



RiverBlue

2017 • 90 minutes • Directed by David McIlvride and Roger Williams
Narrated by Jason Priestley • Hosted by Mark Angelo

RiverBlue connects the consumer appetite for fast fashion with a rapid increase in the highly profitable but environmentally damaging production of “disposable” clothing. Host Mark Angelo documents the profound impact of textile factories serving the fashion industry in Western countries on rivers in Bangladesh, China, India, and Indonesia. The factories’ output of polluted water kills aquatic life, contaminates crops, and eventually reaches the open ocean.

Angelo also explores alternative and responsible manufacturing processes that can help resolve this global problem. The Thames and Zambezi rivers provide encouraging examples of restored and pristine waterways, respectively.





CURATOR:

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WHY I SELECTED THIS FILM

RiverBlue documents the profound impact of textile factories serving the fashion industry in Western countries on the rivers in Bangladesh, China, India, Indonesia, UK, USA, and Zambia. The film connects the consumer appetite for cheap and trendy garments with a rapid increase in the profitable but unsustainable production of disposable clothing.

The film visits communities that rely on their waterways for food, livestock, and sustenance, and it chronicles the devastating effects of untreated wastewater from the factories. The polluted water harms the local aquatic life, contaminates crops, and eventually reaches the ocean to spread around the globe.

Overall, the film educates the viewer on the issues of environmental degradation, global trade agreements, workers' rights, and hazardous working conditions. As a teaching tool, the film is more than a critique of the fashion industry; it also explores alternative and responsible manufacturing processes that can help resolve this global problem.

SUGGESTED SUBJECT AREAS

Agriculture	Ethics	Political Science
Business Management	Geography	Population Studies
Economics	Global Studies	Public Policy
Environmental Studies	Legal Studies	

SYNOPSIS

Conservationist Mark Angelo explores the pollution of major international rivers caused by the clothing industry's irresponsible disposal of toxic chemical waste. The impact on Bangladesh's Buriganga, China's Pearl River, India's Ganges, and Indonesia's Citarum—and the people who depend on these rivers—is severe. Toxic dyes and heavy metals from textile manufacturing and leather tanning are frequently dumped directly into these rivers in countries where regulations are lax, poorly enforced, or both. The textile and tannery sectors alone account for 20% of the world's freshwater pollution, says Angelo, but they don't get anywhere near the level of scrutiny that other big polluters receive.

The film includes interviews with local activists, investigators, and manufacturers as it sheds light on a crisis affecting some of the world's most significant waterways. Although it focuses on the pollution produced by the blue jean manufacturing and tannery sectors, the film also explores the latest technologies and cutting-edge alternatives and solutions to the problem that could greatly reduce the industries' water consumption and the dumping of waste.



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THE ENVIRONMENTAL JUSTICE FOCUS

Supported by international trade agreements, fashion companies have outsourced manufacturing and jobs to China, India, Indonesia, Mexico, and other countries where environmental regulations and laws protecting workers and the environment are lax. RiverBlue draws attention to the toxic living and working conditions experienced by workers and their families and the impact of the toxic waste on their health and the environment.

Many workers must perform their jobs in dangerous and unsanitary conditions with continuous exposure to toxins, reflecting the disproportionate exposure of poorer populations to environmental risks in their homes and workplaces. The fashion brands that benefit from these profitable industries often escape responsibility for the damage to the environment and to the workers' health.

RiverBlue argues that alternatives to the current practices do exist, and they could be more widely adopted. Consumer activism, the film suggests, could pressure companies to adopt more sustainable and less polluting practices.

BACKGROUND

From the 1960s to the 1990s, El Paso, Texas, was the blue jeans capital of the world, producing two million pairs of jeans each week. But as the Rio Grande dried up and the North American Free Trade Agreement (NAFTA) allowed brands to hire cheaper labor across the border, U.S. denim manufacturers, including Adidas, Gap, Nike, Old Navy, and Zara, opened factories in Mexico. Many of them later opened factories in Bangladesh, China, and Indonesia, where wages were low and environmental regulations were weak.

As the price of jeans fell and production ramped up, the use of chemicals increased. Distressed “acid washed” jeans, for example, are produced by spraying potassium permanganate and acid onto the fabric at very high temperatures or by sanding it. Both methods are detrimental to workers' health and to the environment. In Xintang, Guangzhou Province—the new blue jeans capital of the world—factories produce 300 million pairs of jeans a year. Producing just one pair of jeans uses 920 gallons of water. Much of this water, laden with heavy metals such as cadmium and lead, is dumped back into the Pearl River with little or no treatment. The pollution is so evident that the “it color” of the coming season can be predicted by looking at the color of the river.





