

# The BiblioFiles: Kat Falls

**Premiere date: September 21, 2013**

DR. DANA: The Cotsen Children's Library at Princeton University Library presents The BiblioFiles.

[MUSIC PLAYING]

DR. DANA: Hi, this is Dr. Dana. Today, my guest is Kat Falls, author of *Dark Life*, and its sequel, *Rip Tide*. *Dark Life* is set in the future, after a global disaster has caused most of the world to sink under the seas. Most humans live topside, crammed into overpopulated cities, stacked on top of one another, in graffiti-covered skyscrapers. But a small group of scientists and pioneers choose to live below the seas and farm the deep ocean floor, a place that is as dangerous as it is beautiful.

Fifteen year old Ty was born subsea, and has a secret he's desperate to keep. He has a Dark Gift-- something that develops in children who live subsea. For Ty, it's biosonar ability; for his sister, Zoe, it's the ability to shock like an electric eel. Dark Gifts are considered abnormal, and must be hidden from everyone, including one's own parents.

Ty's world changes when he meets Gemma, a girl from topside who comes to the subsea to find her older brother. Together, they make some dangerous discoveries that neither of them expected.

In the sequel, *Rip Tide*, Ty and Gemma uncover a wreck while trying to anchor some supplies in a trash vortex in the Atlantic. It turns out that the wreck is a crime scene-- an underwater community that was deliberately sealed and sunk with the inhabitants still inside. In the wake of this crime, another happens. Ty's parents are kidnapped during a crop sale, throwing Ty and Gemma into the underworld of politics, outlaws, and perilous secrets.

The *Dark Life* series is unlike any other-- the various machinery used to traverse the ocean floor, the flexible architecture of subsea homes, the Liquigen you breathe into your lungs to survive the deep-- Kat Falls has created a unique world, with amazing details and a biology textbook full of aquatic wildlife. The pace is rapid, and her ability to weave characters, emotion, dialogue, and details into the story is astounding.

Kat Falls' new young adult book, *Inhuman*, was released this month. She joins us from Evanston, Illinois. Kat Falls, welcome to The BiblioFiles.

KAT FALLS: Hi, Dana. It's nice to be here. Thanks.

DR. DANA: How would you classify this book? Science fiction, speculative fiction, underwater Western?

KAT FALLS: All three. Speculative fiction is so general. It's anything that is not contemporary realism. So it definitely fits into that. With science fiction, when I first conceived of the idea, I was going back and trying to choose between fantasy or science fiction, which I was going to do because I love both genres.

And I also know that fans of each genre-- especially science fiction fans-- get very picky. They do not want fantasy thrown into their science fiction. Once I decided to do science fiction, I couldn't have a kraken come up, or a mermaid sail by.

So it helped me, by defining it as science fiction, narrow my choices. I decided that I had to make sure that every creature in the ocean that I have in the story is real and lives in the ocean today-- it isn't extinct. And I wanted to make sure all the facts about the creature.

So, if I say it's living in a certain level in the ocean, it really does live there. And I get the sizes right-- I don't exaggerate. And whatever I'm saying it eats is really how it hunts and eats.

The underwater Western part comes in because, once I-- well, I can tell you how I came up with the concept-- but once I decided on the concept of the premise, and I knew it was going to involve pioneers, I wanted it to have the Western flavor. I love Westerns from my childhood-- old Saturday morning movies-- and it just gave me a voice and a language for the piece.

DR. DANA: So, how did the idea for Dark Life come to you?

KAT FALLS: I always wrote film scripts before. Although I had had none made into movies, I had had several optioned. And then I got married and had three children, and I stopped writing for a good stretch there, when the kids were little.

And I would keep my hand in by doing writing exercises, and just throwing them in a file, thinking, someday, when I've had enough sleep and the kids are bigger, I will get back to writing. And the day came where I was doing a writing exercise-- and I literally do the thing the teachers do for English classes, or other classes. They'll set a timer for 10 minutes, they'll give a prompt and they'll say, "Don't lift your pen from the paper for 10 minutes."

