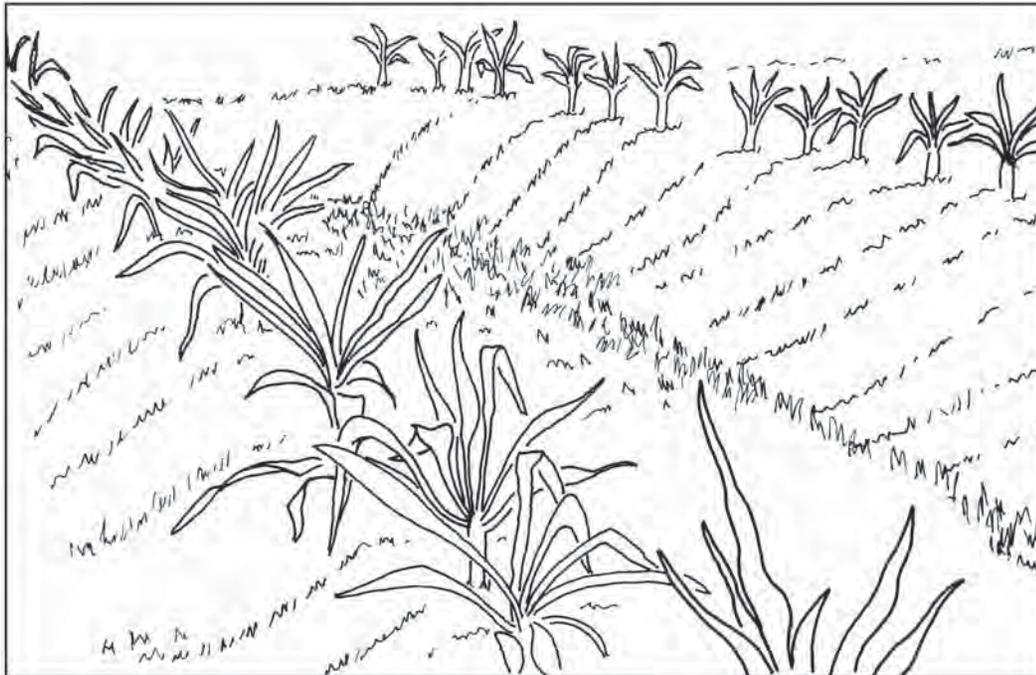

Grassed Waterways

for Pacific Island Farms

USDA NRCS Practice (412)



Build grassed waterways on your farm to carry water across fields and down steep slopes. They also serve as an outlet for roof runoff structures and hillside ditches.

What is a grassed waterway?

A **grassed waterway** is a natural or man-made drainage ditch that is carefully shaped and planted with strong rooted grass to carry water across a farm or down a slope during heavy rain.

Why use a grassed waterway?

Pacific Island farmers can benefit from building a grassed waterway on their farm.

Using this practice can:

- reduce soil erosion.
- prevent rills or channels forming in the soil.
- serve as an outlet for hillside ditches, diversions and terraces.
- carry water down slopes without causing damage.
- reduce and control flooding.
- keep water clean.
- provide water, food and shelter for wildlife.

To learn more about protecting your farm land from water damage, read ***Protecting Soil on Pacific Island Farms.***

Where are grassed waterways used?

- Where water collects and flows on your farm.
- Where water outlets from hillside ditches, roof runoff structures, terraces, diversions, or other man-made features.