What could be the solutions to this global problem that exacerbates environmental issues through the fast fashion supply chain?

On the bank of Bangladesh's Buriganga River, journalist Pinaki Roy describes how untreated effluents from garment and dyeing industries are causing aquatic life to perish, and stark images of community members suffering from liver and skin diseases are presented. In India, though faith decrees the sanctity of the Ganges River, wastewater polluted with toxic chromium from tanneries mixes with irrigation water to later affect food production. Sunita Narain refers to the toxic pollution and the destruction of the ecology of the rivers as "hydrocide." Indonesia's Citarum River is so polluted by the criminal dumping of factory waste, the water bubbles with gases given off by pollutants that have sunk to the riverbed.

What could be the solutions to this global problem that exacerbates environmental issues through the fast fashion supply chain? One approach is called "Detox." Developed by Greenpeace and adopted by some fashion brands, the Detox campaign reduces the use of toxic chemicals and carcinogens that affect human hormones.

Another initiative, developed by Jeanologia, uses air instead of water to create stonewashed denim. Lasers can also be used to create distressed jeans without the use of chemicals. Italdenim, a company based in Italy, uses chitosan, a natural material made from discarded shellfish, instead of chemicals to help set their blue dyes. Lessons can also be learned from England's Thames River, which was severely polluted because of the toxic effects of industrialization. Following massive conservation efforts and strict legislation, some aquatic health has been restored.

At the consumer end, education and awareness need to be increased. Consumers can "vote with their dollars" and choose to purchase ethically and sustainably produced denim. In the words of Orsola de Castro, a sustainable fashion designer, the textile industry needs to be committed to consumers by paying attention to transparency and traceability, removing toxicity, and reducing textile waste.

KEY LOCATIONS

Li River, Xintang, China

Pearl River, China

Ganges River, Varanasi and Kanpur, India

Buriganga River, Dhaka, Bangladesh

Hazaribagh, Bangladesh

Zambezi River, Zambia

Citarum River, Jakarta, Indonesia

Los Angeles River and Griffith Park, Los Angeles, California

Thames River, London, England



PEOPLE FEATURED

Mark Angelo – river conservationist and founder of World Rivers Day

Tianjie Ma – toxics campaigner, Greenpeace, China

Kumi Naidoo – international executive director, Greenpeace (2009–2015)

Pinaki Roy – reporter, *The Daily Star*, Dhaka and Hazaribagh, Bangladesh

Orsola de Castro – sustainable fashion designer, UK

Peter Goldin – denim designer and creator of stretch denim

Francois Girbaud – denim designer and creator of stonewashed denim, France

Ma Jun – director, Institute of Public and Environmental Affairs, China

Stuart Bunn – water consultant, China

Eric Dickstein – founder and owner, Dutil Denim, Canada

Syeda Rizwana Hasan – chief environmental lawyer, Dhaka, Bangladesh

Rakesh Jaiswal – president, Eco Friends, Kanpur, India

Zafar Lari – tannery owner, Kanpur, India

Hilda Meutia – environmental activist, Jakarta, Indonesia

Sunita Narain – director general, Centre for Science and Environment, Delhi, India

Von Hernandez – environmental activist, Greenpeace, Indonesia

Enrique Silla – president, Jeanologia, Spain

Nicole Bridger – sustainable fashion designer, Canada

Luigi Caccia – president, Italdenim, Italy

Alex Penades – marketing, Jeanologia, Spain

Michael Rodriguez – Blue River Denim, California

Lukus Eichmann – sustainable fashion manufacturer, Eco Prk, California

Avikal Somvanshi – senior research associate, Centre for Science and Environment, Allahabad, India





Carcinogenic dyes and other chemicals used in the textile industry end up in the ocean, where they may travel around the world.

FILM SEQUENCES

For the 90-minute version of RiverBlue

00:00 Introduction and head credits

Mark Angelo introduces the “blue” earth as it appears from outer space. Oceans make up 97% of the world’s water. Another 2% is locked up in ice, which leaves about 1% that can be found in lakes and rivers. Water is a finite resource; with the little we have available, we need to be respectful about using it to meet human as well as agricultural and industrial needs. Rivers also serve as arteries and lifelines.

