Safe Fish Handling

Stage 1

Stage 2

Stage 3

Stage 4

Degraded

Frozen

Crunchy

Firm

No crystal ice;

Keeps shape, cold

Floppy

Degraded

Frozen, rigid, icy Fish: < 0°F Can bend under pressure; Feels icy cold to touch

Fish: 20 – 28 °F

Refrigerator temp; No rigidity, no ice Fish: 34 – 40 °F

Skin easily broken; eyes sunken

Okay to feed to animals



Safe to feed animal

- No ice
- Unbroken cold chain
- Fed within 48h of reaching Stage 3
- Low odor



- You don't know how long fish has been thawed
- > 48 h since reaching Stage 3
- Not maintained within temp guidelines
- Eyes are sunken or covered by membranes
- Skin in sloughing (falling off)
- Bellies burst at light touch
- Strong "fishy" odor







(Anon 1976; Huss 1995; Crissey 1998; Smith 2004

Storage Temps: *Fridge* 40 − 43 °F ***** *Freezer* -22 − 0 °F

Re-freezing (once): Okay Stage 1 − 3 • Not Okay Stage 4