ZERO**

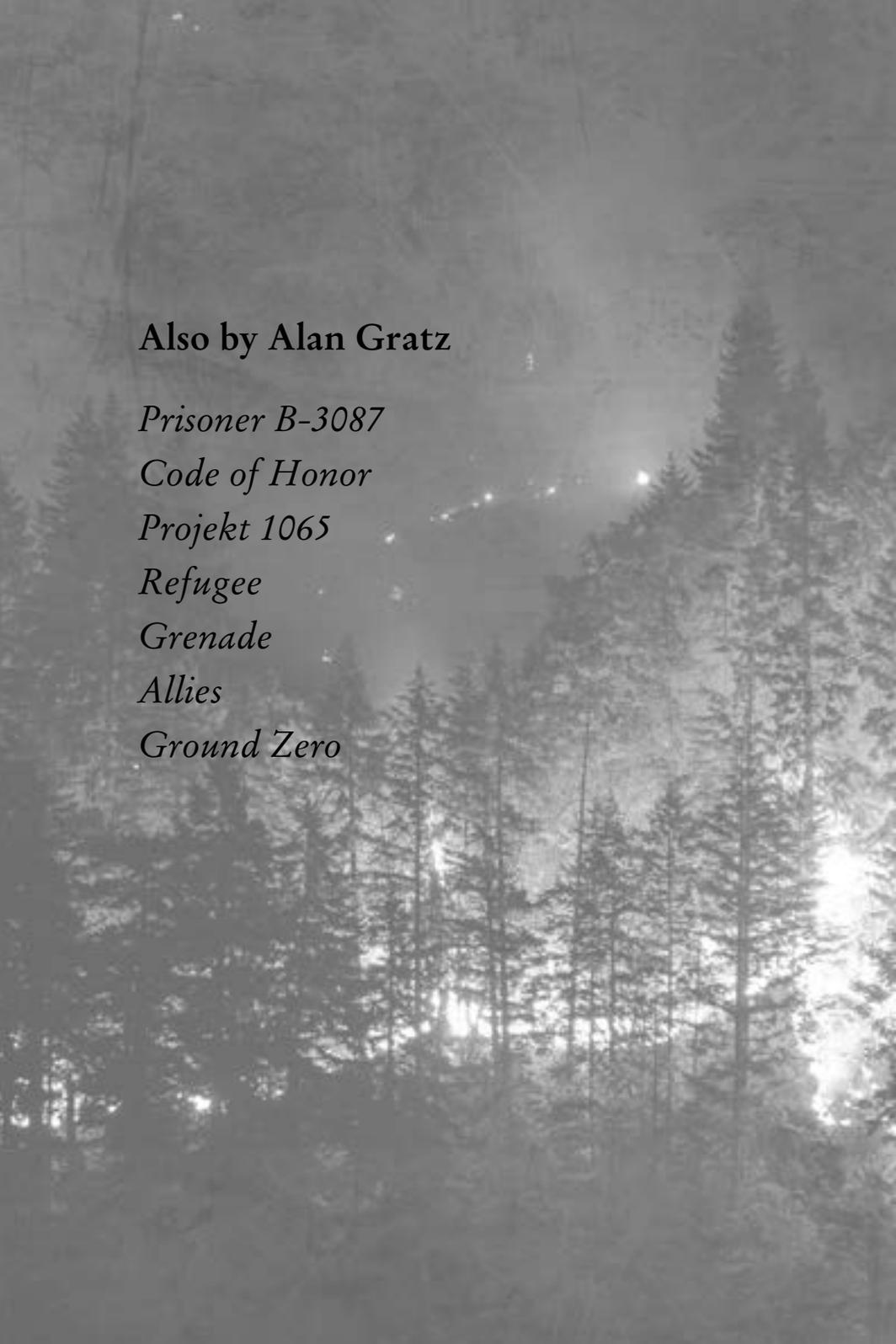
TWO DEGREES

A planet in crisis. And time is running out.





**TWO
DEGREES**



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ALAN GRATZ

**TWO
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**For Claire and Maddie Gratz.
The future is yours.**



THE SIERRA NEVADA, CALIFORNIA

PART I



RED FLAG WARNING

“Dad, look. A wildfire!” Akira Kristiansen cried. She pointed down the mountain trail, where a thin gray wisp of smoke rose from the trees in the valley.

Akira’s father rode just ahead of her on a black Friesian horse named Elwood. Akira was riding Dodger, her chestnut gelding quarter horse. Dodger had been the first one to sense the fire below, stopping and turning his ears toward the smoke to let Akira know there was trouble.

Akira’s father pulled to a stop and glanced over his shoulder. A first-generation Norwegian American, Lars Kristiansen looked like a real-life Paul Bunyan, complete with blue jeans, a red plaid shirt, and a bushy brown beard.

“Don’t worry about it,” he told Akira. “I’m sure it’s nothing.”

Akira frowned. She’d checked the fire conditions before setting out on their ride that morning. The National Weather

Service had issued a red flag warning for the Sierra Nevada range today, as they did almost every other day in the fall. A red flag warning meant warm temperatures, dry conditions, and strong winds—which all added up to the possibility of a forest fire. How could smoke in the foothills *not* be a problem?