01:02 The wars of the future will be fought over water

According to Greenpeace’s Kumi Naidoo, “The wars of the future will not be fought over oil. The wars of the future will be fought over water.” This statement is particularly relevant to the issues discussed in the film.

02:03 Cost of Development – China (see also 48:00–53:00)

A woman carries agricultural material in rural China. Worldwatch Institute reports that about 70% of China’s lakes and rivers are now contaminated. China has transformed from a country reliant on agriculture into the world’s factory. Cities are growing at an incredible rate, and industries are rapidly growing alongside them, often without any effective regulation of the use of water. Toxic dumping has resulted in rivers turning red and murky. Ma Jun describes the loss of biodiversity and the health hazards facing the millions of people exposed to water pollution.

Response to environmental problems – China

Tianjie Ma investigates at the grassroots level the impact of exposure to toxins on health. A major source of pollution comes from the factories producing for the Western clothing industry, including Adidas, Nike, and Puma. The carcinogenic dyes and other chemicals used in the textile industry are a primary source of pollution. These chemicals end up in the ocean, where they may travel around the world. While manufacturing offers economic benefits, China has suffered severe environmental damage to its major rivers. Investigating these issues in this country can be difficult.

07:34 “More chemical than water” – Bangladesh

Journalist Pinaki Roy is passionate about the Buriganga River, which receives toxic chemicals from the local garment and tanning industries. But no treatment plants are installed, making the water “ink black.” Sadly, the river contains “more chemical than water.”



17:35

In and around Hazaribagh, 180,000 people are exposed to chemicals. Many have lost their sense of smell, while others suffer from cancer, skin diseases, and liver disease. After the fatal collapse of a factory at Rana Plaza, workplace conditions received global attention, but less attention has been paid to the water pollution caused by factories supplying Western brands and markets. Demand for cheap clothes in the West supports exploitative manufacturing and environmental degradation. Low-cost clothing comes at a high cost.



23:30 The venerated and polluted Ganges – India

A farmer in India walks in the field along the Ganges, India's most polluted river. India's rivers are pristine at their source, but downstream they are polluted by sewage from 600 million people. Untreated sewage is the greatest source of pollution in India. What can be done?

28:20

The Ganges is worshipped on one hand and polluted on the other. Sewage and pollution have reduced the river's oxygen levels. "We are committing hydrocide," says Sunita Narain. "We are deliberately murdering our rivers."



29:23

Kanpur is the leather capital of the region. Wastewater from tanneries pours into the Ganges, with lethal results. Rakesh Jaiswal shows how frothy wastewater is released into irrigation water for 2,500 hectares of agricultural land. This water has known carcinogens like chromium that are entering the food chain. A man is filmed bringing in a few hundred dead fish killed by a chemical spill.

39:00

Turning around a river like this will take time. The Ganges must be restored to its original pristine state so that future generations can continue to revere it as their parents did.



39:20

The Zambezi River is an example of what a river should be with its great diversity and prolific wildlife. As Mark Angelo paddles down the river, narrator Jason Priestley describes Angelo as a river conservationist who founded World Rivers Day. His work has been recognized by the United Nations.

The pollution is so extensive that next year's "it color" for North American fashion can be predicted by observing the color of the river in China.



41:02

Angelo grew up in Los Angeles. While the ecology of the Los Angeles River was already destroyed, nearby Griffith Park was an urban oasis, with creeks and streams that inspired his love of rivers.

42:46 "A river of garbage" – Citarum River, Indonesia

Jakarta, a city of 28 million people, relies on water from the Citarum, Asia's most polluted river. Hundreds of factories line its banks, and unmarked pipes make it difficult to trace polluters. Greenpeace found that PT Gistex, a supplier for Gap clothing and other brands, is one of the polluters.

48:07 China's Li and Pearl rivers

The viewer is shown an image of China's Li River. Downstream, it picks up pollutants as it merges with the Pearl River. Contaminated by human and industrial waste, this water is used by 500 million people. Gastrointestinal cancers are very common in the countryside. Some rivers are so polluted with heavy metals that nothing can survive in them. How did China's rivers reach this state? Who can change it?

Ma Jun says state enforcement needs to be increased. Tianjie Ma and Ma Jun, proceeding carefully to maintain the government's support, determined that China's textile industry releases 2.5 billion tons of untreated wastewater annually, making it a major polluter. The pollution can be traced back to factories producing goods for fashion industry brands such as Adidas, H&M, Nike, Puma, and Zara. Chemicals dumped into rivers reach the ocean and can be detected around the globe.

