

# Winter-flooded Rice Paddies Nurture Biodiversity and Restore the Natural Environment of Satoyama

**Late Autumn** 晩秋

**Illustrated Calendar of Winter-flooded Rice Farming**

**Water Birds and Preferred Water Depth**

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**Fertilizing Effects**

**No Agricultural Chemicals, No Chemical Fertilizers**

**Preparing Rice Seedlings for Winter-flooded Rice Paddies**

**Effect on Weed Control**

**Control of Cadmium Absorption**

**Integrated Biodiversity Management (IBM)**

**Frogs and Spiders Eat Insect Pests**

**White-fronted Goose: a flagship species**

**Give-and-take Relationships between Rice Paddies and Migratory Birds**

**Winter-flooded Rice Paddies Q&A**

**White-fronted Goose: a flagship species**

The white-fronted Goose is a typical winter migratory bird that breeds in tundra of arctic Russia in summer. In autumn, they travel about 4,000 km south to Miyagi Prefecture, Japan. It is a large bird with a wingspan of about 160 cm.

It used to be found all over Japan, but its number and habitats have decreased due to over-hunting and land development. Since legal protection took effect in 1971, the number has increased to over 100,000. Suitable habitats, however, remain few. It needs a wide, safe area of water and rice paddies for overwintering. It is thus a symbol of rich biodiversity. Most of the population now overwinter in northern Miyagi, where such habitats still exist.

**Give-and-take Relationships between Rice Paddies and Migratory Birds**

**Relationship between the White-fronted Goose (a flagship species) and Rice Paddy**

The White-fronted Goose was threatened with extinction and designated a protected species in 1971. Although its number has been increasing, its major habitats are still limited to the northern part of Miyagi Prefecture. Winter-flooded rice paddies are new roosting sites; these rice paddies around the sea become new habitats for the geese to spread their distribution.

Rice paddies are classified as one type of important wetlands under the Ramsar Convention. Rice Paddy Restoration X (X.3.1), proposed by Japan and Korea at Ramsar COP10, 2008, recognized the biodiversity of rice paddies. At CBD COP10, 2010, a similar decision (X.4) was also adopted.

**Winter-flooded Rice Paddies Q&A**

**Q: How to secure a water source during winter?**

**A:** Use diverted river water, shallow wells, mountain streams, or irrigation. Use an electric pump or gravity to channel the water. Plug under drainage and repair ridges between paddies to prevent leakage.

**Q: Will winter flooding the paddy cause inconvenience in the spring?**

**A:** It depends on soil quality and farming method; however, our research shows that soil returns to normal about one month after drainage. It should cause no major problems if the drainage timing is set according to soil type. When paddies get too swampy, they can be temporarily dried while continuing winter-flooded cropping.