Akira looked at the ground, where brittle leaves and pine needles were ready and waiting to burn. “Shouldn’t we at least let Cal Fire know?” she asked.

“A little fire is good for a forest,” her dad told her. “It gets rid of all the dry stuff before too much of it builds up and burns out of control.”

Yeah, but it seems like there aren’t any “little fires” anymore, Akira thought. Not since the temperature of the earth had risen nearly two degrees, and the hotter air and longer droughts had sucked the moisture out of everything, making California a tinderbox. Now almost every fire was a megafire that burned up half the state. And it was all thanks to human-caused climate change. Akira had learned about it in school last year, and it had scared her. But when she’d come home and told her family what she’d learned, her dad said the same thing then that he said now:

“Nature can take care of itself.”

He clicked his tongue for Elwood to walk on, clearly done with the subject.

Akira shook her head. Her dad had seen all the same changes in the Sierra Nevada that she had in the past few years: bigger, more frequent, more destructive wildfires. Smoke warnings that caused her to stay home and miss school. Drought conditions that had made their well run dry.

But she knew better than to say the words *climate change* around her dad. All he would do was challenge her on it, and Akira didn't have the energy for that. Her father *got* energy from engaging with other people. It recharged him to be social. Akira was the opposite. She liked people, but being "on" all the time drained her. After a week of the normal chaos of school and family, she needed these peaceful, restorative Saturday morning rides with Dodger.

And arguing about climate change was definitely *not* peaceful.

Akira looked over her shoulder at the smoke and sighed. Then she gave Dodger a pat on his withers to let him know she'd gotten his message.

"Thanks, Dodger. Everything's okay," she told him.

I hope, she added silently.

KING SEQUOIA

It was October, and the hillsides were awash in oranges and yellows and reds and greens. Akira loved this time of year, when the air was crisp and cool and smelled like cedar and Douglas fir. There were a few dark clouds in the sky, but Akira knew it wasn't going to rain.

It never rained anymore.

Akira closed her eyes and took a deep breath, letting Dodger have the reins. He and Elwood carried Akira and her father up into a tall canopy of Ponderosa pines, where bearclover and white alder grew among granite boulders. The horses climbed higher, to the top of the mountain, and at last Akira and her dad came to the place they'd been headed all along.

A hush fell over Akira like she'd entered a church, and her skin tingled.

“Do behold the King in his glory, King Sequoia,” Akira's father whispered, quoting a line from the naturalist John Muir.

All around Akira and her dad were dozens of giant sequoias, some of the biggest trees on the planet. The largest sequoia here was twelve feet wide, and it stretched so high up into the sky Akira had to crane her neck back to see the top of it. Full-grown giant sequoias like these were called monarchs, because they were the kings and queens of trees. Some of them were over two thousand years old.

Akira and her dad shared a smile. They both loved this place.

Up here, Akira felt like she was outside of time. Like the rest of the world didn't exist. This grove was Akira's escape. Her sanctuary.

Akira hopped off Dodger and walked deeper into the grove while her horse grazed. *This is what it must feel like to be an ant among elephants*, Akira thought. The giant sequoias made her feel small and insignificant, but in a good way. They reminded her that she wasn't the center of the universe. That there were things that were far older and bigger than she was.

Her father got down from Elwood. "Oh no," he whispered theatrically. "What will happen if your wildfire makes it all the way up here?"

Akira scowled. She knew as well as her dad did that giant sequoias were adapted to withstand wildfires. Their bark was two feet thick, and their shaggy evergreen leaves were high up, where forest fires couldn't reach them. These trees even *needed* wildfires to reproduce—their seed cones only opened up when exposed to extreme heat. A wildfire was never going to burn these trees down, and her father knew it. He was baiting her, trying to get her to argue with him about climate change.

Akira huffed and turned away. Why did her dad have to ruin this? These rides into the mountains were when Akira felt *closest* to her father. He was the one who'd taught her the names of all the plants and animals in the forest, and all the facts about giant sequoias. Who'd taught her how to recharge her batteries in nature.

How could her father be wrong about climate change, but right about everything else?

Akira shook her head. She wasn't going to bite. She wasn't going to argue. This was *her* day. Her time away from everything, in her favorite place in the whole world. And she wasn't going to let anybody spoil it.

"Whoa! Cool!" a girl's voice shouted behind her, and Akira jumped.

TRESPASSERS

Akira turned around. The girl who'd intruded on her sanctuary looked to be about thirteen, like Akira. She had short raven-black hair and light-brown skin, just like the man who was walking beside her. *Father and daughter*, Akira guessed.

"And there are horses too!" the girl added, running for Dodger and Elwood. Halfway there she saw Akira and stopped. "Oh, hi. Sorry."

"Hey there," Akira's dad said to the newcomers. "I'm Lars, and this is Akira."

"Daniel and Sue," the other dad said. He and his daughter had a bit of an accent, but Akira couldn't place it.

"Where you from?" Akira's dad asked.