53:28 The Detox campaign tackles an iconic fashion staple: blue jeans

Greenpeace campaigns to stop the dumping of toxic materials in rivers in the production of clothing, particularly blue jeans. The pollution is so extensive that next year's "it color" for North American fashion can be predicted by observing the color of the river in China. Companies are secretive about their destructive practices.

55:32 Fashion becomes a global industry: a close-up on jeans

El Paso, Texas, was once the denim capital of the world, making two million pairs of jeans a week. Facilitated by NAFTA, the migration of jobs began with factories moving from the U.S. to Mexico in search of cheap labor and lower overall costs. Many of the supply chains are now much longer, stretching into China and Southeast Asia, where environmental laws are lax. Xintang now turns out 300 million pairs of jeans each year. Water consumption is high, Ma Jun says, and so is the environmental cost.

*We are destroying
the planet for the
sake of clothing...
We are dying
for the jeans.*



*Push big companies
to move to greener
methods that are
more sustainable
for the environment.
Don't settle for
"greenwashing."*

1:01:25 Leaders in sustainable fashion

Recognizing the need for change, Orsola de Castro and Nicole Bridger design sustainable products. "We are destroying the planet for the sake of clothing," de Castro says. Eric Dickstein of Dutil Denim produces ethical jeans. Francois Girbaud, the inventor of acid-washed denim, didn't anticipate the heavy pollution and toxic working conditions that followed. "We are dying for the jeans," he says. This is "suicide for the planet." Other designers weigh in.

1:08:20

Does the cleaning up of the Thames River in England offer cause for hope? In Italy, Italdenim uses a material made from the exoskeletons of shellfish, called chitosan, as a fixing agent. It also reduces the amount of chemicals used to make the denim blue. Eco-friendly blue jeans can be a great option.

1:14:40

To create textures in their fabrics, Jeanologia developed a waterless method called "watt wash," which is described here.

1:22:09

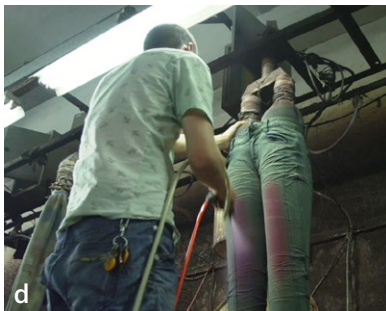
Eric Dickstein and Lukus Eichmann discuss the ethics of generating pollution in the production of denim. Both are committed to reducing pollution and increasing transparency; they are seeking investors as they attempt to create a new brand that promotes a healthy lifestyle. The return on investment is fast, Eichmann argues, because they can eliminate the cost of chemicals and use less water. Big brands can offer lower prices only by outsourcing manufacturing and avoiding responsibility for any negative consequences. The low prices encourage high levels of consumption in the form of billions of garments each year.

1:28:14 Consumer responsibility

Buy responsibly produced clothing, and get educated on what is happening in local communities and rivers. Stop hoarding. Use buying power to influence brands and pressure them to "green" their supply chain. Push big companies to move to greener methods that are more sustainable for the environment. Don't settle for "greenwashing."

The next few decades, according to de Castro, is the time when brand names must eliminate toxicity and textile waste. They also must allow their manufacturing processes to become traceable and transparent. Many companies have signed on to Greenpeace's Detox campaign, but there are many other areas where outsourced manufacturing continues to play havoc with the planet.

1:32:00 End credits



DISCUSSION QUESTIONS

For the 90-minute version of *RiverBlue*

1. What is the significance of the title *RiverBlue*?
2. How does textile waste affect the people of Bangladesh, China, India, and Indonesia?
3. What key environmental concerns come to mind when you view the film? Discuss.
4. What makes denim so in demand?
5. What are the problematic chemical processes that are toxic to the environment and detrimental to human health?
6. What is “fast fashion,” and how does it contribute to the cycle of unscrupulous profit making and heightened consumerism?
7. Discuss the following: “The wars of the future will be fought over water...”
8. Pick any of the following images and discuss in breakout sessions.
 - a) the Citarum River, resembling a simmering cauldron (43:29–43:50)
 - b) in China, a man with eyes that were yellow where they should be white (5:00–5:07)
 - c) a frothy river in India (36:50–36:51)
 - d) a worker spraying pink dye (potassium permanganate) on denim in a Chinese factory (55:07–55:09)
 - e) a man carrying a basket of dead fish in India (38:20–38:30)
9. What happened to the old blue jeans capital? Discuss the reasons why a new jeans capital emerged.
10. When President Bill Clinton signed NAFTA, he said, “It will create the world’s largest trade zone and create 200,000 jobs in the country by 1995 alone.” What were the implications?
11. What did Greenpeace find in Indonesia? Is Gap responsible, as Greenpeace suggests, for the toxic pollution of the Citarum River?
12. How much water goes into making a pair of jeans? What is the environmental footprint of each pair?
13. How would you go about making an “ethical” pair of jeans? Share quotes by the two individuals from Dutil Denim.
14. “Watt wash” and chitosan pave the way for more sustainable manufacturing processes. Discuss.
15. Can environmental damage be reversed? Give examples.