And I do that all the time. It's a good way for me not to get caught up in getting the premise right. If I know I have to keep my pen moving, I just keep going. And the prompt that I gave myself that morning was based on my son, who, at the time, was 11. And he was an avid reader, but a very picky reader.

And I decided to try and see if I could come up with a story that combined the topics he liked to read about. And the three book types he loved was anything about the Old West-- cowboys, Indians, pioneers. The second thing he loved to read about were books on the ocean. And he used to go to the library and get out giant nonfiction books filled with pictures of the ocean.

And the last thing he loved-- he was obsessed with the X-Men, and would buy the comic books, and we saw the movies. And he would talk endlessly about what superpower he would have if he

was an X-Man. So I set my timer, and I said, OK, can I do this? The Old West, with the ocean, with X-Men.

And it was one of those moments writers always dream about and hope for, where the whole story just fell into my brain all at once. I started moving my pen, and the timer dinged, and I kept going.

DR. DANA: I imagine that creating a plausible underwater world is difficult. There are tactical elements, visual elements, practical elements, creative elements that all need to hang together to achieve a certain level of realism. I wonder if you could read a passage that illustrates how you blend these elements together.

KAT FALLS: Sure.

DR. DANA: In this passage, Gemma is going to visit Ty's subsea home for the first time, and she becomes alarmed by the sudden appearance of an underwater geyser. It's also important to note that, both underwater and above water, Ty's skin glows. It's called shine, and it comes from eating bioluminescent fish.

KAT FALLS: "Ahead, in the midnight blue water, a shimmering wall shot out of the seabed like a geyser. I smiled at her alarm.

'That's our fence. It's charged to keep the livestock in and sharks out.'

'What's it made of?' Then, as the cruiser drew closer, she answered her own question. 'Bubbles!'

The sub hit the dense stream of bubbles and burst through to the other side. Gemma gasped at the light, bright as a summer day on the Topside. A flurry of fish surrounded the sub and then winnowed away to reveal acres of green fields. In the distance, larger fish moved in unison over the swaying kelp, illuminated by the huge banks of lights that encircled our property. 'Hot tar,' she whispered, twisting to look in every direction at once.

'It's pretty great,' I admitted. I was proud of what my parents had created out of the ooze, four hundred feet below the ocean's surface. Especially since people had said it couldn't be done. An unexpected tentacle of sadness wrapped around my heart. I'd picked out the land for my own homestead, measuring out the hundred acres of the unclaimed terrain more times than I'd admit. The land was perfect, too-- beautiful and rich with wildlife. But I couldn't think about that now. I pointed at a shoal of pinkish red fish. 'We have a side venture selling perch, but mainly we farm kelp and plankton.'

'Plankton?'

'Our meadow is up on the ocean surface.' Still, she looked baffled, so I added, 'You eat plankton every day. That green cream added to your food, what did you think it was made of?'

'Not plankton.'

Just then a tiny, glowing shrimp shot out of the jet spray of bubbles and onto the sub's viewport.

'Look,' Gemma exclaimed. 'It's a gem o' the ocean.'

'Yup,' I confirmed. 'It was sucked up by the air jet and got the ride of its life.'

'Oh!' she cried as a cyclone of bright blue fish whirled past, and she climbed into the backseat to follow them. 'You don't eat those, do you?'

'No. Ma keeps them just for pretty. "Like flowers in a garden," she says.'

'But they're tropical fish.' Gemma spilled back into her seat. 'How can they live this deep?'

'Seawater is the same, deep or shallow. We just warm it up and add light and oxygen. The bubbles' --I pointed at the fence, which appeared silvery from this side-- 'keep in the heat.' When I glanced over and found her studying me, I tensed.

Flushing, she mumbled, 'Your skin is distracting.' She pointed at the floating platform across the field. 'What are those cages for?'