Akira groaned inwardly. Her dad loved chatting with random people. He talked to everybody from drive-through attendants to parents in the pickup line after school. That was embarrassing enough, but now his friendliness was going to encourage these strangers to stick around.

"We drove up from Fresno," the man said. "Parked in the lot on the other side of the mountain and hiked up. How about you?"

"We live close. Rode up from the other side," Akira's dad said. "My wife and younger daughter are back home."

"Can I pet your horse?" Sue asked Akira as their dads made small talk.

“Sure, I guess,” Akira said, swallowing her frustration. Why did this girl and her dad have to be here now? They were trespassing on her refuge.

At least Sue knew enough to rub Dodger’s neck, not pet his head like a dog. And Dodger seemed to like her, giving Sue a nudge with his nose that made her giggle. Dodger was a good judge of character, and that made Akira relax a little.

“These giant trees are incredible,” Sue said, her voice quieting. Maybe she was starting to feel some of the grove’s magic too.

“Yeah. Is . . . this your first time seeing them?” Akira asked, making an effort to be sociable. It wasn’t easy for her. If she was honest, Dodger was her best friend. At least since Patience had moved back to Florida.

Sue nodded. “We just moved here last year.”

“I grew up here,” Akira told her. “My dad’s been bringing me to see the sequoias since I was little.”

“He’s your dad?” Sue asked, then immediately blushed. “I’m sorry. It’s just—”

Akira waved it away. She got that all the time. She didn’t look entirely like either of her parents, sharing her dad’s broad shoulders and high cheekbones, and her Japanese American mother’s straight black hair and brown eyes.

“We were a little worried to move to California, what with all the wildfires you’ve been having,” Akira heard Sue’s dad say, and alarm bells went off in her head. She took a step toward the two dads, trying to think of something she could say to change the subject, but it was too late.

“You know, because of climate change,” Daniel added.

Akira froze. *Oh no. Oh no oh no oh no*, she thought.

He said the words.

Akira’s dad laughed. “There’s no such thing as ‘climate change,’” he told Sue’s dad. “I mean, the earth goes through hot and cold cycles, but humans don’t have anything to do with that.”

Daniel looked taken aback. “You’re kidding, right? You don’t think the huge amounts of greenhouse gases we’re releasing into the air by burning fossil fuels has anything to do with the fact that the earth keeps getting hotter?”

Akira and Sue shared a worried glance, anticipating the coming storm. Even Dodger’s ears flicked toward the two men.

“The earth is a huge ecosystem,” Akira’s dad said, like he was explaining it to a dummy. “We’re just one tiny part of it.”

“Dad—” Akira started, but her father ignored her. Dodger danced nervously, sensing her anxiety. Their beautiful, perfect morning was going up in smoke.

“All those gases trap the heat in our atmosphere,” Sue’s dad said, “which causes droughts and melts the ice caps and raises the sea level. Climate change is real, and we’re causing it. Which means we have a responsibility to do something about it.”

“Do you hear yourself?” said Akira’s dad. “Look at these trees. How can you stand among these giants and think anything *we* do could change anything? The idea that we caused climate change, or could stop it if we wanted to, is the height of arrogance.”

“I’ll tell you what’s arrogant—” Daniel said, but he never got to finish.

“Fire!” Sue screamed, making them all jump. “There’s a wildfire down the other side of the mountain!”

Akira looked back the way she and her father had come, and gasped. The little trickle of smoke they’d seen a short while ago had turned into a huge, raging wildfire. The fire was growing fast, eating up the forest with impossible speed.

And it was headed right for them.

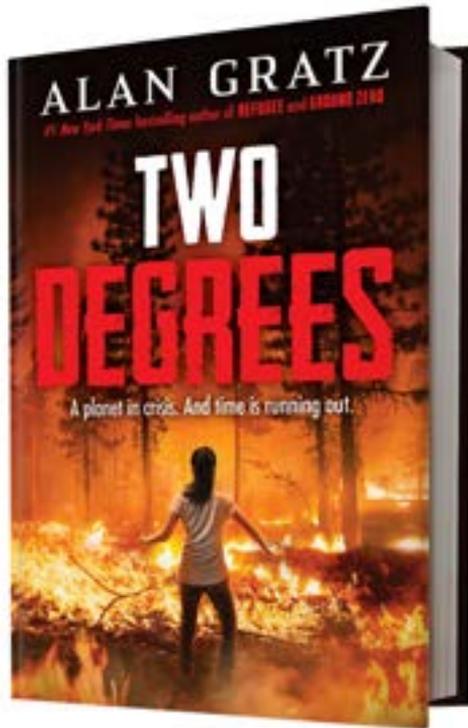
“We have to get back to the car now!” Daniel cried.

“You’ll never make it on foot. Not with how fast that fire’s moving,” Akira’s dad said, their argument forgotten in their panic. “Get on the horses. We’ll take you to the parking lot.”

Akira grabbed her father’s arm. “But Dad, that’s the opposite direction of our house!”

“We’ll drop them off, then go around the long way,” he told her. “We’ll be all right. But we have to get these people to safety. Now hurry! Go!”

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