EXCERPTS OR SHORT VERSION

Where time is short, the following clips, with a total length of 26 minutes, may be viewed in class or assigned for viewing outside class. These excerpts are drawn from the 52-minute version of *RiverBlue*. Clips may be accessed on the film viewing page.

Clip 1: 01:35:43 – 01:52:45 **Length:** 17 minutes

Clip 2: 02:07:45 – 02:16:43 **Length:** 9 minutes

OPTIONAL ADDITIONAL VIEWING

Lifting the Veil on Pollution in China (7 minutes)

This short video, included in the GEJ collection, describes the successful work of a Chinese NGO that is putting pressure on major fabric manufacturers and their fashion industry clients to clean up the effluent from the factories. The film, originally broadcast on PBS's *Frontline*, also poses the question: Who owns the pollution?



DISCUSSION QUESTIONS

For the excerpts and the short film

1. Sunita Narain used the term “hydrocide” to describe the impact of the factories. How are we “killing our rivers”?
2. What has been the impact of rapid economic development on China’s environment?
3. What chemicals are used in fabric dyes, and how do they end up traveling around the world?
4. Several of the documentary’s subjects suggest that the fashion industry exploits both human and natural resources. Do you believe that is true? What evidence is provided? Where else might you look to assess this claim?
5. How does toxic waste affect agriculture? How might chemical waste enter the food chain?
6. What could the fashion industry—or regulators—do to stop the harm the industry is causing to the rivers and to people?
7. If *Lifting the Veil on Pollution in China* is also viewed: The representative of the Natural Resources Defense Council suggests that a share of the pollution in China belongs to the countries, companies, and individuals that consume the products. Can one country “own” the pollution of another? Where else would this apply?

One of the necessities of life is access to clean drinking water. Decades of industrial dumping, farming pollution, and water plant and pipe deterioration have taken a toll on local water systems in North America.

ACTIVITIES

1. Visit any large fashion store (such as Gap, H&M, or Old Navy) and pick up an item of clothing. Note where it was made. Check your own wardrobe for clothing made in the countries mentioned in the film. Research and discuss the impact of [NAFTA](#). What are the pros and cons of this and other trade agreements?
2. View [The Deadly Cost of Fashion](#), a 5-minute BBC documentary about the fatal collapse of a garment factory at Rana Plaza in Dhaka, Bangladesh. *Viewer warning: This video contains disturbing images.* Discuss how the garment industry in Bangladesh uses cheap labor to manufacture clothing for European and American markets.
3. View *Plastic China*, one of the feature-length films in this collection. What are the working conditions at this local processing center? How is the situation similar to or different from clothing factories in Bangladesh? China has recently refused to accept more plastic waste from other countries. Does that fix the problem? Why or why not? And what are the repercussions? Find out more in this article from [NPR](#).
4. One of the necessities of life is access to clean drinking water. Decades of industrial dumping, farming pollution, and water plant and pipe deterioration have taken a toll on local water systems in North America. A crisis in Flint, Michigan, shows how unsafe or tainted water that doesn't meet Environmental Protection Agency standards can affect the health of a community. Find examples of other incidents. Who is affected? Why do these problems persist? Explore this site at the Pulitzer Center on Crisis Reporting: [America's Clean Water Crisis Goes Far Beyond Flint](#).

SUPPLEMENTAL MATERIAL

Read about calls to action to [reform the fashion industry](#).

[Read about the industry's plans to reform](#).

Investigate the use of more sustainable materials in the fashion industry: view *How Technology Is Shaping the Future of Sustainable Fashion* at [fashionista.com](#).

Explore the issues in greater depth. Download this PDF from WRAP: [Valuing Our Clothes: the cost of UK fashion](#).

Discover what you and others can do to [encourage sustainable fashion globally and locally](#).