I leaned back from the control panel, knowing that its blue light made the fluorescent particles in my skin shimmer. At least she'd said *distracting* and not *creepy*. I steered the cruiser toward the platform lined with cages and basins. 'Lobsters.' I named the contents of each container we crossed. 'Crabs, shri--' Gemma's gasp cut me off. 'What?'

Frantically, she pointed at the far end of the farm. 'Look at that jellyfish!'

I couldn't help but laugh. 'That's our house.' It *did* look like an enormous jellyfish with tentacles dangling into the kelp -- if jellyfish grew as big as whales.

Gemma gaped. 'Your house?' But it's mushy!'

'I know. Your skyscrapers have hard walls and sit in the dirt. But it's different down here. A building needs some give. The smaller ones are outerbuildings where we keep our goats and chickens.'

'You raise farm animals as well as fish?'

'Not to sell. We keep them for the milk and eggs.' Which reminded me I still had chores to do.

As we approached the giant undulating bell that was my home, Gemma's expression softened. 'It's beautiful.'

'Pa modeled all the houses down here after deep-sea invertebrates. Mostly different kinds of jellyfish. Those shapes work better in water.'

'Your father designed all the buildings in Benthic Territory?'

'A lot of them.' Did she think I was bragging? I felt compelled to explain. 'My parents were part of the research team that built the first homestead. Ma's specialty is aquaculture, which is a fancy way to say *deep-sea farming*.'

We pulled up alongside my home. Transparent plastic wrapped the floating house, while honeycombed walls, filled with foamed metal, gave the building shape. I steered the cruiser past a large window and pointed at the room inside. 'See? We don't live much different from you.'

Gemma shot me a look. 'Yes, we all have fish swimming outside our windows.'

'Besides that.' I dropped the sub through a school of red snapper.

'Besides that, your house is exactly like any stack-city apartment. Except it's bigger than one room,' she continued, loading on the irony. 'And not crammed into a concrete tower covered with doomsday graffiti.'

'They can't all be that bad.'

'Some have two rooms,' she quipped, then turned serious. 'Most people live on the affordable floors below the moving walkways and train tubes, so everything is shadowy.' She gazed at the expanse of green. 'We're the ones who are the Dark Life.'

Under the house, a crop reaper moored in hangar. I pushed an icon on the control board and the cruiser rode toward the glowing hole in the bottom of the house. 'It's a moon pool,' I replied to her questioning look. 'The air in the house is pressurized to keep the sea from flooding in.'

We surfaced inside a large, circular room. The ocean was dimly visible through the metal foam walls, giving the wet room a watery glow.

'I still don't get it,' Gemma said. 'Why doesn't the pool overflow?'

'Ever turn a bucket upside down and push it underwater?' I popped the cruiser hatch and then looked back to see her nod. 'Our house is the bucket,' I explained as I balanced on the sub's sloped hull. 'The air trapped inside keeps the water at a certain level.'

'Until the bucket tips,' Gemma said nervously as she stood up in the hatch and looked around.

'Our house doesn't tip,' I assured her. 'The anchor chains keep it down and they're tethered to pylons on the seafloor.' Overhead, a catwalk circled the room. Had we arrived in one of my family's two mini subs, I would've used the clamp to hoist the sub out of the water. But the cruiser was too big to store inside. 'By the way,' I said as I leapt to the pool's submerged ledge. 'We don't like being called Dark Life.'

'Because you don't really live in the dark?' She eyed the sliver of water between the bumper and the ledge.

'No. Because it's a science term for bacteria that can live without light. We're not bacteria.'"

DR. DANA: How much research did you have to do to create this world?

KAT FALLS: A lot. I like research, though. Research can become, for me, a form of procrastination. But, in part, I am a science fiction fan. And I grew up with a father who is still a huge science fiction fan. My father's a scientist, and I went through an engineering school for college, Rensselaer Polytechnic Institute.

