[Lights of Life Illuminating the Ina Valley: A 100-Year Legacy of Firefly Restoration] A story of a community uniting to restore rivers and villages, saving fireflies from the brink of extinction and passing down over a century of pride to future generations.

INA VALLEY, Japan
Nagano Inadani Tourism Bureau
Regional Areas (including counties, regions, provinces)
Nature & Environment

Summary of Good Practice Story
Tatsuno Town in Japan's Ina Valley, once a legendary firefly habitat, saw its fireflies pushed twice to the brink of extinction — first by over-collection and industrialisation in the early 1900s, then by water pollution during the 1960s-70s economic boom. Residents responded with evidence-based, multi-generational conservation: research by the Tatsuno High School Biology Club identified water quality as the root cause, leading to Japan's first dedicated artificial firefly channel built in 1973 using spring water, sustained ever since through resident-led channel cleaning and maintenance. This effort has since been institutionalised through bodies like the Hotaru no Sato Machizukuri Promotion Council, uniting residents, schools, researchers and local government in watershed-wide stewardship, and now underpins an annual Firefly Festival drawing over 100,000 visitors, framed as environmental education rather than mere spectacle. The century-long lesson: durable conservation comes from shifting focus from protecting a single species to restoring the entire habitat that sustains it, sustained by a shared multi-generational narrative rather than one-off investment.

Setting the Scene: Destination & context

Tatsuno Town, located in the northern part of the Ina Valley in Nagano Prefecture—sandwiched between the Central and Southern Alps—is blessed with pristine streams and "Satoyama" (traditional landscapes where human activity and biodiversity coexist).

Historically, the Tenryu River basin was known until the early Meiji era (around 1868) as a place where fireflies swarmed everywhere, and today, visitors can still witness their mesmerizing dance, centered around the "Tatsuno Firefly Park."

For Tatsuno, fireflies are not merely a tourism resource; they serve as a "bio-indicator" of pristine water quality and are, in themselves, a "local cultural heritage" that residents have safeguarded for over a century.

This narrative records how the community overcame the threat of firefly extinction through the collaborative governance of residents, schools, researchers, and local government, passing on a sustainable regional model as the "Town of Fireflies" to the future.

The Turning Point: Why change was needed

In Japan, fireflies have long been cherished as a seasonal poetic charm of summer nights, symbolizing the "aesthetic sensitivity to nature" ingrained in Japanese culture. This "culture of appreciating fireflies" has been a source of pride in Tatsuno for centuries. However, the fireflies of Tatsuno have faced two major crises.

-The First Crisis (Early 1900s–1920s):

While Tatsuno was a renowned firefly sanctuary until 1868, the modernization of Japan brought environmental changes from the silk industry and a surge in tourists following the opening of the railway. Excessive capture for sale caused firefly populations to plummet. Local elementary school teachers and students led the first conservation movement, which eventually expanded region-wide and led to Tatsuno being designated a Prefectural Natural Monument—a pioneer of nature conservation in Japan.

-The Second Crisis (1965–1970):

Rapid economic growth transformed industrial structures and lifestyles, leading to the deterioration of water quality in the Tenryu River and irrigation canals. Fireflies and their prey, The kawanina snail (Semisulcospira libertina), neared extinction. Witnessing this reality, residents realized that the loss of fireflies meant the loss of their own identity and pride.

These crises served as a major turning point, moving beyond temporary protection to a fundamental transformation where the entire region took ownership of "environmental stewardship."

The Vision: What you set out to do

-Vision: Building a Sustainable Model of Regional Symbiosis-

Tatsuno Town’s objective went beyond increasing firefly populations. Our ultimate goal was to construct a sustainable regional model that "restores the habitat (the bio-indicator's living base) where fireflies can thrive and passes that landscape to future generations."
We shared the principle that "protecting fireflies means protecting the environment in which they live." We defined the decline of fireflies not merely as a population issue, but as a challenge to our "Satoyama ecosystem," resolving to place water quality improvement and environmental conservation at the heart of regional development.
This vision is supported by a common desire among diverse stakeholders—residents, schools, researchers, local government, and tourism partners—to "leave the landscape where fireflies dance for our children and the generations to come." We aim for a sustainable community where people and nature coexist, viewing firefly conservation and tourism as a "virtuous circle of conservation and tourism."

The Journey: How change happened
-The Journey: Environmental Restoration through Ecosystem Research and Innovative Infrastructure
Facing our second crisis, we approached firefly protection through "evidence-based conservation".

STEP 1 (Ecological Research): In 1955, the Tatsuno High School Biology Club began research, utilizing scientific knowledge to guide larval release. Identifying water quality as the root cause, we shifted from symptomatic treatment to environmental improvement.

STEP 2 (Infrastructure Innovation): In 1970, residents and the government collaborated to introduce spring water into irrigation channels. By 1973, we constructed "Japan’s first dedicated artificial firefly channel"—an innovative infrastructure project to recreate the ecosystem. This halted the decline and established a system for the secure protection and breeding of larvae and kawana snails (Semisulcospira libertina).

STEP 3 (Grassroots Stewardship): We have continued maintenance, including channel repairs and annual cleaning (mowing and dredging), conducted by residents and stakeholders. This environment is supported by "grassroots stewardship".