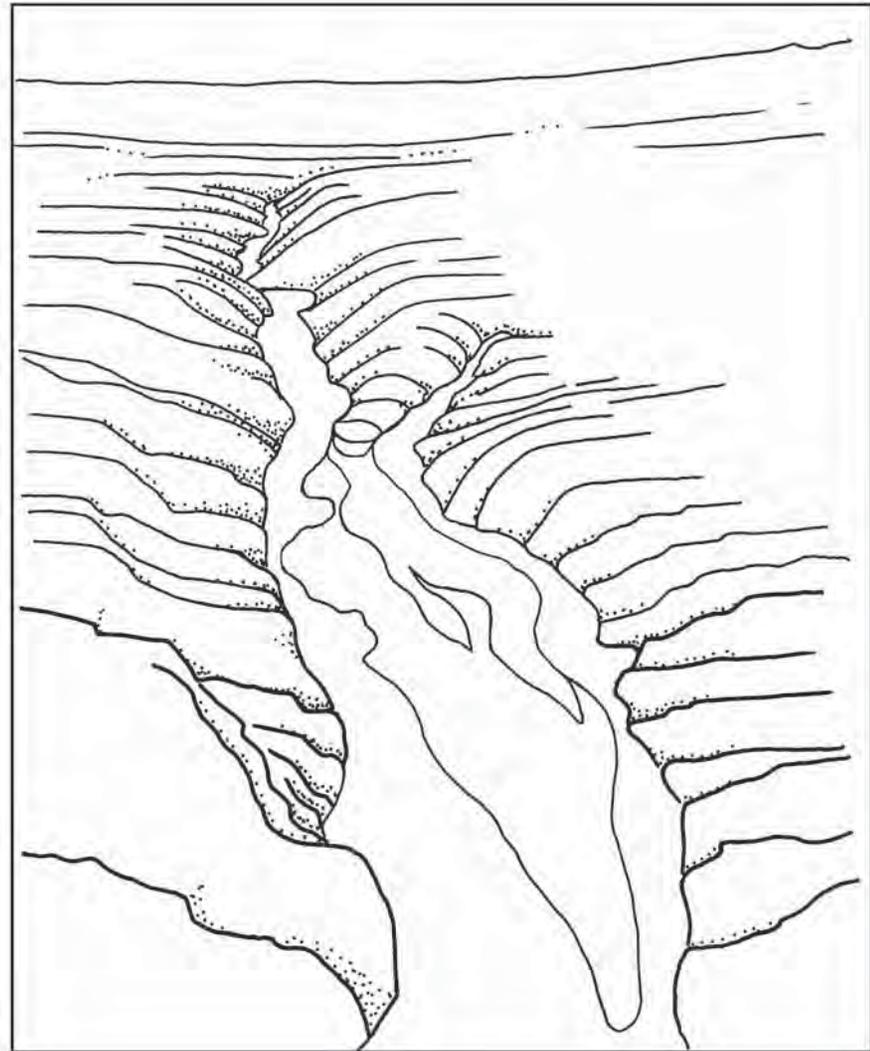
Plan for your grassed waterway

You can use grassed waterways to safely move water across your land. To know how to design a long-lasting waterway, you must watch two things during a rainstorm:

(1) How much water is flowing in the fields? Large volumes of water draining from many acres of land need a large waterway. Small volumes of water can be carried in a smaller channel.

(2) How fast is the water moving? Fast moving water has a lot of power to cut into the soil and will need a strong channel lining.

Go out during a strong rainstorm and watch how water moves across your land. Waterways will usually be needed in the areas where water flows in a small channel.



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A grass with a strong root system can be a good lining for a waterway. Sometimes a stone center is needed.

You may have to reshape these areas into wide, flat channels and then strengthen the channel lining with strong fibrous grasses or even heavy angular rock.

Waterway Shape: The shape of a waterway or ditch makes a big difference. Wide flat ditches can spread water out and slow down its speed. Narrow V-shaped ditches take less space in the field, but tend to concentrate water into a small area and cut down into the ground. You can adjust the shape of the waterway to spread out and slow down water.

Grasses: Rough, irregular surfaces and long grass slow water down. A grass with a strong root system can be a good lining for a waterway. Sometimes if water is flowing too quickly, it can tear out grass. A stone center in the waterway may help, using rough angular rock.

For good plant growth in your new grassed waterway:

- choose grasses with strong, deep roots that grow closely together.

- plan for the grass to take about 3 to 6 months to grow strong enough to carry water without having an erosion problem.
- mow as needed to maintain the desired grass length.

All waterways should be designed by a trained professional. For technical assistance to design and build your grassed waterway, as well as for current lists of suggested plants suitable for grassed waterways on your farm, contact your local office of the USDA NRCS.

For the best results, combine **grassed waterways** with other conservation practices:

- **Vegetative Barriers (601)**: growing small strips of stiff plants across the slope
- **Hillside Ditch (423)**: digging a small ditch across the slope to divert rainwater
- **Roof Runoff Structures (558)**: gutters, downspouts and outlets to collect rain
- **Terrace (600)**: an earth embankment, or a combination ridge and channel, constructed across the field slope
- **Diversion (362)**: a channel constructed across the slope to move water in a desired direction

Additional information is available from your local USDA Service Center or at www.pb.nrcs.usda.gov and www.hi.nrcs.usda.gov.



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