And I know lovers of science fiction get pretty annoyed when you do not get the science at least within the realm of possibility, because that's what makes it science fiction, and not fantasy-- is that it is possible alternative world. And so I wanted to make sure anything that I invented down there was not magical thinking on my part, that it had some basis of reality-- a theory that some scientist or engineer or architect had proposed, of how we could live on the sea floor.

So, what I did was go to a lot of web pages, and also articles and books, of experts who were thinking about how we might colonize the ocean. And I read them, and I swiped ideas right and left, and I adapted them to suit my world. But I tried to base them on very real things.

I wanted my pioneers to be able to swim very deep in the ocean, which we can't do today, because we would get the bends. And also, because if our lungs are filled with a gas, whether it's oxygen or a mixture of gases, we have a hollow cavity in our chests, and the water pressure would squash us flat.

I wanted my pioneers to go down to the bottom, as far as they could. So I needed to find a way around that. And so I went to a site where scuba divers are constantly writing. It's a page where they write back and forth. And I was looking for the future of scuba diving, to see what scuba divers thought would be coming.

And they actually have very, very consistent theory, and it's liquid breathing, which has already been invented. It was invented in the '60s, and it's a liquid-- a fluorocarbon liquid-- that has oxygen molecules infused in it. And they can use it today. And they use it to inflate lungs of premature babies, or if a coma patient is going to undergo an operation, instead of intubating the coma patient, they fill their lungs with the liquid. And it's got oxygen in it.

The reason we can't use it yet is it's very thick and goopy, the liquid. And it would hurt to hold it in your chest. But scuba divers believe scientists will find a way to thin this liquid down, so that it is still a liquid, but almost bordering on a very dense fog, and that we could inhale it into our lungs. And then we wouldn't need the tanks of gas on your back, and it would never cause the bends-- because it's the gas mixture that causes the bends, it's in the blood-- and then they could scuba dive quite deep in the ocean.

So I took that, and I named it Liquigen, to try and make it clear that it's liquid oxygen. But it's very much based on something that exists now.

DR. DANA: Was there anything you researched that you wanted to put in these books that just didn't work out?

KAT FALLS: Sea creatures. I mean, I was always researching sea creatures when I was writing this. And any time I came across a really interesting one, or a gross one, or a scary one, I would print out a fact sheet on it, and a picture. And I'd throw it in my sea creature file.

And there were many sea creatures, when I was writing book one, that I couldn't use. I couldn't cram them all in. So I just saved them. And then, when Scholastic bought my book, they bought it in a two book deal. So I was very excited, because I knew I'd get to use them in Rip Tide.

The way I write, is I try to figure out what emotion I want the reader to feel during the scene, and I try to evoke that emotion in me before I even start writing, so that I'm feeling it while I'm writing it.

So there's a scene in Rip Tide, where Ty is on a little raft. And it's a township that's around the raft, and it's floating in the middle hole. And it's a boxing match, and he's going to box this very, very-- wrestling match, actually-- scary opponent. And I wanted Ty to be terrified on this little raft, facing a grown-up man for a wrestling match.

So I had to scare myself. And when I was imagining myself as Ty, I wasn't scared, so at first, I tried to make the wrestler bigger and meaner, and it still wasn't working. And the raft is tippy, and then I thought, oh. If I fill the water with lamprey eels, that will grab you and mass-writhe around you, and latch on and start sucking your blood if you fall into the water-- that would scare me.

DR. DANA: Yeah, that would just about do it.

KAT FALLS: Yeah, It worked for me, but it still wasn't enough, actually. I started writing the scene, and it did scare me somewhat, but it was enough to get my palms sweating. And I really wanted it to be a set piece scene that was very scary. And then, it was the opponent that wasn't working for me.

The opponent was just turning into another big, lunky guy who was menacing, but he wasn't pushing me over an edge. And that's when I remembered this creature that I couldn't find a place for in book one. And I realized he would work perfectly here, and that's the tongue-eating parasite.