These efforts are sustained by multi-stakeholder collaboration, where children learn about the environment, residents engage in conservation, researchers conduct surveys, and tourism partners lead awareness campaigns, each fulfilling a clear role to safeguard the habitat to this day.

The Breakthrough: What you achieved
The Breakthrough: Restoring Natural Capital and Establishing Sustainable Governance

1. Sustaining "Living Heritage"
Through decades of region-wide effort, Tatsuno Town has successfully restored its firefly habitats. Twice threatened with extinction, these fireflies are protected by community-wide activities and cherished as a "Living Heritage"—a symbol of our community passed down to future generations.

2. Educational Tourism
Our annual "Shinshu Tatsuno Firefly Festival" attracts over 100,000 visitors, yet we position fireflies not merely as a tourism commodity. Instead, we treat them as a vital educational resource, designed to inspire visitors to value the importance of environmental conservation.

3. Conservation as Infrastructure
Our initiative transcends simple species protection. By meticulously maintaining firefly habitats, we have created essential "infrastructure" that actively preserves the natural environment and supports the long-term health of our entire regional ecosystem.

4. Institutionalized Governance
These efforts have evolved into permanent civic governance systems, such as the "Hotaru no Sato Machizukuri Promotion Council" and "Hotaru Lab". Our greatest achievement is rooting conservation into our regional culture. This 100-year legacy serves as a resilient foundation for our town’s sustainable development, ensuring our commitment to nature continues to flourish.

Reflections: What you learned and what others can learn
Tatsuno Model: Strategic Management Integrating Ecosystem and Tourism

1. Shift to Habitat Protection
We learned that the true value of fireflies lies in the environment—the water—that sustains them. This shift from simple "species protection" to holistic "habitat management" is the core of our sustainability.

2. Multi-Stakeholder Governance
Success relies on "multi-layered collaborative governance" involving children, residents, researchers, and tourism stakeholders. By organizing these efforts into bodies like the "Hotaru no Sato Machizukuri Promotion Council" and "Hotaru Lab," we have institutionalized these activities as regional culture rather than temporary initiatives.

3. Broad Watershed Management
Natural environments transcend administrative borders. Protecting fireflies means protecting the entire watershed's water environment. Collaborative efforts across the Ina Valley create a model of shared values, serving as a benchmark for other regions.

4. From Resource Consumption to Capital Regeneration
We shifted toward "regenerating natural capital." Integrating conservation and tourism as mutually supportive elements is the key to sustainable regional development where people and nature coexist.

5. The Power of Shared Narrative
Our 100-year history is driven not by massive investment, but by a "shared narrative"—a multi-generational, deep-seated desire to preserve the landscape where fireflies dance for the future.

The Ripple Effect: Lasting impact
1. Regional Transformation Firefly conservation in Tatsuno Town has expanded beyond nature protection, becoming the foundation of our entire regional development.

2. Intergenerational Continuity Firefly-based education remains vital, fostering deep local pride among children. The spirit of conservation, ignited by students a century ago, is actively passed down through generations.

3. Scaling Up Initiatives led by the "Hotaru no Sato Machizukuri Promotion Council" and "Hotaru Lab" now encompass broader environmental education and human resource development. We share a regional understanding that protecting fireflies means protecting our watershed's water environment.

4. Global Scalability This initiative serves as an "integrated model for ecosystem restoration and tourism," applicable to regions worldwide. Our 100-year legacy of intergenerational knowledge provides a universal, sustainable prototype for regions facing the extinction of endemic species, ensuring a future where people and nature coexist.

5. A Hopeful Future The fireflies that once faced extinction now illuminate the Tenryu River basin. This light is more than a natural phenomenon; it is our "pride of the town," protected across generations. We will continue to champion this sustainable future.

Awards or Certifications
-Designated as a Natural Monument of Nagano Prefecture (1925)
-Expansion of designated area for the same designation (1928)
-Designated as a Natural Monument of Nagano Prefecture: "Tatsuno Firefly Breeding Ground" (1955)

Web Articles
-The Guardian: 'Brief shining of the light': Japan's fireflies dance – and mate – in isolation amid Covid-19

https://www.theguardian.com/world/2020/jul/08/brief-shining-of-the-light-japans-fireflies-dance-and-mate-in-isolation-amid-covid-19

-Digital Journal: With festival cancelled by virus, Japan fireflies dance alone
https://www.digitaljournal.com/article/with-festival-cancelled-by-virus-japan-fireflies-dance-alone/

-Tatsuno Town Official Website: Popular Sights for Fireflies – Matsuokyo Valley
https://tatsuno-hotaru.jp/english/popular/

Other Relevant Links
-Shinshu Cultural Heritage Database
https://www.82bunka.or.jp/bunkazai/detail.php?no=2231&seq=

-Tatsuno Town Official Website: Firefly Emergence Updates
https://tatsuno-hotaru.jp/

Quotes or Testimonials
Voice from the Hotaru no Sato Machizukuri Promotion Council:
"We are not merely safeguarding the fireflies; we are the guardians of the very cradle of life that allows them to exist."