And it's this little crustacean creature that implants itself in a fish's mouth, and it eats away the fish's tongue, and it implants itself in the bottom of the mouth. And it becomes the fish's tongue. And the fish uses it like a tongue, and when the fish eats, the little crab gets to eat, also. And the fish doesn't die. It lives that way, with this little crab as its tongue. It's not a happy relationship, but they manage together.

But the first time I saw that, when they opened a fish's mouth in a photograph to show this little crab as its tongue, it just upset me, and scared me, and grossed me out so much that I printed out that picture instantly, because any time I have a really visceral reaction to any kind of sea picture or ocean picture, I save it. And that's what I realized would be perfect, is if this giant, big wrestler had this little parasite for a tongue. And he opened his mouth, and he waggled his tongue at Ty before the wrestling match started.

If I was Ty, that would be enough to send me over the terror edge. And that's when I started writing the scene. The minute I conceived of the idea, I yanked out the picture from my file, propped it up right in front of me, and started writing.

DR. DANA: Your new young adult book, *Inhuman*, was released this month. Tell us more about it.

KAT FALLS: *Inhuman* is my first time writing YA. And I came up with the idea-- well, it was my agent, actually. *Dark Life* hasn't come out yet, and he said, "I want you to come up with another idea for another series, just to have in the file, so that, no matter what the reaction to *Dark Life* is, you have another project that you're excited about to write, so you don't get thrown either one way or another."

And writers can get thrown, even when the reaction is positive to a book. It can freeze them up. They feel like, oh, I can't duplicate that. And you certainly could get thrown if the reaction is negative. And he said, "I want you already with your head in another world." And I said, "All right. I'll see what I can do."

And I hung up the phone with him, and I took my dog for a walk. And I was, just for the fun of it, thinking of my favorite really bad, bad, B,C,D-level science fiction movies, and what I liked about them. And I have a favorite, and I loved it when I was in seventh grade. My father took me. It's Michael York's version of *The Island of Dr. Moreau*. And I actually saw that in the theater a couple of times, I was so obsessed with it.

And then it came out again in the '90s, a remake with Marlon Brando. Truly terrible.

DR. DANA: Oh, I know!

KAT FALLS: And I still love it. I still love the hybrid man-animal creature. And so, I thought, I am going to do something with hybrid. I mean, there are many elements of *The Island of Dr. Moreau* I love.

And I did read the novel in high school, also. And I re-read it once I came up with the idea for *Inhuman*, because I wanted to make sure, if I'm going to pay homage to something I love, that I'm only taking and playing with one element. And, even though I love mad scientists and I love islands-- anything set on an island is fascinating to me-- I couldn't touch any of that. And the only element I was going to play with was the genetic hybrid between a man-animal.

And actually, in the novel, they're not genetic hybrids. He's doing surgery on animals, to give them physical attributes of men. But I thought it would be more interesting if it was taken right at the DNA level. So I was trying to figure out how I could create man-animals, and I'm walking along, and then I remembered a fact about swine flu that I had read. And the fact was that swine flu carries pig DNA on the virus. And it's the same with avian flu. There are a lot of viruses that do this.

And avian flu has bird DNA on the virus. It carries it. Of course, if you catch swine flu, or bird flu, you do not begin to grow a tail or a beak. However, in my book, you do.

And just that fact upset me, and then I came home from my walk with my dog, and I began to think, is it possible? Could a virus ever transfer the DNA, and deposit the DNA, in the host of the virus? And I found out that they're doing it all the time with plants, that they do viral transception, where they're taking DNA, putting it on a virus, and purposely giving it to-- they're using it as a way to change DNA from one plant to another.

And I thought, well, it's only a matter of time before someone tries to do that on an animal. And we have mixed breeds of animals. And from that is where Inhuman sprang up.

DR. DANA: Kat Falls, thank you so much for coming on The BiblioFiles today.

KAT FALLS: Thank you so much for having me.

**©2014 the Trustees of Princeton University**